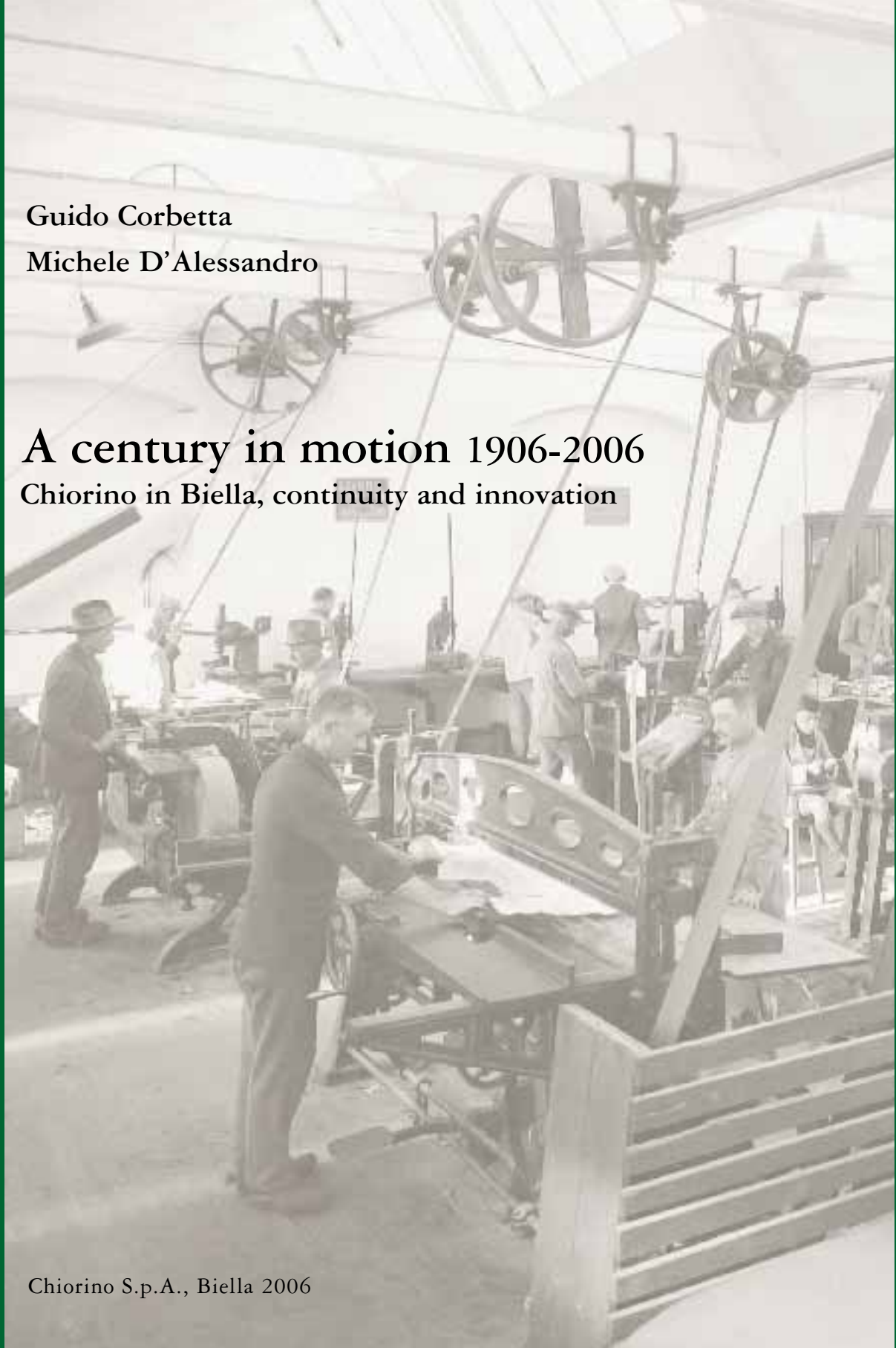
Guido Corbetta
Michele D'Alessandro

# A century in motion 1906-2006

## Chiorino in Biella, continuity and innovation



Chiorino S.p.A., Biella 2006

*Movement* has always been second nature at Chiorino. This quality pervades its products, from the agile and incessant motion of the loom pickers and the spiralling action of the transmission belts driving every type of machine, to the conveyor belts for handling products through the manufacturing process. But throughout its history, movement has meant mainly *change* for Chiorino. Change in the technological direction, from leather to rubber to thermoplastic materials, and change in the organizational and market strategies. A long journey that began to dramatically transform the ancient tannery starting in the sixties, from a manufacturer of industrial leather articles for the local textile district into a major multinational group. Today, Chiorino is a pacesetter around the world for manufacturing conveyor belts and has successfully met the challenges of international competition.

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*Art direction and graphic project*
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*Publishing coordinator*
Luisa Colombo

*Photographs*
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*Translation*
Kelly O'Connor

*Layout and printing*
Musumeci S.p.A.

*Cover*
The picker department in production. Conceria Lorenzo Chiorino (circa 1930).

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# Foreword

A century of changes. Changes not only related to the historic period but perhaps more to the multiplicity of internal industrial transformations that characterized the history of Chiorino (founded as a tannery, it expanded to rubber manufacturing and finally, became a company involved in plastics processing).

Biella is famous for its long-standing industrial textile tradition that spans many centuries; local businesses have been working the same trade successfully for generation after generation.

After Lorenzo founded the company and the subsequent entrepreneurial drive that developed the Chiorino tannery, Italian tanneries descended into a period of deadlocked crisis in the sixties and seventies and only the enormous perseverance and dedication of the new generations of Chiorino, which have gradually taken over company management and operations, began to systematically look for new business opportunities, helping the "old tannery" to become what is known today as the "Chiorino Group" which we are delighted to introduce you to in this book.

This quest, this relentless effort to give a future to the company, beyond the technological transformations, products, markets, and new customers, has been a constant in our history.

We would like to express our special thanks to Professor Guido Corbetta, Professor AIdAF-Alberto Falck of Strategic Management in Family Business at Bocconi University and director of the Entrepreneurship and Entrepreneur Research Centre (EntER). Thanks also to Dr. Michele D'Alessandro of the Institute of Economic History of the Bocconi University for having agreed to write the history of our company as part of the "Celebrazioni" series of the EntER Research Centre. We are especially grateful for the great interest and professional skill they put into their work.

Gregorio Chiorino
*Chairman, Chiorino S.p.A.*

# Introduction

Today, our country is experiencing a period of difficulty rooted in a variety of causes. On the surface, it may seem that the problems originate from the rise of Asian competitors working in the same sectors where Italian companies have excelled, the inability to devalue the currency after the transition to the Euro, the small size of average Italian businesses that make it difficult to supervise foreign markets and the investments in research with long term returns.

However, numerous analyses conducted by the most qualified study centres confirm that in spite of this generally negative framework, many Italian companies continue to produce positive results in terms of growth and profitability. These farsighted companies have invested in building recognized *brand names* or in blazing new trails in research into innovative products. They have made timely entries into growth markets and have built wide reaching and efficient networks of distribution and post-sales service. What is the difference between these companies and companies that are unable to successfully cope with modern times? One explanation might lie in the personality of the individual entrepreneur. In our country, there are companies led by astute entrepreneurs and others whose business acumen has declined. Vibrant and dynamic entrepreneurs are people who look to the future, who confidently assume the risk of difficult decisions, who can involve others in a long-term plan, with the energy necessary to get up and start over after a partial setback. Entrepreneurs are an irreplaceable resource in a country's economy. Why is it then that in our country, historically a breeding ground for superior entrepreneurs, the number and quality of these individuals is declining? Clearly, to arrive at a true diagnosis, the analysis warrants a more in-depth exploration. Let us suffice to say here that the primary reason for the difficulty may be in how the spirit of entrepreneurship is transmitted to the subsequent generations and therefore, is a problem of training young people. Entrepreneurship is a combination of enthusiasm, values, behaviours, and abilities that can be trans-

mitted to young people with the commitment of the older generations. This conviction has culminated in the "Celebrazioni" series, promoted by the Entrepreneurship and Entrepreneur Research Centre (EntER) at the Bocconi University. The anthology aims to celebrate entrepreneurship, not so much with the objective of assigning someone the "license" as entrepreneur (real entrepreneurs don't need it) but to present to the world, especially to young people, the stories of entrepreneurship that have written the industrial history of our country. We propose to explore a family, a company, and a region, describing the events, forming the profile of the individual members, attempting to offer a convincing interpretation.

One of the first companies to express an interest in this project was Chiorino, which is also celebrating its first one hundred years of history. My colleague, Michele D'Alessandro, and I were delighted to accept the invitation extended by Gregorio Chiorino and his entire family, for a number of reasons. It has been an honour for me to have known this family for the past twenty years. I was introduced to the family when my professor, Vittorio Coda of the Bocconi, and I studied one of the standard-bearers who characterized the history of an entrepreneurial family. I remember that Saturday morning in Biella, when we presented several transparencies entitled "Reversing the perspective" to the six Chiorino cousins. The transparencies described two concepts of a family-operated business, one wholly centred on internal problems and hesitant to open up to the challenges of responsible ownership and management and another, with the inevitable extra effort, which attempts to combine respect for the past with an orientation toward the future and sentiment with company logistics. So, throughout the ups and downs, the Chiorino family successfully faced and overcame its challenges, committing itself in the difficult change in perspective, with brilliant results. Since then, I have worked with hundreds of family-run businesses and I can confidently say that this early experience served me well. A second reason for my interest involves the sector in which Chiorino operates, on that calls for major investments in research and which has been battling aggressive European competition for decades. When we talk about Italian industry, we often focus on companies operating in low-tech and local sectors, underestimating the numerous companies that have faced difficult contexts and have attempted to beat competitive challenges in "evolved" sectors, the only ones where it is possible to

build the future of our country. A third reason for my interest involves the region of Biella, where Chiorino operates. It is a highly concentrated entrepreneurial territory, which has given a home to a large number of companies of every dimension, capable of prevailing over the competitive challenges in the world. Dedicating one of the first editions of the "Celebrazioni" series to a company operating in this area is particularly significant in order to underline the importance that local contexts can have for the development of entrepreneurship.

I am convinced that any educational institution, especially a university, has the obligation to discuss real problems but, at the same time, should also look for the positive aspects in our society and promote public awareness. This is why I would like to thank all the members of the Chiorino family for having generously and respectfully allowed us to explore their history and put together this book. The objective is to demonstrate the path of the life of a family of entrepreneurs through the many vicissitudes that indelibly mark a company, a family and every individual.

Guido Corbetta
*Vice-Chancellor, Bocconi University*


Original price list of the Lorenzo Chiorino tannery (1906).

# 1.
# "Nothing can replace leather,"[1]
# 1906-1957

The early 20th century origins of the Chiorino tannery are inserted in a major period of transformation for our national economy. In the period between the turn of the century and the outbreak of World War I, the industrial fabric of the country changed at an unprecedented intensity which would be equalled only decades later in the economic boom of the post-World War II era. This was the age of the "take-off" or the "big spurt" as historians have often called it, an age dominated by political experience led by Giolitti with substantial average annual increases in production, volumes of international trade, and per capita gross domestic product. The growth of the quantitative figures was accompanied by a series of deeply influential changes in the economic and social fabric of the country, which marked the entrance into the process of growth and structural transformation that economists defined as "modern economic growth".

Of all the changes, the most relevant involved the industrial sector, which made significant progress and planted deep roots in the productive structure of the country, driven by sizeable investments in machinery and in plant construction. The contribution of industry to formation of the gross domestic product grew in those years - at the expense of agriculture - and at the same time, its proportion in distribution of the active population also grew. The complexity of the industrial sector was augmented by the presence of new production branches related to progresses made in science and to innovations achieved in the last quarter of a century. Mechanics, chemistry, rubber, steel working, and electricity were all growth areas, with an especially visible impact not only for the role that they initially played and which they would continue to play in the national production structure, but also because these were accompanied by many trends characteris-

[1] Coined in the fifties, "Nothing can replace leather" was the slogan that the tannery used to stamp on the back of envelopes for its ordinary correspondence.

tic of the modern industrial economies ranging from the spread of the large enterprise, innovations in production organization approaches, the rise in joint-stock companies, relationships with banks, and oligopolistic concentration.

Alongside these sectors, also experiencing a happily positive trend were the older industrialized, relative light areas, generally catering to the end user. These fields were frequently populated by small-scale production businesses marked by traditional methods of organization, processing, and invested capital and still dominated in terms of actual numbers of enterprise. The food and tobacco, part of the textile and mechanics, wood and furniture, hides and leather, paper, glass and clothing industries very often benefited from the new opportunities generated by the increase in private consumption and, at the same time, by the increased availability of new technologies and sources of energy, finding opportunities to make modernizing transformations, which offered multiple possibilities to express individual talents and directing important stimuli to the manufacturers of intermediate and capital goods. The national economy was rapidly being reshaped and a consequence of this was significant changes in trade, where wool and cotton fibres and fabrics began to appear in great numbers alongside more traditional exports (formed by agricultural products, food, raw materials, and small high-quality handcrafted products) and imports posted a substantial increase in industrial machinery and raw materials.

Many circumstances contributed to achieving these results. On the domestic front, we find institutional innovations introduced at the dawn of the Giolitti age in the currency and credit markets, which were overhauled, reinforced and stabilized by rescue interventions, by establishment of the Bank of Italy in 1893 and - thanks to the injection of foreign capital - by the birth of the universal bank, better able to guide the growth of enterprise (especially businesses in new sectors) with respect to the model of the preexisting investment banks, which had run aground in the shallows of speculation. At the same time, the role of institutions such as ordinary savings and loans and community banks grew on the strength of new authorization to perform a diversity of transactions and which were better equipped than the national banks to meet the needs of local economies.

Internationally, Italy’s introduction into the international economy characteristic of the *belle époque* was an important factor in its external rela-

tions. The first extraordinary event of globalization of the contemporary age allowed the country - open to circulation of goods, capital and individuals across national borders - to attract essential resources for development in the form of financial capital, direct investment, technology and expertise and, at the same time, to export part of the excess national product and labour, precluding imbalances unsustainable to the balance of payments. This made it possible to meet the needs generated by development without having to impose restrictions on accounts with international partners.

The extensive changes in the economic structure of the country were flanked by similarly significant changes in social relationships. In particular, the spread and establishment of factories significantly changed industrial relations. The conflict between entrepreneurial interests and the interests of labourers experienced a rising and generalized intensity in the first decade of the century, with a considerably high number of strikes called in 1901-02, 1906-08, and renewed agitation again after 1910. The industrial action involved hundreds of thousands of workers and influenced nearly every production sector, especially agriculture. The first decade of the century were years of conflict, animated by the fact that entrepreneurs and labourers began to understand what they wanted. Rather than be suffocated by the police, labourers were allowed to bring their grievances to the table and they gradually banded together to assume an innovative institutional form, centred on collective bargaining. Parallel with these developments, new forms of organization of interest began to evolve after 1906 with the rise of general industrial confederations, founded on the initiative of the Industrial League of Turin on the one side, and labour on the other.

Hinged on the textile industry, the economy in Biella made major progress in the twenty years before the Great War. A report by the Chamber of Commerce of Turin in 1909 provides an extensive picture of the local economy, beginning with the wool sector which was far and away the strongest in terms of the workforce employed and installed utility power. It was ranked the most important industrial sector in the country. Manufacturing processes in the wool industry had long been automated; starting from the mid 1900s, the average size of businesses more than doubled in the space of nearly fifteen years, while the use of electrical motors spread rapidly and manufacturers demonstrated the tendency to concen-

trate processing phases (spinning, weaving, dyeing, finishing) in a single company. The greatest challenge that remained to be faced by the sector was competition on the export markets in the upper brackets of the market, reserved to high quality fabrics.

Second after wool was the cotton sector, which began to show considerable expansion at the turn of the century, especially in cotton spinning, which spilled over its positive effects throughout the entire local system. Knitting, the fourth largest sector in terms of workforce numbers, also occupied a respectable position in Biella and could take pride in the reputation of quality that its products enjoyed abroad.

The textile sector was still far from exhausting the industrial picture of Biella. Quite the contrary, its importance acted as a guide to development for a diverse group of businesses which specialized in production of textile machinery and related accessories (weaving, carding, spinning, dyeing and finishing machinery), hydraulic motors, transmission parts and equipment and tools of every kind. In the Giolittian age, the dimension of these companies increased substantially and the most specialized were able to establish market outlets across Northern Italy and in Tuscany.

Less related to the other sectors, but still ranked third in terms of the workforce employed and second in terms of the use of utility power, was the paper industry, while another important sector in the Giolittian age was millinery, a tradition in Biella and celebrated abroad for the high quality of its hat production.

Somewhat less important than these sectors in terms of workforce and utility power employed, but no less traditional and equally involved in a consistent process of renovation, was the tanning industry. Its expansion continued apace with development of the national economy which, in the last three decades of the century, witnessed a 63% increase in the volumes of imports of raw hides and skins and 75% in the workforce, earning the sector fifth place in the Kingdom’s manufacturing industry for its contribution to added value.[2] Between the turn of the century and the outbreak

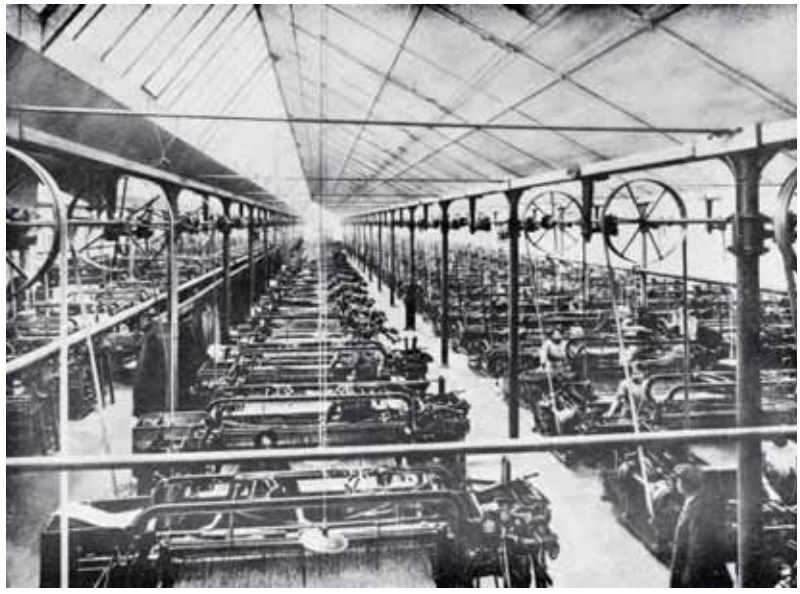
[2] Between 1876 and 1904, the number rose from 9,487 to 16,600, while imports of raw hides and skins, which totalled 12,900 tons in the five years between 1875-1879, mushroomed to nearly 21,000 tons in 1900-1904 (cf. L. Berardo, *L’afrore del tannino. Mutualismo, cooperazione e industria conciaria a Bra, 1852-1981*, Turin, Edizioni Gruppo Abele, 1997, p. 123).

of the war, new mineral tanning techniques were introduced which increased the average size of the businesses. Most of the plants run using the traditional methods disappeared, while use of machines and utility power increased. In addition to the increase in demand for leather distributed on the consumer market (footwear and small leather goods), automation of the industrial manufacturing processes and generalized introduction of steam machines and electrical motors represented important stimuli to the evolution and specialization of the sector. These developments called for a large quantity of leather components (enormous quantities in the case of textile machinery) and at the same time, more elastic and durable transmissions systems of the utility power that would cause less friction. The durability and reliability guarantees offered by leather belts were decisive in fostering the success of the market. Fine-tuning of the tanning procedures, made possible by recent technological innovations, resulted in impermeable, uniform, flexible and lightweight products. Again at the end of the 1920s, the category associations (Italian Leather Industry and Trade Association) estimated that leather belts accounted for "80% of the consumption in normal transmissions and perhaps 90% in the main control transmissions".[3] Owing to the increases in domestic demand and the technical and organizational innovations progressively introduced, the most advanced companies in the sector managed to attain equal standing with their international competitors. However, foreign competition had been faster-acting in making technological upgrades and therefore still dominated the supply markets of raw materials and was well-positioned on the consumer markets. In 1914, despite the progress made, the total capacity of national industry was still not enough to meet domestic demand; a large quantity of tanned hides had to be imported and there were still wide margins for additional growth.

Piedmont was a leader in the tanning sector[4] and Biella stood out in the regional picture in which, aside from Turin, only the province of Cuneo

[3] In the old industrial factories, transmissions were primarily mechanisms that transmitted movement, generated by steam engines or by centralized motors, with long drive shafts located near the ceilings of the lofts, which in turn drove the motion of numerous machine tools with specific belts and pulleys.

[4] In 1904, it was the leading Italian region with 194 factories, 3,016 employees, one thousand units of horsepower, more than 4,100 tanks and a large number of electrical motors.

1. Advertising illustration of the double tanned “Cromo corteccia” transmission belts (circa 1920).
2. Transmission belts used as secondary commands in the textiles room of Lanifici Rivetti of Biella.

had a substantial presence. Based on Turin Chamber of Commerce statistics, in 1892, Biella gave a home to fourteen tanneries which employed a total of 170 men and 77 horses. In 1909, the number of tanneries had fallen to six, but employed a workforce of 277 men and 119 horses, of which 39 electrical.[5] Beyond the actual volumes, leather production was distinguished for the use of chrome tanning techniques and the progressive specialization in the field of transmission belts and industrial articles for textiles and industrial machinery in general. This was an important fact, since before 1900, only Turin, Milan and Biella played host to businesses poised to scale the new technological frontier, while elsewhere, the most advanced manufacturers limited their scope to manufacturing the same products using hides and skins imported from Great Britain, France, Belgium and Switzerland. The existence of a highly industrialized economy, focused on textiles and with a high degree of automation in the manufacturing processes, gave a substantial push to the development of tanning in Biella, which mustered the strength to specialize and consolidate until it could serve a large number of industrial sectors and a vast geographic area, spanning the local and national panorama. Two companies in particular, Antonio Varale (founded in 1733)[6] and Pietro Serralunga (1825),[7] played a

[5] Chamber of Commerce of Turin, *Statistica delle industrie del distretto camerale*, Turin, Tip. della Gazzetta del popolo, 1909, pp. 277-278.

[6] Halfway through 1920s, the Antonio Varale tannery employed some two hundred labourers and twelve clerical workers and occupied a total surface area of 15,000 m2. With a daily output of 1,500 kg of belts, it was one of the first, if not the very first, Italian company to make leather belts and other leather items for industrial machinery. It sold its products throughout Italy, France, Canada, South America and the Far East through a sales office in Milan. Founded by Antonio Varale in 1733 for tanning hides and skins from the fur industry and for footwear, the tannery expanded its production to transmission belts as early as the 1770s. The majority of its most recent development owed to the leadership of Pietro Sozzi, who acquired the company from the original owner and introduced the chrome tanning technique, modernized the manufacturing systems and essentially diversified the product assortment, to include the large range of accessories for industrial machinery.

[7] The Serralunga tannery was founded by Pietro Serralunga to produce leather for soles and uppers of shoes. Under the leadership of Pietro’s son, Giovanni Battista, the tannery began to produce transmission belts and accessories for textile machinery in the 1880s, experimenting on new tanning techniques. Named an auxiliary factory during the First World War, it experienced substantial growth and diversified its product assortment to include belts in camel hair, cotton and hemp. Parallel to the escalation of the company, the Serralunga family also rose up the social ladder, holding important offices in the industrial community and in local and national institutions. Giovanni Battista was a municipal board member from 1877 to 1910; he was also a provincial

ground-breaking role in Biella in this sense, helping to drastically reduce the volumes of imports of industrial leather products, pioneering the export trade to the Asian and South American markets and training a specialized labour force.

The developments that make up the dynamic picture of the twenty years preceding World War I and which were the backdrop to the earliest years of the Chiorino tannery provide some illustrative elements that explain its initial success. In fact, first and foremost, they indicate the existence of a robust demand for capital goods intended for the textile sector and, more generally, for the diversity of manufacturing companies requiring power transmission, operating assets for which Chiorino manufactured essential leather components. Secondly, they suggest that if the climate in the early years of the 20th century was more favourable to entrepreneurial industrial initiatives than it had ever been in Italy after the unification, this was also partly due to the fact that the need for human and financial capital had grown as a result of the establishment and development of industrial activities. Thus, we should turn our attention to the talents and resources that the founder either had available, could procure, or was able to mobilize in order to understand what made it possible to start up a business and what characteristics allowed business to survive, even when faced with periods of alternating fortune. This brings us directly to Lorenzo, founder of the tannery, and his family and his background.

board member, a member of Parliament in 1897, held a fifteen-year office as Chairman of the Italian Tanning Industry Association, member (and several times vice president) of the Turin Chamber of Commerce, and president of the Biella Savings and Loan between 1890 and 1913.

*Lorenzo. The origins of an entrepreneurial adventure*

Lorenzo Chiorino was born in Ponderano, a small municipality south of Biella, on 25 November 1877. His father, Angelo, was born thirty-one years earlier in Ponderano, where he met and married Teresa Sabina Chiorino, also born and raised in the town where he spent his entire life.[8] The couple was blessed with seven children, four girls - Leopolda (1869), Caterina (1873), Maria (1875) and Angiolina (1879) –, and three boys, Giovanni Battista (1871), Lorenzo and Umberto (1882).[9] Angelo was a milliner by trade, a sector that was somewhat less important to the economy in Biella, but was nevertheless very well respected in Italy and internationally. Cited in historic documents at times as a landowner and other times as a farmer, Angelo managed to earn himself a position of relative affluence. He owned outright the family home that he had built at the turn of the 20th century, in Blana, on the road to Cerrione. Angelo accumulated a fair amount of land, very likely due to an inheritance left to him by his father, and he was in the position to donate a small amount of money to his male children when they married.[10] His wife Teresa also owned a small parcel of land, planted with vineyards in the town of Gatto. In 1910, Angelo's total property holdings amounted to no less than 3.7 hectares and were located mainly in the regions of Derbiglia, Blana and Rolletta. These parcels were partly used as grazing land, partly as vegetable gardens and orchards, and partly planted with the ancient vineyards.

He had good reason to acquire the land, especially in an area like Biella, where the spread of the cottage industry had roots deeply planted and in a time, such as Angelo's lifetime (1846-1921), in which the factory system was progressively and widely being established. Firstly, despite the fact that it was not strictly essential to maintaining the Chiorino family, it represented a support to the sustenance of the family household and

[8] Angelo Prospero, as documented in this birth certificate, was son of Giovanni Battista, bricklayer, and Caterina Vigliani. His marriage with Teresa was celebrated in 1868. Cf. Archives of the Municipality of Ponderano, Birth Records and Marriage Records office.

[9] For the personal statistics, Cf. Archives of the Municipality of Ponderano, Birth Records office, several years.

[10] Angelo was the son of Giovanni Battista and Caterina Vigliani, both parents were born and raised in Ponderano.

provided fresh food and vegetables for a large part of the year. This dietary aspect was so important that in the area Biella, as Franco Ramella wrote, “land (was considered) a vital resource and families made great efforts to conserve the property.” This priority need led to the “traditional customs for handing down an inheritance, encouraging emigration and strict demographic controls, and accentuated inbred marriage practices”;[11] in short, a complex system of social customs that attempted to reduce pressure on precious resources and significantly influence major decisions and behaviours of individuals in their lifetimes.

Alongside this basic function, and well beyond the boundaries of Biella, landed property also represented collateral to put up in order to obtain bank loans and finance other needs or other activities. Accumulated wealth was traditionally invested in land and, thanks to bank credit, land could be put back into the production cycle. Precisely because it was a measure of affluence, it continued to hold the value of a *status symbol* even in the framework of the economic and social differentiation processes that accompanied industrialization. Thus, when the opportunity presented itself, Angelo Chiorino used his land as collateral to help his children finance the start up of the entrepreneurial activity.

Going back to Lorenzo for the moment, after completing primary school, in 1889 he enrolled in the Civil Technical School in Biella, a general three-year training programme in which he learned Italian, math, history and geography, drawing, penmanship, French and, in the last year, civic education and business mathematics.[12] After earning his diploma in 1892, Lorenzo embarked on the road taken by most of his contemporaries in Biella, who ended up as apprentices in textile mills as soon as they finished primary school or before they even completed it.[13] Lorenzo probably

[11] F. Ramella, *Terra and telai. Sistemi di parentela e manifattura nel Biellese dell’Ottocento*, Turin, Einaudi, 1984, p. 104.

[12] Lorenzo’s report cards from the first three-year period show that he was an average student, not particularly brilliant nor lacklustre, showing more aptitude and interest in Italian, history and geography and very little interest in maths. At the end of the course, this lack of interest led him to retake the diploma exam in October after receiving an F in the July session.

[13] The tendency to leave school before completing compulsory education was quite common in the 19th century. It remained so common even to the 1950s that city leaders began to grow concerned. Cf. Unione industriale di Biella, *Il fenomeno dell’evasione dell’obbligo post-elementare nel Biellese*, Biella, Unione Industriale Biellese, 1966.


Portrait of Lorenzo Chiorino, aged thirty (circa 1905).

also embarked directly entered the factory, unless perhaps - considering his father’s level of education and economic conditions – he was promised a future in administration as soon as he was old enough, or had acquired enough experience. So, at the end of the decade, Lorenzo took a job at the Antonio Varale tannery in Biella.

After his basic schooling, this first job was probably Lorenzo’s most important and influential experience. Since he was employed in administrative and accounting areas, Lorenzo took advantage of the opportunity to accrue experience and skills in the accounting side of the business, but also to introduce himself to the techniques related to the production process and - we can imagine - to get an idea of the difficulties that he would meet and the improvements that he would have had to make to prepare an overview of the sector, perhaps also to have an idea of some other areas related to operations. But most of all, Lorenzo was interested in understanding the market and profit-making opportunities. Given the relative simplicity of the organizational structure of the factories in those times, it would not have been difficult for an enterprising and determined youth, well-known personally or by name to many employees – we might presume - to observe the production processes and begin to formulate a personal plan, replicating a very widespread approach underlying the genesis of new business. Perhaps Lorenzo was also bold enough to set up agreements with trusted line workers, experts in their field, thus securing the indispensable assistance of a particularly precious and scarce resource, in spite of the presence in Biella of a certain number of tanneries.

The importance of Lorenzo’s apprenticeship at Antonio Varale and the scope of the areas that had to be extensively examined are clear when we consider the demanding programme of studies required for training a “chemical - technical director of a tannery” through a formal course of instruction. Since 1902, the National Institute for the Leather Industry in Turin has offered a two-year course, split between theoretical courses and laboratory practice.[14] The theoretical lessons embraced a broad range of subject matter including organic and inorganic chemistry, tanning tech-

[14] The Institute was founded in 1902 under the name of “Royal Tannery - Italian School and Experimental Station for the Leather and Related Industry”. The decision to establish a school for

nology, and elementary accounting applied to the tanning industry, while the practical section experimented on all the main tanning procedures.[15] It is not surprising that Lorenzo's apprenticeship was relatively long, since he not only learned the technical skills and knowledge of the market, but also the role of the entrepreneur he was preparing for also implied the need to exercise responsibilities related to the risk of own capital and family resources.

In any event, after a period of eight to ten years at the Antonio Varale tannery, Lorenzo decided to start up his own business in 1905 at the age of nearly thirty. In September of that year, Lorenzo also married Flora Machetti, six years his junior.[16] The fact that the two events coincided was significant because it transcended the scope of his individual, personal and professional decisions. As soon as he found the most appropriate path to his personal achievement and destined to form the basis for his future livelihood, Lorenzo felt ready to finally make a change in his

training executives, middle management, technologists and specialized labour which would assist in developing the sector was taken in 1898 by Ettore Andreis on the occasion of the first conference of the Leather Industry and Commerce. The model used as an example was one of the most important European schools with seats in Vienna, Leeds, Freiburg, Lyon and London. Influential in its institution was the initiative of the Italian Leather Industry and Commerce Association of Turin and the financial contribution of tanning and chemical industrials from several Italian provinces, among which prominent individuals such as Achille and Secondo Durio, Ferdinando Bocca (Managing Director of the Unified Italian Tanneries of Turin), Ettore Andreis, Alfredo Fiorio, Alfredo Gilardini, Roberto Lepetit, Guido Martinolo, Carlo Bruno and Alberto Vita. It obtained government recognition in 1905 and in 1907 the school passed under the responsibility of the Ministry of Agriculture, Industry and Commerce.

15 The syllabus was as follows: "general inorganic and organic chemistry"; "analytical qualitative and quantitative chemistry applied to the examination and determination of the value of substances that involve tanning"; "chemical technology of tanning"; "colouring materials"; "applied physics"; "tanning industry business mathematics"; "microscopic technique"; "elementary business and industrial law". The programme of exercises in "practical tanning" included processes of slow, accelerated, and quick tannage; chrome tanning; alum and salt tanning; tanning hides and skins for gloves and other processes for the fur industry. For this purpose, the School was equipped with a certain number of workshops and laboratories specialized in chemistry, microscopy and tanning. As an alternative to the manager training course, the educational offer also included an annual course for line workers, with evening and Sunday classes, aimed at incorporating hands-on techniques with theoretical knowledge of the tanning processes. The lessons dealt with "general information and treatment of the hides and skins in the various states of conservation"; "classification and detailed study of local and foreign hides and skins"; "tanning materials"; "study of the tanning processes and finishing the various types of leathers"; "elements of general chemistry and technology".

16 Flora Machetti was born on 26 January 1883 to Giovanni Battista and Delfina Boggio, in Quittengo, a small hamlet located thirteen kilometres north of Biella, along the Cervo River.

personal and biographical course and start a family. The two areas of his life, professional and personal, thus found an additional reason for intertwining with a deep symbolic and material value. Looking at it from this perspective, we retrospectively see an additional reason for the dedication that the more mature new head of the family poured into his entrepreneurial activity.

### *From the beginnings to F.lli Chiorino, 1906-1916*

In many respects, the first ten years of business of the Chiorino tannery might be considered an “apprenticeship” of Lorenzo in his new role as entrepreneur. In these years, he took constant care in developing the tanning procedures, set up production on a diversified range of products, positioned the company on the market with respect to the competition, learned to evaluate his skills directly with the sources of raw materials, created his own relatively stable client base and began to build a reputation. Over the years, the company rapidly increased its capital base, plant and equipment, volumes of business and number of employees. Certainly, Lorenzo’s rise was facilitated by an excellent economic situation. The sectors served by the tannery were in the throes of expansion, albeit with alternating periods of acceleration and slowdown. The war impressed a strong dynamic to the internal demand for industrial assets and the textile and leather sector felt the repercussions of its direct and indirect impact. The first decade must have been a period of extraordinary intensity. Nonetheless, development of the business did not take a linear, downward course. Quite the contrary, it had to contend with difficulties and restrictions of a varied nature, potentially able to pose serious obstacles to growth, which ranged from financial problems to recruitment to management of the workforce.

In this first decade, in which the company’s ability to self-finance was not sufficient to stay apace with the financial needs of growth, Lorenzo’s family could be relied on to provide the main resources, in multiple forms, necessary for growth. The advantages and limits that family resources could offer Lorenzo represented invaluable experience for him. The partnership with his younger brother, Umberto, and the establish-



Calling cards of the sole proprietorship Lorenzo Chiorino (1906-1910) and the partnership Fratelli Chiorino (1911-1916).

ment of «Fratelli Chiorino» in 1910, initially intended to last fifteen years, ran into an unexpected change of destiny and led to the company’s premature liquidation in 1916, splitting the unified business into two competing companies. For all these reasons, the course of the first decade marked a significant break in the history of the company. The developments that followed took place under the guidance of an entrepreneur who could be said to have reached full maturity in this role.

The Lorenzo Chiorino tannery began operations in May 1906. The first factory, in Via delle Mole, was located along the Vernato cobblestone lane, which meandered from the lower part of the city to the Piazzo. The factory was located on three floors and occupied an old building that had survived a fire and another more recently constructed structure. It was part of a larger complex, fenced in by a boundary wall and included two courtyards, one of which was relatively small, located near the entrance, and another larger courtyard, with a grass lawn. The outdoor spaces, which could be used to hang out the tanned hides and skins, represented a major advantage to the location, as did the existence of a large hydraulic wheel located on a steep rise which was able to generate a large amount of energy. Since the property hosted a dye house, Lorenzo set up an agreement in November 1905 with the leaseholder, Pacifico Trivero, to take over its lease. Based on these agreements, the spaces had to be vacated by the end of June 1906, but Trivero agreed to try to anticipate the date to the end of March. In any event, Lorenzo reserved the right to begin installing and operating his machinery as of April, undertaking to pay a monthly lease to Trivero.[17] The reason for the rush, besides the need to set up the new business as quickly as possible, was due to the fact that Lorenzo began to incur a series of costs for adaptation of the spaces to the tanning business as soon as the agreement was signed with Trivero, consisting in restructuring the space adjacent to the hydraulic wheel, ready-

[17] The amount contracted was 58.35 Lire; added to this the same amount again for use of the hydraulic power. Mr. Trivero vacated the spaces at the end of March 1906. The lease contract with the ownership, signed by Lorenzo on 6 March 1906, set the lease payment at eight hundred lire per year. These amounts were augmented by 5% annual interest on the capital invested by the ownership in several restructuring projects in brickwork and carpentry.

ing the relative power transmission, and putting up three canopies. In completing these works, Lorenzo paid a total amount of 2,400 lire, immediately liquidating a portion in cash (1,400 lire) and undertaking to pay the remainder with two acceptances of five hundred lire each, payable respectively on 31 December 1906 and 31 December 1907.

A gold mine of information and an invaluable "snapshot" of how the spaces were equipped and how production was carried out in 1910, on the eve of founding the company with his brother Umberto, comes to us through the inventory book that Lorenzo kept so diligently.[18] Leafing through the book, we can almost picture the spaces that hosted the business and we can draw interesting bits of information on the equipment and the value of the machinery used. The *drum area*[19] hosted a drum for tanning, a drum for "liming"[20] and one for greasing along with an English-manufactured re-setting out machine for a total value of 4,200 lire, while other, less important equipment consisted of the drums for chrome liquors (for information on how much these values accounted for total assets, see Table 1). Common operating equipment furnished the *dryer room*, fitted out for the «setting out» phase of the hides and skins,[21] and the *lime yard*. More costly and important equipment furnished the *fleshing area*, where - in addition to a large quantity of small operating equipment - there was an American-made machine that represented the most valuable capital good among those listed in the tannery's inventory (valued at 4,600 Lire), with two interchangeable cylinders for fleshing, scudding and setting-out the hides and skins.

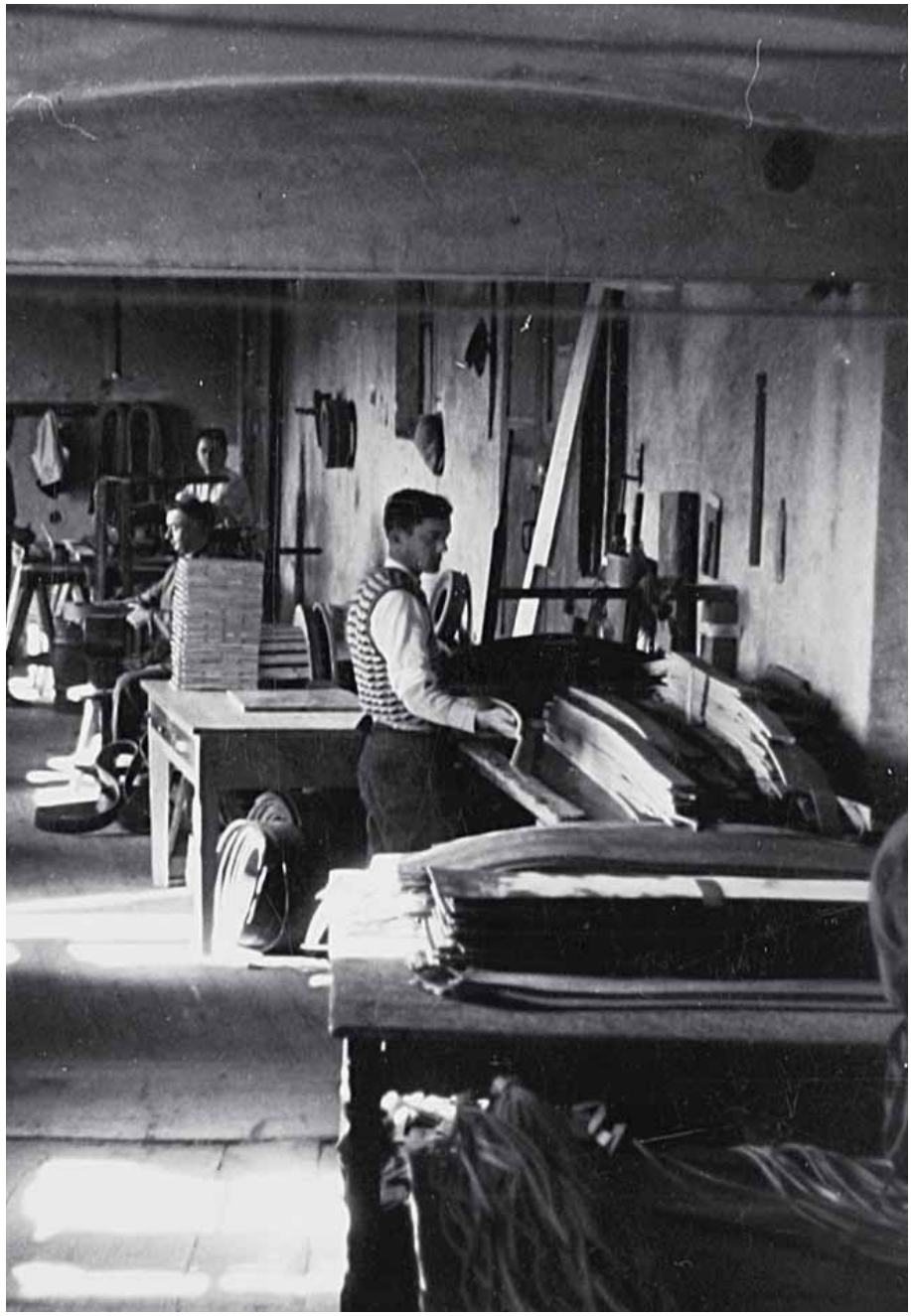
Other industrial machines were located in spaces where the actual

[18] The author is particularly grateful to Umberto Chiorino, a direct descendent of Lorenzo's brother, Umberto, for having allowed him to consult the inventory book.

[19] This space was set up inside a building, sold by Trivero to Lorenzo and located in the Rossetti property. It was posted to the books at 31 December 1910 for a value of 700 lire. The asset would have been completely amortized at the date of expiration of the leasing contract, on 30 June 1915.

[20] The "liming", or "affaiteria", represented the set of processes and preparations used to treat the hides and skins before being sent to the actual tanning process: soaking, liming, depilation, fleshing, splitting, scudding and baiting.

[21] The term «setting out» intends a series of processes with several objectives, performed either manually or by machine. Pressing the crust causes the hide to release the water trapped inside after tanning by exerting pressure on the flesh side by means of a rectangular stone, iron, brass or glass blade.



Inside view of the Saddlery department of Conceria Lorenzo Chiorino, circa 1910.

production process took place. First of all, the *picker department* included two three-phase electrical motors, of 17 and 9 amps, and 13 and 6.5 hp of power, for a total value of 2,000 lire,[22] used to drive a series of machines set up in the space and in adjacent spaces. A picker press (1,500 lire) completed the department.

Table 1. Chiorino accounts at 31 December 1910 (current lire)

| | Assets | | Liabilities |
|---|---|---|---|
| General merchandise | 33,446.43 | Capital | 4,136.21 |
| Tanning merchandise | 3,733.77 | Withholdings to workers | 5.20 |
| Factory machinery and equipment | 25,029.78 | Reserves | 1,108.68 |
| Plant | 4,526.26 | Other creditors | 57,092.82 |
| Office equipment | 412.00 | Bills to pay | 41,780.94 |
| Cash account | 18.77 | | |
| Other receivables | 36,956.84 | | |
| Total | 104,123.85 | Total | 104,123.85 |

*Source:* Chiorino S.p.A., Inventory.

Several machines were still used in the *saddlery* department, dedicated to processing transmission belts for equalizing hides and skins and pulling, rolling and cutting belts and condenser tapes. The office inventory included measuring instruments, namely a dynamometer and a calibre. It was also furnished with an Underwood typewriter, a printing press and a telephone (after 1910). Compared with just two years earlier, i.e. in 1908, when Lorenzo declared in a letter to have a machinery worth twelve thousand lire (which he bought new for 14 thousand lire), the total value of the "factory machinery and equipment" considering only the machinery worth at least 200 lire posted in the accounts, it amounted to more than 17,500 lire, net of amortization already deducted.

[22] The motors were acquired in December 1909 from Società elettrodinamica di Torino, which was the general representative for the Swiss Elektricitäts Gesellschaft Alioth. They were not the first to be installed in the company. We find that the methods of payment, made partly by bills of exchange (1,700 lire) and partly (300 lire) with delivery in Turin another single phase electrical motor with 5 hp of power, that the installation of machines powered by electricity probably dated back to the first system of the company.

These details were worth exploring further because they, more than any other abstract consideration, can shed light on the investments made to improve tannery structures, expansions made to increase production capacity, and Lorenzo’s attitude toward his company, namely the ambitions he had regarding its development. The image projected is of an entrepreneur committed to creating the best conditions for augmenting production, interested in the technology behind the processes and the machinery, and continually making upgrades that were sufficiently focused on the essential to not indulge in installation expenses beyond what was really necessary. In view of the size of the spaces and modern office equipment he purchased, Lorenzo was always more inclined to view his business as an enterprise than as a tradesman’s workshop. Finally, he was concerned in conveying a professional and serious image to the public, his customers and his competition.

In terms of production, a look at the warehouse inventories and the stock in the tanning department reveals that chrome tanning was the primary method used in 1910. The considerable quantities of vegetable extracts and chrome tanning-salts and the presence of several types of tanned hides and skins, intended for specific productions, are evidence of this. The stocks of sumac, chestnut and mimosa, all plants rich in tannins, and fish oil also suggest that the company also employed vegetable tanning and other natural tanning techniques. Significant for the provenance and the dimensions was the variety of hides and skins introduced into the processing cycle and the products that resulted: sides, butts, shoulders, bellies, heads and long and short cuts of oxen and bulls, Tonchino buffalo, «North Western buffalo», «Singapore buffalo», «Agra buffalo», «Rangoon buffalo», «Dhaka buffalo», «Saigon buffalo», «Australia cow», small buffalo, small bulls and of course, scraps and trim, as well as crown hides, were used to produce, depending on the characteristics of the hides – belts, pickers, counter pickers, bump stops in parchment, condenser tapes, soles, lug straps and suspenders, leads and lug straps, etc., showing unequivocal evidence of a largely diversified and flexible production, with a view to satisfying the needs of wide spectrum of customers and needs.

The inventory also sheds some light on the tannery’s customers. Among the biggest debtors, for amounts exceeding 1,100 lire (equal to

3% of the total of the "Other receivables"), and which were able to be identified, at 31 December 1910 we find the Figli of Luigi Zignone (2,734 lire) and the Fratelli Lora (1,835 lire) woolworks in Quarona Sesia, Luigi Zegna of Vallemosso (1,764 lire), the L. Schilling e C. woolworks of Turin (1,682 lire), and the Costanzo Sormano woolworks of Sordevolo (1,098 lire). Together with this direct clientele, a portion of debts was formed by wholesalers specialized in resale of conveyor belts and belting, lug straps, and accessories for textile and industrial machines of all kinds, such as Angelo Bolgheroni of Novara; Achille Faini, Teodoro Koelliker, Tenger and Zollinger, Manifatture Martiny, Massoni and Moroni and many others in Milan. Most of the customers were based in Biella, but on the whole, the customer base was quite outstretched and while a large number of buyers were located in the district bounded by Turin, Varese, Bergamo, Genoa and Milan, in other words, the northwest, more intensely involved in the industrialization process, although the tannery also served customers as far away as Verona, Fano, Cassino, Ancona, Pisa, Rome, Naples, Bari, Gioia del Colle and Cagliari, which placed orders ranging from small to very large. The tannery served a similarly large range of sectors, with a marked prevalence for the textiles sector (woolworks and cottonworks) and mechanics sector (especially machine builders, including agricultural machinery), as well as in industrial joinery, pasta works and paper mills.

In the first four and half years of business, the company increased dramatically and while demand was good, part of its success also owed to the in-depth study and continuous upgrades made by Lorenzo to the technological aspects of the tanning process and the intensive commitment in procuring new clients. As regards the extent of development, Lorenzo informs us that he had opened his business with three workers and just two years later, in April 1908, there were sixteen employees. One indicator of the expansion of the production capacity was use of the basement space for deposit of ancillary products (mainly acids, extracts, salts and starches), which the lease contract in 1906 had reserved to the ownership, the erection of the stockade fencing in the courtyard for hanging up the skins, and an additional area covered over with a canopy. The amount of outstanding bills payable at year-end in favour of another Biella tannery, Magliola e Blotto, were for half-processed hides purchased to supplement the capacity of the

tanning department which was unable to cope with the demand for finished products on its own. Since profits were regularly reinvested into the company, indirect indications of the tannery’s profitability are provided by balance sheet data. At year-end 1906, capital amounted to 3,000 lire and while in 1909, it amounted to 3,610 lire, posted in the year-end 1910 accounts at 4,136 lire, which was increased by a reserve for 1,108 lire. In essence, in a span of four and half years, net equity increased on the whole by 2,244 lire, representing an increase of 75%.

The pressure of the growth, heightened by the sustained pace of demand, encountered difficulties and limits potentially capable of inhibiting it along the way even in these early years , representing a real test of the ability of the management. To begin with, although the wool industry continued to grow, the textile sector underwent a period of contraction between 1908 and 1913, with negative rates of development (-0.4% on average annually). Secondly, starting in 1910, the tanning sector experienced a period of relative stagnation of the business, interrupted only by the war in Libya (1911-12) which was characterized by a significant increase in the volumes of imports and the prices of raw hides and, conversely, by a stability in the prices of the tannage.

Thirdly, the increase in the tanning business progressed apace with the increase in the number of employed workers and this fact complicated the management of relations inside the factory. In this period, industrial relations were like a simmering pot and while steelworkers represented the most advanced component in the organizational and bargaining action, tanning industry workers did not just stand by watching. There were many tanning workers in Turin, where the large Durio, Gilardini, Fiorio and Arnaudon family tanneries were located, and back in 1896, they had demonstrated the unexpected capacity to react against the entrepreneurial and public initiatives that aimed to limit the unions’ freedoms.[23] The industrialists of the sector, on the other hand, had taken an

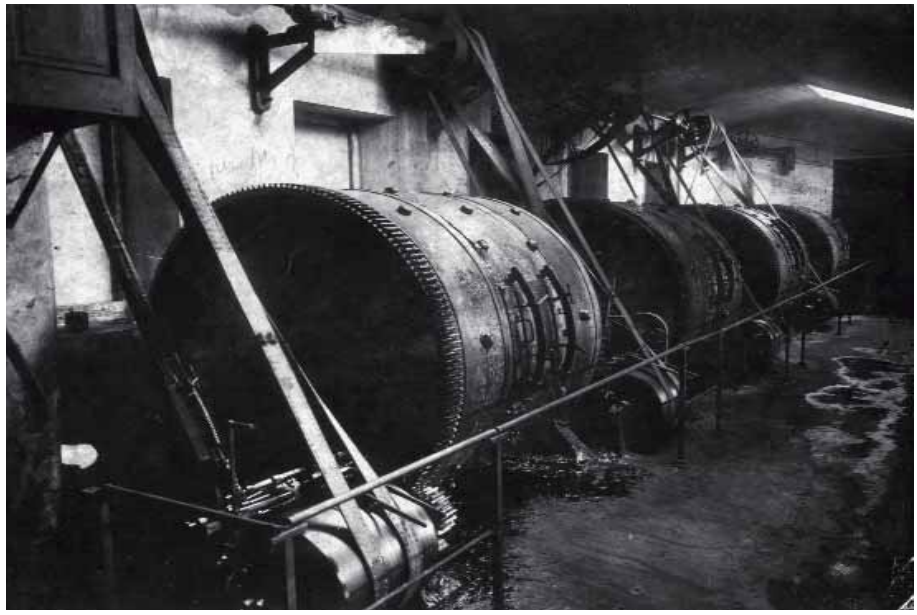
[23] Cf. V. Castronovo, *Storia d’Italia. Le regioni dall’Unità a oggi*, *Piemonte*, Turin, Einaudi, 1976, p. 161. In 1906, the Fratelli Durio, a tannery well-known for its experimentation on quick tannage, employed 200 workers, while Fratelli Fiorio employed 250. Cf. the outline of the businesses members of the «Group VI – Leather» of the Industrial League of Turin supplied in Mario Abrate, *La lotta sindacale nella industrializzazione in Italia, 1906-1926*, Milan, Angeli, Appendix III.

active role in setting up the earliest employer organizations. In 1907, Cesare Fiorio sat on the Board of Directors of the Industrial League of Turin and in Biella - where there was a long-standing union tradition - Pietro Serralunga and Magliola e Blotto numbered among the members of the Industrial League in 1908.

It is no surprise that in March 1908, Lorenzo Chiorino and representatives of other Biella tanneries signed an agreement to work together to counteract the toughest bargaining positions and isolate the most unmanageable members of the work force. The signatories (and most likely the promoters) of the initiative were Pietro Serralunga and Magliola e Blotto, who were joined by the grandchildren of Paolo Magliola and Antonio Varale (of Biella), the Cantono brothers and Luigi Corte (of Andorno).

The most salient points of the agreement provided the refusal to hire labourers without regular working papers or who came from businesses operating in other production sectors, with the sole exception of rural workers in search of their first industrial job. Secondly, the signatories (including foremen and department heads) undertook to not hire "anybody who had been fired from another job for proven reasons of insubordination or for bullying actions against the plant managers and heads or even against other workers" without the prior authorization of the previous employer. The same treatment was envisaged for individuals who had abandoned their place of employment without the requisite eight days prior notice and for "the labourers who had been fired only for demanding an unjustified pay rise and not in keeping with the regular salaries of workers in the same departments". Under the agreement, industrialists submitted to the obligation to collect information and engage in mutual cooperation before hiring, to learn the past reputation and behaviour of the individual labourers.[24] In addition, signatories also

[24] These controls and exchanges of information were an important part of the Industrial League of Turin. According to the bylaws, the available means for protection the industrial interests against strikes and insubordination were lock outs, bans on hiring striking workers, and fines levied against members who infringed on the agreements. The regulation approved in January 1907 prescribed the methods of filling out and circulating the "black list" of strikers. Cf. M. Abrate, *La lotta sindacale*, cit., p. 50. Circulating in the industrial district of Biella were authentic "proscription lists" which aimed to punish the most active members of the unions (cf. V. Castronovo, *Storia dell'industria dall'Ottocento a oggi*, Milan, Mondadori, 1990, p. 129).



1. Hanging up the hides in the courtyard of the Magliola tannery in Biella in the late 19th century (Archives of the Fondazione Sella).
2. Tanning drums at Conceria Umberto Chiorino (circa 1930).

pledged to not grant changes to working hours or other collective conditions without first consulting with the other parties to the agreement and having obtained their consent. Any of the signatories that had not complied with the agreements would be subject to a fine of between 50 to 200 lire.[25] The revenues from the fines were to be allocated to the companies most impaired by strikes and boycotts, to charities or finally, to reward "the worthiest workers".

The agreements were perfectly in line with the objectives and labour union policies drawn up by the Industrial League of Turin, which in those years, under the guidance of Luigi Bonnefon Craponne and Gino Olivetti, focused on the aggregation of the local industrial associations on a national and territorial level, committing the organization not only to the pursuit of union objectives, but also to protection of the category interests against the government decisions as regards social and labour legislation.[26]

To cope with the instability and the impairment that were caused to production by bitterly divergent factory relations and the conduct of personnel reluctant to accept factory regulations, and therefore, to protect a more regular operating performance, Lorenzo attempted to secure the collaboration of trusted personnel to cover several key positions. On 20 April 1908, he signed a contract with Giacomo Colombo with position of "factory foreman" of the "corrieria" department. This department was responsible for the setting out and drying procedures immediately following the tanning process. His responsibilities consisted in supervising the conduct of the personnel inside and outside of the factory, training younger staff members in the operating areas and delegating operating duties. Colombo was also responsible for ensuring proper execution of all the processes of the department and this is why he was asked to pay visits to the tannery in the morning on holidays, to check the drying progress of the hides and skins and to prepare the

[25] A fine of fifty lire was to be levied for hiring personnel without valid working papers, two hundred lire for infractions against the other points of the agreement.

[26] Thanks to the project initiative of Bonnefon, Craponne, and Olivetti, the Piedmont Industrial Federation was founded in 1908, which united under a single umbrella the industrial associations operating in the region, while the Italian Confederation of Industry was established in 1910.

next day’s work. In essence, through an extensive delegation of authority, Colombo was made jointly responsible for a wide range of aspects connected with the production process of the department reporting to him, which ranged from employee training, disciplining untoward behaviour, and guaranteeing minimum standards of production quality, which had to be always in condition to be sold on the market. In exchange, he had a three-year contract which provided a series of financial incentives that aimed to keep the employee at the company in the medium term. The contract included a basic salary of 100 lire per month in the first year, which would have increased to 110 and 120 per month, respectively, in the subsequent two years. In addition and contingent on the business operating well, he would have been paid an extra month’s wages.[27] Similar agreements were taken in 1911 with Vittorio Guarnero for the saddlery department, who would end up staying with the company for sixty years.

These individuals had remarkable technical skills and - precisely by virtue of these - exercised great authority over the other employees. They were individuals who enjoyed the utmost trust of the ownership, with which they tended to identify themselves. They were characteristic of the organizational model of the early process of industrialization. Their power emerged from the importance placed on the “trade” and the versatility of responsibilities that they were able to perform within the production systems, upheld by a relatively inexact and empirical organization, frequently equipped with imperfect machinery or with relatively low levels of automation, which often required maintenance by highly qualified personnel. From many perspectives, their presence was crucial to guaranteeing the stability of the production process in the factory, whether it was a tannery or a mechanical garage, in a small or large business. After identifying and ensuring the loyalty of these individuals, after isolating the most recalcitrant or unionized with the contribution of the other tannery owners, Lorenzo felt fairly reassured in terms of this company’s internal stability to dedicate his time to relaxing the grip that financial constraints placed on growth of the business.

[27] At the end of the three-year term in 1911, the contract was renewed for another six years.

Since the beginning, the tannery needed to rely on the availability of liquid resources to carry on operations and this is why they needed to make use of credit. The same technical characteristics of the production cycle, with relatively long manufacturing times of the products, starting with the raw hides, and the fact that the cost of the raw materials accounted for a large proportion of the final cost of the product exposed the tanning business to the need to have large volumes of working capital, otherwise, the business would have diminished. From the start, a private bank in Biella, named Pellosio e C., provided an amount of ten thousand lire by opening a line of credit in a current account.[28] As collateral to the loan, Lorenzo offered part of the property holdings owned by his father. On 13 December 1905, Angelo had mortgaged the house where he lived in Ponderano, complete with the courtyard, garden, and vineyards, the largest parcel that he held in Rolletta (two and a half acres) and a field in Derbiglia (one and a half acres), for a total value of twelve thousand lire.

Two years later, however, the need for finances had grown apace with the growth of the business. At a certain point, the business was presented with an urgent need for a large quantity of fresh resources. At this point, even before 1908, Lorenzo had already appealed to his family members and involved his younger brother, Umberto, who brought 3,000 lire into the company. It involved a transaction very similar to an actual capital grant, and the amount would be increased over time by adding a percentage of the earnings until it reached a value of 3,730 lire in 1910. However, Umberto also had other resources to contribute. He completed an apprenticeship similar to his brother Lorenzo's, at the Varale tannery, and therefore, could bring his knowledge, skills and new ideas for the benefit of the company. In addition, as a family member, he was also considered a person of complete and utter trust. The solution did not merely take care of pressing financial needs imposed by the growth of the business, but also represented a promising arrangement for the two male members of the family, and fuelled the new business with invaluable

[28] The operation had a three-year term beginning in January 1906. The interest rate applied was one percentage point above the official discount rate, with a minimum of 6%. See the relative deed, including mortgage, held in the district notarial archives of Biella, notary public Secondo Caucino, deed no. 7068, 13 December 1905.

human capital. It was therefore potentially able to lay the bases for a more certain future development.

Another less challenging way to mobilize the resources of the family that Lorenzo used was to solicit savings deposits. So, at 31 December 1910, Umberto was not the only family member who was listed in the company situation under the item “Other creditors”; we also find his brother Giovanni Battista Chiorino (2,466.25 lire) and his sisters Angiolina (2,200 lire) and Caterina Chiorino (558.70 lire).[29]

Still, all these resources were not enough to meet the need for financial resources. This is why in April 1908, Lorenzo went to the Banca Biellese and applied for a loan of twenty thousand lire.[30] In addition to presenting a company started up in a promising way, which significantly expanded in a short period of time, he offered the guarantee jointly with his brother of installed machinery for a market value of twelve thousand lire and additional real estate owned by his father with a value of up to 35,000 lire. It is not clear whether Banca Biellese immediately accepted the application for the loan and where the money came from if the loan had been denied. We know for sure that the application was accepted in July 1910. So, concurrent with the mortgage being attached to Angelo Chiorino’s property for a total value of 28,000 lire and the joint liability of Lorenzo, the bank granted a loan of 25,000 lire.[31]

It was not unusual in the district of Biella for the loan of a new industrial enterprise to be granted through extensive and intensive use of family resources. Indeed, the region expressed a variation of the *self-made* model and while it is true that there was no lack of business owners - such

[29] A part of the personal savings of Lorenzo and Umberto was also tied to the company, which accrued in previous years when the company was formed and were restricted by a private agreement signed in November 1911. These amounted respectively to 1,191 and 731 lire.

[30] Established as an ordinary bank in 1869 on the initiative of Giuseppe Venanzio Sella who was also its first chairman, Banca Biellese was the oldest bank in Biella and one of the banks most used to provide finances to local industry. The other banks established in the early 20th century were the Banca Popolare di Biella, established in 1878 and Banca Gaudenzio Sella e C. (1886), in addition to the Cassa di Risparmio di Biella, a savings and loan dating back to 1856. There was also a branch of the Banca Commerciale Italiana, while very active on the market for commercial discounts and working capital loans were other banks with offices in Milan and Turin, such as the Banca Lombarda di Depositi e Conti Correnti and the Banca Subalpina e di Milano (cf. V. Castronovo, *L’industria laniera in Piemonte*, cit., p. 329, no. 1).

[31] It applied an interest rate of 6% annually.

as combed wool manufacturers - in the district who made significant use of bank loans, they represented an exception rather than the rule. Nearly all of the businesses founded in the second half and at the end of the century - all mainly based on initiatives starting from the bottom - were supported by family wealth and resources. In any event, these names and these amounts, which continued to appear among the "lenders" of the tannery even later, although for mainly smaller amounts, give us an idea of the importance attached by Lorenzo's extended family to his industrial investment and the support that the family was willing to give him. On the other hand, it also shows how important it was to have a developed and flexible credit offer, especially in the initial phases of set up and start up, when family capital was not enough and the profitability of the enterprise, though considerable, was not enough to ensure development based on self-financing.

Lorenzo's decision to set up a company with Umberto was based on the need to increase the growth of the company with trusted tangible and intangible resources. It had reached the end of a "trial" period, limiting itself to adding the official approval and imposing the obligations and protections deriving from legal recognition of a business for all practical purposes already up and running. Set up in November 1910, «Fratelli Chiorino» was a general partnership with capital of six thousand lire, paid by the two brothers in equal measure.[32] The company purpose was "tanning and manufacturing leather for industrial uses". The business was effective starting on 1 January 1911 and had a term of 31 December 1925. Significantly, in addition to the equal contribution to the capital and the resulting equitable rights to the profits and losses, the deed of incorporation specified an exact distinction in the roles of the brothers: Lorenzo was in charge of "administration of the company in general and the tanning processes" and Umberto was in charge of the saddlery department. Outside of these spheres of autonomy, contracts, travel and other business had to be decided by joint

[32] For the sake of comparison, note that the Magliola e Bersano tannery, established in February 1912 and effective as of 1 January 1913, whose object was "tanning hides and skins and manufacture of belts and other articles", thus a competitor to Fratelli Chiorino, started business with share capital of thirty thousand lire.

agreement. Going by the results of the inventories and since company profits were generally capitalized, it seems that the different levels of responsibility were paid different compensation.[33]

Table 2. Fratelli Chiorino, key balance sheet data, 1910-1915

| | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
|---|---|---|---|---|---|---|
| Capital account | 6,000 | 18,000 | 48,000 | 88,000 | 128,000 | 200,000 |
| Reserves | 1,109 | 4,090 | 6,697 | 10,598 | 14,556 | 105,695 |
| Depreciation machinery and equipment | 4,717 | 4,371 | 5,073 | 5,423 | 5,483 | 3,648 |
| Total assets | 104,124 | 117,946 | 143,849 | 202,324 | 240,099 | 433,079 |

The growth of “Fratelli Chiorino” was considerable from every perspective, as shown by the data in Table 2. It is also remarkable that this growth took place in a time of sluggish economy for the sector on the whole. The years after 1910 were characterized, as mentioned, by skyrocketing raw materials costs and less pronounced rises in tanned leather prices. Total assets at the end of 1915 were equal to four times the value in 1910. In terms of investment in fixed capital, in the two years between 1912 and 1913, two new buildings were constructed, erected on a cast iron structure, the first designed to hold a new tanning drum and - under a canopy located on the roof - a machine for “levelling”; the second was designated for installation of a splitting machine, also new. A second drying unit was also set up. In terms of the business, the clientele grew significantly in numbers, distribution across the territory and variety of sectors served, as indicated by the acquisition of supplies for Ilva and Ferriere di Voltri, for industrial woodworkers, food industry, paper mills and traditional chemical products (perfume and soap makers, etc.).

Another aspect of a certain interest is the deepening of the insertion of the company into the half-processed goods trade with local competitors and counterparts that involved, as usual for this sector, according to the

[33] The deed was notarized by public notary Ernesto Ramella of Biella on 27 November 1910. It also indicates the arbitration procedures for solving disputes and provides precise instructions in the case of death of one of the partners.

needs of the work flow and the special treatments required, trade of hides and skins in various stages of the processing cycle: lime, tanned, dyed or finished. The fact of this insertion was nothing new, but in the years leading up to the war, it intensified, as shown by the receivables and payables posted to the accounts with other Biella tanneries of comparable size to Lorenzo Chiorino's, such as Magliola e Blotto and Magliola e Bersano.

The performance of net equity shows the company's considerable ability to generate profits, which were regularly converted into capital. The share capital of the company tripled in 1911 and more than doubled the following year. Even when calculated in constant lire, at the end of 1915, it was approximately thirty times higher than the starting value. The reserves posted an even more pronounced progress and, calculated at constant rates, multiplied by more than 85 fold, even after detracting total depreciation and amortization of around 24 thousand lire only for machinery and equipment. Chiorino's broadly positive trend already before the war, in other words and as mentioned earlier, in a period of economic difficulty for the tanning industry as a whole, was furthered by the wartime economy in 1915, a drive whose effect became much more evident in the size of the company accounts of that year.[34]

Despite the exceptional growth in the early years, in March 1916, the two brothers decided to go their separate ways, winding up the company before the term.[35] The reasons for this decision are lost in history, but to better understand the events it might be useful to explore the reasons leading up to the decision. We can make some plausible guesses. To begin with, remember that Lorenzo's and Umberto's families grew in parallel with the growth of the company. Lorenzo and Flora, who lived in Costa del Vernato 70, just around the corner from the company, had their first child, Fulvio, in 1907. Fulvio soon had a brother, Angelo, born in 1908, and two sisters, Alda and Laura, born in 1910 and 1913. The last child,

[34] The onset of preparations for Italy's entrance into the conflict caused a sudden rise in the demand for leather in the first half of 1915 which was followed by a similarly sudden rise in the price of raw hides and skins, tanning substances and tanned products. The immediate consequence was the revaluation of the warehouse inventories.

[35] The deed, notarized by public notary Ramella on 22 March 1916 and held in As Bi, Court of Biella, company deeds, file. 5421.

Lorenzo Chiorino with his wife Flora and five children. From left, Giannina, Angelo, Laura, Fulvio and Alduccia (circa 1925).

Giannina Romea, was born in 1918. Umberto, who married Maria in May 1905, had two boys, Augusto born in 1906 and Vittore, born in 1909.[36] It is likely that these developments influenced the decision taken by the brothers to go their separate ways, considering the increased needs of each family. It is also plausible that after accruing experience with his brother Lorenzo, Umberto, who was now thirty-eight, had finally developed the personal ambition to assume full responsibility for his own business. On the other hand, the brothers may also have had diverging views on the basic lines and strategies of how to run the company, making it difficult for the brothers to get along in a single company. Continuing forward in this way may have exposed the company to a dangerous weakening of the management function. Whatever the cause or the direct and indirect factors, the good prospects for growth and profits that the wartime economy promised encouraged their decision to separate. The fact remains that following liquidation of Fratelli Chiorino, closure of the company resulted in two new companies competing on the same marketplace and on the same market segments. The decision to dissolve the union of resources and consequent economies of scale, to undertake an increase in costs and face the eventuality of a limitation on the growth, just to avoid the risk of conflicts at the upper levels of management of the company, could not have been simple or painless. It represented another seminal moment of learning in Lorenzo's entrepreneurial experience, which would shape his future approach to and leave a deep sign in the cultural and genetic make up of the company that would be felt and be passed on for generations.

### *Between two wars. Establishing the business between alternating trends*

The war ushered in a period of both enormous intensity and marked instability, at best of deep uncertainty about the evolution of the real and financial markets, a period in which even events ostensibly distant from the

[36] Maria Chiorino, daughter of Gaspare and Angela Chiorino, was born in Ponderano on 4 September 1889. The first-born child of the couple, Augusto, born on 26 January 1906, would go on to study chemistry in view of a future in his father's business. Vittore, who would follow his brother in joining the company, was born on 23 May 1909.

sphere of the company or the sector would end up having significant repercussions on its performance. It was the intervention of the government, which would become increasingly invasive starting at that time and in the years between the two wars. . The State intervened by imposing direct measures to regulate production and by setting economic policy measures regarding customs tariffs and decisions regarding currency (especially the revaluation of the lira in 1927 and Italy joining the gold bloc in 1933), with the consequences that these had on the currency and business plan in the thirties (quota restrictions and licensing for imports, clearing agreements). It was also the result of the break in the international monetary, financial and commercial system which had been sustaining the prodigious development of the world economy up to 1914, a break that generated repercussions felt even by small businesses, only if they were importers of raw materials and half-processed goods or exporters on the foreign markets. These could also only blame the impact of the broad oscillations of the international prices of many agricultural and industrial commodities or the effects of the partial narrowing of the market spaces caused by raising commercial barriers subject to sudden changes, in they same way that they could not avoid feeling the heavy consequences of the exchange rates of the lira widely (and often violently) fluctuating for most of the twenties and unsettled again, in the thirties, by the devaluation of the British pound and the American dollar.

Starting over alone in 1917 at the age of forty, and as such in the prime of his maturity and with a wealth of experience accrued in the phases of start up and establishment of the company, Lorenzo felt more confident in facing the challenges posed in the interwar years by the alternation of periods of relative prosperity with periods of dramatic difficulties. The impression drawn from company events is that, in coping with the most difficult economic circumstances, Lorenzo honed or in any event, found a confirmation of a management philosophy which in previous years he had followed perhaps more for prudent intuition than for cogent need.

After signing the deed of dissolution of Fratelli Chiorino in March 1916, while continuing to supervise the tanning business – which was liquidated as of 1 January 1917 - Lorenzo dedicated his efforts to preparing for organization of the new production plant, which would have begun operations on the same date in the form of a sole proprietorship under the name

"Lorenzo Chiorino".[37] Firstly, he secured the cooperation of his older brother, Giovanni Battista, whom he hired as a trusted assistant with a power of attorney to make all important decisions for the company.[38] Along with Giovanni Battista, he retained the members of the specialized staff with whom he had established the most rewarding working relationships. As regards the technical and production aspects, while he bought out part of the machinery from the company in liquidation, he immediately expressed the desire to use the new business as an opportunity to make a jump in quality. He upgraded part of the machinery, acquiring in April 1916 two new electrical motors produced by Tecnomasio Italiano Brown Boveri, having powers of 25 and 20 hp, respectively. Only a month later, in May, he purchased the land on which he was going to install the tannery. The property was located in Biella in the district of Sant'Agata o Pozzoglio, where the company offices are still located today. It was constituted by 4.3 acres of land and included a five-story, seventeen-room building that Lorenzo purchased from Giuseppe Florio for a price of sixty thousand lire.[39]

This step represented the biggest difference compared with the road taken on the first venture and clearly demonstrated how much success the company had achieved in the first decade of business. Another indication of this success lies in the fact that the company liquidation in 1917 yielded Lorenzo a capital amount of 157 thousand lire. The wartime economic period was extremely lucrative and the entire tanning industry benefited from it, earning large revenues due to the enormous increase in business rather than increases in profits.[40] Concerned about ensuring an adequate

[37] Establishment of the new company dates back to 10 December 1916. Based on the agreements reached at the start of 1916, Umberto continued the business on his own in the spaces already existing.

[38] Chiorino records, appended to the letter from Lorenzo Chiorino to the Biella branch of Credito Italiano, on 17 March 1926. The general power of attorney was notarized by Pericle Germano on 1 March 1917. In 1919, another employee joined the company, Giuseppe Garella, who would develop into an invaluable member of the staff and would stay with the company for sixty years, directly assisting Lorenzo in all aspects of daily management. He was the only non-family member to obtain a general power of attorney (1942). Born in 1905, like Lorenzo, he attended technical school. He was also a contemporary of Lorenzo's children and was linked to the second generation of Chiorino by relationships of trust and friendship. His son, Cesare Garella, entered the Chiorino business midway through the 1960s and also had a long-standing career with positions of responsibility.

[39] Cf. As Bi, Land Registry, notarized by Ernesto Ramella, 9 May 1916.

[40] Cf. Chamber of Commerce and Industry of Genoa, *Il commercio delle pelli e l'industria del cuoio durante la guerra*, Genoa, Società Tipo-litografica Ligure E. Oliveri & C., 1917, p. 20.

supply of boots for the armed forces, the government interceded in production plans, thus playing an important role. In the fall of 1914, the Italian government decreed it to be illegal to export hides and skins of any sort and in 1915, price controls were established on tanned hides. At the same time, introduction of an assignment system through weekly public auctions of raw hides from butchers at the front lines had made it possible for tanneries to operate in ample supply conditions of raw materials and cut out the wholesale merchants, preventing profiteering and other forms of speculation. By virtue of these special circumstances, the end of the first year of operation in 1917 marked a capital amount which rose to 470 thousand lire, which at the end of the war was augmented by reserves for another 153 thousand lire.

In 1919, however, the first signs of the hardship that the post-war period would bring were beginning to appear. The Italian lira, left free from fluctuations by the sudden elimination of the measures of international cooperation that had allowed it to maintain a façade of relative stability throughout the war suffered a rapid devaluation, where the exchange rate against the British pound plummeted from 30 lire in January 1919 to more than 50 lire in December of the same year to 100 lire in December 1920. The loss of international purchasing power by the lira considerably raised the cost of hides and skins in a juncture when the great pressure exerted by world demand for raw materials acted independently in pushing their value higher. Countering this, there was a concurrent decrease in the prices of industrial products in leather, with the result that operations in 1919 accumulated a total loss of 165 thousand lire (after deducting depreciation and amortization for 74 thousand lire) (see Table 3). In the subsequent two years, while the world economy was experiencing a major contraction, the difficulties intensified and extended to the entire sector, which was struck by numerous staff cutbacks, salary reductions and the crisis of the great tanneries. In Turin alone, 2,200 workers of a total of 4,058 lost their jobs, while at the end of 1921, the Piedmont tanneries were running an average of just three days a week.[41] In 1922, pursuant to the great operating loss experienced in 1921 in the shoe department, the Gilardini tannery of Turin

[41] Cf. *Riduzione delle mercedi in Piemonte*, in «La Conceria», 15 July 1921, reported in L. Berardo, *L'afrore del tannino*, cit., p. 165.

was also plunged into crisis caused by the bankruptcy of many wholesalers and retailers and by the enormous product stocks pouring onto the market; it had to break down its in-house maintenance workshops and sell off the worst hit departments. Its capital was reduced to a minimum and ended up being taken over and controlled by a new group of industrial tanneries.[42]

After absorbing the first blows, the Lorenzo Chiorino tannery managed to limit the damage in 1920 by reducing its capital and drawing on reserves for a total decrease in capital of 144 thousand lire. This plan allowed the company to maintain net income of 21 thousand lire and set aside more than 80 thousand lire for depreciation of plant and machinery. The next year, despite the pervasiveness of the great difficulties for the sector, company performance improved further: gross income rose to nearly 400 thousand lire, net income rose slightly, the company was able to deduct more in depreciation, and the capital could be partly reconstituted. Further confirmation that the company had already experienced the worst was the fact that in the spring of 1921, Lorenzo was negotiating with a British company to purchase new machinery for manufacturing pickers.[43]

However, the tannery's business and accounts resumed the positive trends of performance only later in 1922, concurrent with the resumption of the national and international growth cycle. The local economy also began to show signs of new life, guided by the wool sector which made investments of a certain entity between 1922 and 1926 in expanding production capacity and embracing the pursuit of international competition on the domestic and foreign markets,[44] inevitably fuelling demand for technical hide manufacture.

In the twenties, good margins for quantity and quality development of the Italian tanning industry were still available to astute entrepreneurs, and in a certain measure, the industry knew how to take advantage of it. Despite the fact that the national demand for tanned skins and hides continued to be satisfied largely by foreign suppliers, imports decreased, at

[42] Its new owners were the Boglione brothers, who were tanners in Bra. Cf. *ibid*., p. 166.

[43] The company in question was A. Kinghorn & Co. of Todmorden, which had already supplied equipment to the Pietro Serralunga tannery in Biella.

[44] Between 1918 and 1925, mechanical looms increased from 17,000 to 20,500; spindles for carded material increased from 520 thousand to 600 thousand; spindles for combed material increased from 435 to 500 thousand. Cf. T. Gamaccio, *L'industria laniera fra espansionismo e grande crisi. Imprenditori, sindacato fascista e operai nel Biellese (1926-1933)*, Vercelli, Istituto per la storia della resistenza e della società contemporanea «Cino Moscatelli», 1990, n 48, p. 13.


Advertising illustration of loom picker production in the mid 1920s. The products are advertised in four languages.

least for cattle hides, until the middle of the decade and began to swing back up when the lira regained lost value, which made foreign purchases more competitive. For certain types of product, however, national production could not meet demand or was considered inferior in quality to the foreign products, and this justified the continuously high amounts of imported cattle hides tanned with mineral or mixed methods and imports of belts (vegetable and chrome tanned) and industrial-grade products even in the early twenties, when the lira tended to be undervalued.[45]

Profits and the net equity situation of the Lorenzo Chiorino tannery were particularly indicative of the state of health of the company and its profitability in the first part of the decade (see Table 3). In 1922, profits were only slightly lower than the values recorded in 1916-1918 and in the three years from 1923 to 1925, they exceeded these values. Net equity quickly increased from 737 thousand lire in 1922 to 1,367 thousand lire in 1925. The year 1926 was less brilliant than previous years perhaps, but certainly still positive, as it ended with an additional small increase in equity.

Table 3. Lorenzo Chiorino tannery, typical operating figures, 1918-1929 (current values).

| | Gross profit | Depreciation and amortization | Net income | Capital | Reserves |
|---|---|---|---|---|---|
| 1918 | 348,962[a] | 72,352[a] | 175,622[a] | 469,674 | 152,938 |
| 1919 | 7,959 | 73,622 | -165,349 | 469,674 | 152,938 |
| 1920 | 180,328 | 80,461 | 21,224 | 388,486 | 90,000 |
| 1921 | 399,134 | 140,313 | 23,370 | 411,856 | 90,000 |
| 1922 | 543,252 | 80,282 | 235,499 | 411,856 | 325,499 |
| 1923 | 577,730 | 175,007 | 109,752 | 411,856 | 435,251 |
| 1924 | 579,972 | 148,766 | 152,893 | 450,000 | 550,000 |
| 1925 | 758,330 | 21,341 | 367,007 | 1,100,000 | 267,007 |
| 1926 | 504,807 | 12,798 | 17,601 | 1,200,000 | 184,608 |
| 1927 | 327,088 | 0 | -140,144 | 1,200,000 | 44,464 |
| 1928 | 816,316 | 26,235 | 413,383 | 1,350,000 | 390,795 |
| 1929 | 566,898 | 44,416 | 80,000 | 1,400,000 | 390,795 |

*Note: a. cumulative data 1917-1918*

[45] Total imports of tanned products without hair amounted to more than 2,800,000 kilograms in 1922, was reduced to 2,400,000 kilos in 1926 and returned in 1929 to approximately 3,200,000 kilos. Imports of hairless vegetable cattle hides also decreased by 40% between 1922 and 1925 (from 500,000 kilos to just under 300,000) to then increase to more than 600,000 kg in 1929; cattle hides tanned with mineral or mixed methods - by far the largest item of all hairless tanned products object of import - which increased by 9.5% in the three years from 1922-1924 (from 1,250,000 kilos to 1,370,000 kilo) to be reduced by 11% in the period from 1925 to 1926 and dates back to 1928 to more than 1,750,000 kilos. Cf. «La Conceria», 31 March 1935.

This positive performance experienced a sudden stop in 1927. The unexpected revaluation of the national currency translated into an abrupt drop in the value of the skins in processing and caused the year to end with a loss of 140 thousand lire, without leaving any margin for the usual depreciation charges. A large part of the raw materials, winter hair buffalo hide from India, had been purchased at an exchange rate of 120 lire per British pound; in just a few months’ time, the British currency was being traded at 90 lire. The negative repercussions to the company caused by the devaluation of the warehouse inventories were aggravated by the bankruptcy of several debtors. The deflation, triggered by the stabilization and reinforced by salary cuts and cuts in spending, had considerably depressed production in the sectors involved in export and large part of the light industry, causing slow downs in the production activity, unemployment and business failure. These were troubled times for the local economy. The wool and cotton textile sectors were affected by the crisis; after this time, wool manufacturers, which were squeezed out of the Eastern European and Balkans markets by the loss of competitiveness caused by the new value of the lira, were only able to redirect their flows of exports toward alternative and more distant markets, that had lower purchasing power and were therefore less profitable.

The seriousness of the situation created in the company accounts this time around caused Lorenzo to do more than cover the losses using reserves. In May 1927, he applied to the Cassa di Risparmio di Biella for a loan of three hundred thousand lire. With a term of ten years, the loan was guaranteed by a mortgage on the company property.[46] This was an amount high enough to leave a certain margin of security against any future negative developments and enabled additional room to manoeuvre.

The wording of the loan contract provides us with some insight into how the production department was formed at that time. The area where the factory was located was slightly expanded pursuant to the 1924 acquisition of a neighbouring property to the east, adding on 0.38 acre, before a

[46] Cf. As Bi, Land Registry, Deeds, vol. 628, n. 145, notarized by Pericle Germano on 3 May 1927. The loan was regulated by an interest rate of the official discount rate (which was 8.5% when the loan was taken out) plus 1.5 percentage points and included a reduction in the exposure in the capital of 10% annually, until settlement by 31 December 1937.

series of acquisitions that, as we will see, multiplied in the second half of the 1930s.[47] The total usable land surface measured just over 14,600 m2, of which 2,690 m2 was occupied by buildings, 2,680 m2 by yards and appurtenances, and 8,910 m2 of free space, plus a small outstanding portion outside the boundary wall. Inside, in addition to the three depots for bicycles, dry and finished hides and skins, there was a room for packaging the products and a rustic building including the studio and a mechanical workshop, and separate buildings devoted to smoothing, the lime yard, the well and pumping system, tanks, hanging up the hides, the tanning department and its machinery, and the picker department. Two other buildings played host to custodian's and factory foreman's residences.[48]

The two-years from 1928-1929 was still a period of prosperity, the last before the reversal in the trends caused by the international economic crisis. In 1928, sales (see Table 4) amounted to 3,671 thousand lire and profits reached their highest peak of the decade, permitting an increase on the order of 40% of capital resources. This was also the year when the price of the raw cattle hides and skins touched the upper limits in all the main markets, from Milan to Paris, London and Chicago.[49] In 1929, the good performance continued while sales essentially held steady (losing just 7.5%), but with net profits reduced by more than 80%, in large measure due to purchases of raw materials at high prices in the context of a rapidly declining market.

On the eve of the international crisis in Europe, the Italian tanning sector was already showing, for its own reasons, signs of an uncertain future. Starting in 1929, the sector magazine, house organ of the National Fascist Federation of the Tanning Industry, began to relentlessly publish signals of concern. The European market of raw hides and skins was heav-

47 The property, purchased for 16,500 lire from the Masserano heirs, was a piece of land previously used as vineyards. Cf. As Bi, Land Registry, Deeds, vol. 567, no. 136, notarized by Pericle Germano, 31 December 1924.

48 For the sake of brief comparison, in 1925, the Varale tannery – which once employed 200 workers - occupied a 15,000 m2 surface and another 20,000 recently purchased to cover production increases.

49 Cf. the data and graphics cited in «La Conceria», 31 December 1931.

Conceria Lorenzo Chiorino in S. Agata. Inner courtyard and view of the factory (1924).

ily affected by the German market, which was its biggest importer. In Italy, imports were much higher in the three years from 1927 to 1929, but the increase was especially due to higher volumes of inventories rather than boosted production. What's more, in 1929, national exports dropped significantly with respect to 1928 and the prices of raw materials and tanned products only decreased after the peak hit at the beginning of 1928. Of the materials used as substitutes, natural rubber, favoured by a decrease in prices, most contributed to the erosion of market shares. What's more, the high distribution of the sector made tanning a buyer's market, which enjoyed an even stronger negotiating power and proved to be better able to create forms of connection and international solidarity. Therefore, the Federation suggested to leather producers to enhance their cooperation by constituting a stable union, in other words, a cartel, in order to better coordinate production, limit excess capacity, and more conveniently organize product sales.[50] An indication of this organization was the Sales Office for by-products of tanning, created in Genoa in 1928 in order to provide an aid to companies in difficulty by centralizing operations. Even allowing that an agreement between manufacturers could represent an effective remedy, it was certainly not an easy objective to achieve, considering the enormous variety of production: it is symptomatic that the first meetings of "chrome tanners" held for this purpose in December 1929 resolved to proceed by further segmenting the sector by product subcategory.

Furthermore, in the second half of the year 1929, sector performance indicators, calculated on a sample of companies and calibrated to May 1928 levels after a record posted in April, were stabilized at levels equal to or lesser than the starting levels. In this uncertain framework and beginning with the first half of 1930, the widespread reduction in industrial activity caused by the crisis, the increase in unemployment, reduced purchasing power of the population, and consequently of the consumption, had very acute effects on the sector, which reacted by dramatically decreasing production and making drastic cuts to reduce the price of tanned products to adjust them to that of raw hides. To under-

[50] Cf. «La Conceria», 30 October and 29 December 1929.

stand how deep these cuts must have been, just take a quick look at the trajectory of the trends. At the abattoir of Milan, the price of ox hides up to 40 kg, which had reached nearly 8.50 lire per kilo in January 1928 and which fluctuated between 5.00 and 5.75 lire between May 1929 and October 1930, fell to 1.80 lire per kilo in May 1932. Calf hides underwent even more accentuated changes and essentially similar trends on the markets of Chicago, New York and Paris.[51] Based on employment numbers, the lowest point in the crisis was touched in July 1932 and the signs of an incontrovertible recovery appeared beginning in the fall of 1934. In the year 1935, Italy was undergoing preparation to enter the war in Ethiopia, which brought with it a renewed cycle of growth that definitively ended the chapter of crisis.

Table 4. Lorenzo Chiorino tannery, sales turnover 1928-1943 (current lire)

| | Current lire | Lire 1938 |
|---|---|---|
| 1928 | 3,671,163 | 3,645,168 |
| 1929 | 3,397,045 | 3,319,909 |
| 1930 | 2,653,504 | 2,678,148 |
| 1931 | 2,146,149 | 2,397,664 |
| 1932 | 1,891,853 | 2,170,463 |
| 1933 | 2,226,994 | 2,715,496 |
| 1934 | 2,113,810 | 2,717,756 |
| 1935 | 3,425,109 | 4,342,067 |
| 1936 | 3,284,591 | 3,871,507 |
| 1937 | 5,919,905 | 6,374,493 |
| 1938 | 5,564,563 | 5,564,563 |
| 1939 | 7,448,904 | 7,133,815 |
| 1940 | 13,239,504 | 10,865,041 |
| 1941 | 13,672,412 | 9,697,173 |
| 1942 | 12,394,309 | 7,605,599 |
| 1943 | 12,397,417 | 4,536,327 |

The performance of the company in the early thirties faithfully replicated this time period. Sales (see Table 4) gradually contracted until reaching their lowest level in 1932, equivalent to half of sales revenues of 1928.

[51] *Ibid*., August - September 1932.

Slightly higher in 1933 and 1934 (the year when - as Lorenzo noted - the slight rise in sales was mainly due to the 10% decrease experienced in April by the prices of the products); in 1935, these returned to levels comparable to those in 1929 and from 1937 onward, experienced a consistent and prolonged drive. In parallel to this trajectory, the company posted losses of a growing size in the three-years from 1930 to 1932, marking a small profit in 1933 and ending the year 1934 at breakeven. In 1935, the business began to generate appreciable resources. Net equity gives evidence of these movements, posting negative changes between 1930 and 1932, a slight increase in 1933 and a more accentuated recovery in 1935, which transformed into outright jumps starting in 1937 (see Table A1 in the Appendix).

More interesting and complete with indications of the observance of the performance as emerges from the key sales and profit and loss data is contained in several details of the decisions on how to form the financial sheets in the years of crisis and in following Lorenzo's steps in the most sensitive period. The first consideration concerns the consistency and tenacious perseverance with which Lorenzo continued to make investments and charge for depreciation. Even in the leanest years, such as 1932, Lorenzo never neglected to set aside internal resources to acquire new "more advanced machinery" with the declared objective, as he wrote to the creditor banks while illustrating the corporate financial statements, to have the "ability to achieve a reduction in costs by using the best technical equipment."[52] These investments continued into 1933, while in 1934, the year when business increased but profits remained the same, Lorenzo was in negotiations with the English Sandholme Iron Co. of Todmorden to acquire picker machines earmarked for the restructuring project already in progress in that specific company division.[53] At the same time, Lorenzo did not neglect the efforts to improve the building structures and systems, for example, by deepening the artesian well 1934 and completing other minor construction projects.

[52] Chiorino records, Lorenzo to the Biella branch of Credito Italiano, 21 September 1933.

[53] Chiorino records, Sandholme Iron Co. to Lorenzo, 30 April 1934 and relevant reply, 11 May 1934.

Splitting or levelling the hides done at Conceria Chiorino with the help of an American-made Turner machine (circa 1930).

A second consideration involves his assiduous commitment to charging for depreciation, which, aside for parentheses in 1927 and again in 1932, never let up, not even in the years of crisis. Lorenzo allocated for high values of depreciation in 1930 and 1933, while in 1931 and 1934, the smaller amount set aside was still higher than the corresponding amounts reserved on average between 1925 and 1929. Frequently, prudence caused Lorenzo to err on the side of excessive generosity in setting aside resources for depreciation, since this was done by reducing otherwise much higher profits. This was what happened in 1933 when, as Lorenzo wrote to creditors, rather than limit himself to charging depreciation of about 80 thousand lire and bolstering the capital with profits of 130 thousand lire, Lorenzo used virtually all the "gross profits" of 209 thousand lire to reduce the value of several asset items. He continued on this path in the following financial year. The balance sheet item "depreciation" took in several accounting transactions, including actual depreciation and amortization of fixed capital investments, a supplemental amount for wear on the systems and machinery, and write offs of non-performing loans and financial assets whose value deviated from the nominal or book value. In the financial year 1933 for example, the Lorenzo Chiorino tannery allocated depreciation for machinery and equipment, industrial buildings, for the artesian well, for the new picker department in the factory in Aragni, the family mausoleum, office fixtures and furnishings, and the plant for the production of chrome tanning-salt and *in addition*, also for stocks in the Autostrada Torino-Milano and Banca Popolare di Novara. The following year allowances appeared for 33,800 lire of loans posted to the item "Other debtors" and later, varying amounts were charged for amortization to take into account the negative changes in the value of warehouse inventories.

This prudent and severe discipline reduced the amounts of the financial statements and in certain respects, was a reflection of Lorenzo's integrity in doing business and his iron-clad determination to keep the good of the business foremost, while also made a contribution to reinforcing the reputation that the tannery enjoyed on the markets. The exceptional standing the company had as a debtor was evidenced by the fact that in the darkest hours of the depression, in October 1932,

Lorenzo still managed to obtain a loan of 50 thousand lire from the local branch of Credito Italiano, renewable, against issue of a financial promissory note. The loan was still on the books in June 1934. The loan was emblematic especially when you consider the difficulties experienced by the banking and financial system, threatened by increases in bad debts, withdrawal of savings deposits, and in the worst case scenario, by bankruptcy. The system was intent on seizing opportunities to convert its capitalized portfolio into cash and recover liquidities. The Banca Popolare di Novara asked Lorenzo in 1931 for partial collection of the overdraft in the current account and, in 1933, repeatedly refused to grant him a documentary credit in favour of Dutch and Indian suppliers, at least until he had returned inside the boundaries of the line of credit agreed upon. In this case, the line of credit and Lorenzo’s reputation were not being questioned but it related to implementation of bank policies monitoring the most trusted clientele; it also demonstrates the fact that the bank was willing to accept the commercial bills that he had in his portfolio. Not only was Lorenzo viewed as a good debtor, but also as a businessman capable of evaluating third-party credit.

The constant attention to upgrading machinery and systems, the courage to invest to reduce costs, the caution shown in managing resources generated internally, his resolve – bordering on wilfulness - in pursuing the capital and financial health of the company above personal wealth, his great moral and material dedication, a decided perspicacious intuition, and a good reputation are all ingredients in the success with which Lorenzo Chiorino prevailed over the crisis of the thirties, lending the impression of an ability to succeed with less effort than in prior critical circumstances.

These characteristics should be viewed alongside a certain vigilant supervision of production costs, which the crisis certainly accentuated. This is suggested by the analytical calculations of the costs incurred to produce diverse batches of pickers in execution of many orders, carefully collected and updated between 1927 and 1937, but with a clear prevalence in 1930-1933. The typical calculation was structured with a detailed indication of:

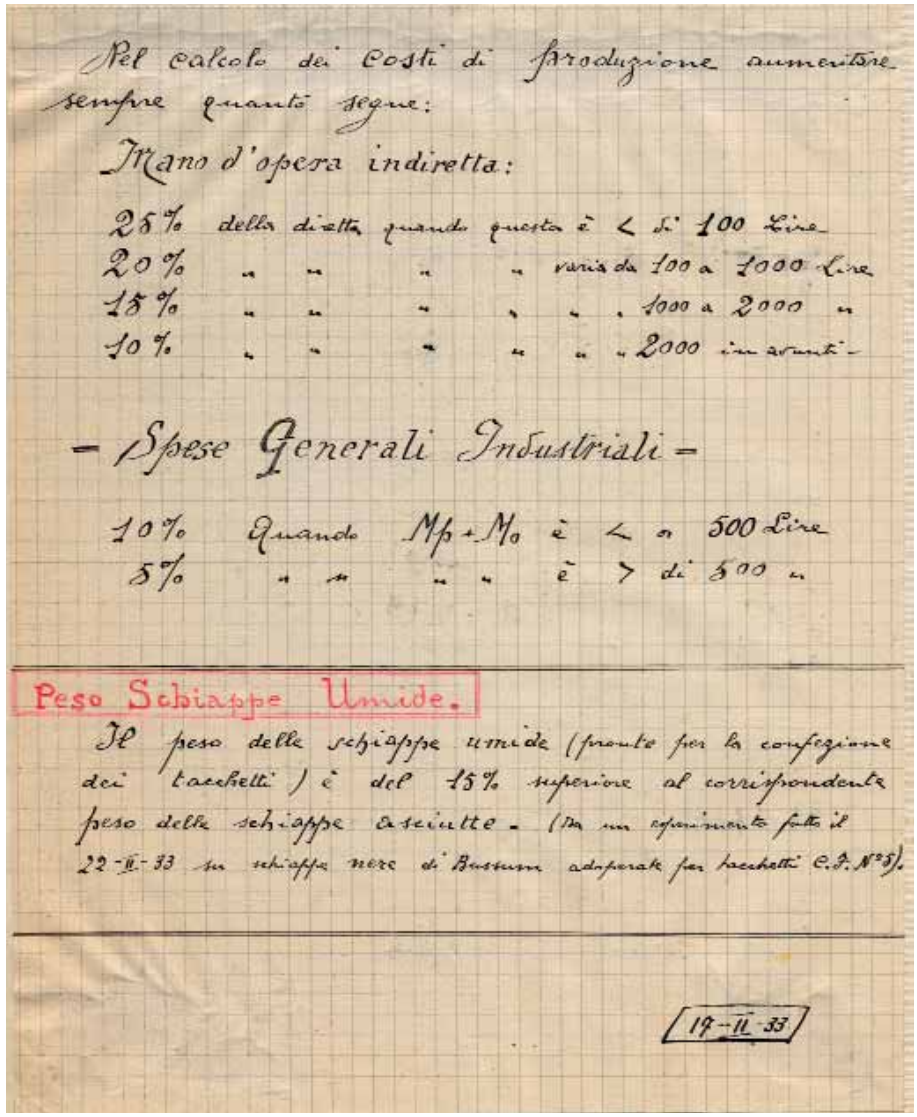
- the types and quantities of the materials entering processing and their unit cost at the source, whether these were hides, nails or oil;

- the hourly and total cost of the labour employed according to the skill levels involved;
- the value of production trim;
- the interest rate applied to the working capital used throughout the entire manufacturing process, starting with the date of purchase of the raw materials (hides and skins) used;
- the quantities of final product.

Some general criteria dictated the methods of calculating any additional costs deriving from a partial quota of the general expenses and use of indirect labour. These costs were charge in inverse proportion to the size of the values involved: for example, as indirect labour costs grew, the percentage charged in the cost of total production decreased. Other general indications reminded to keep in consideration the differences between the weight of the wet hides, ready for converting into pickers, and the weight of dry hides after processing was completed. Accompanying the collection was a list of the series of steps (19 in all for the pickers destined to the fixed body looms) making up the process.

It is difficult to establish why these calculations and observations were made. It is likely that rather than aim at achieving actual operating cost controls and defining areas of intervention for limiting them, there had to be a *correct* definition of the sale price of the finished product, namely, the price that could represent an acceptable point of balance between company profits and market values. Secondly, the systematic list was meant to be a guide and reference point to evaluate the determination of price shifts in relation to changes in the quality of the hides used. As it was, these bore out an accurate supervision that certainly was not detached from the ability to reconcile maintenance of the commercial success with the survival needs of the company, including in the most difficult economic periods.

There is also mention of how the company accounts and the business in the sector regained serenity initially in 1934 and crystallised with a significant acceleration in 1935. As in the post-World War I period, the government began to take measures to provide initial and more important stimuli to bring a change to the market conditions. The quota restrictions on imports of raw and tanned hides and straps, belts and other leather items



Nel calcolo dei costi di produzione aumentare sempre quanto segue:

Mano d'opera indiretta:

25% della diretta quando questa è < di 100 Lire
20% " " " " varia da 100 a 1000 Lire
15% " " " " " 1000 a 2000 "
10% " " " " " 2000 in avanti -

- Spese Generali Industriali -

10% Quando Mp + Mo è < o 500 Lire
5% " " " " è > di 500 "

Peso Schiappe Umide.

Il peso delle schiappe umide (pronte per la confezione dei tacchetti) è del 15% superiore al corrispondente peso delle schiappe asciutte - (Da un esperimento fatto il 22-II-33 su schiappe nere di Bustum adoperate per tacchetti C.F. N°5).

17-II-33

Complete breakdown of the production costs (1933).

set in the early months of the year[54] opened up prospects of an increase in the value of production and an increase in processing, immediately stimulating "effervescence" in the sector.[55] This was bolstered by the preparations for the war in Africa (1935-36), which subjected national production to immense pressure to satisfy the volumes of provisions needed by the military administration, which were allocated a large part of the domestic and imported raw materials, half-processed products and tanning "ingredients". After this, public expenditure programmes for rearmament helped keep alive the sector and the rest of the national economy. The steady increase in the business in the second half of the thirties was focused on a change in the situation of industry, increasingly more isolated from the international context and oppressed by political pressure and the rise of the administrative restrictions imposed by the autarkic economy on normal ability to organize and regiment itself progressively in a bureaucratic structure in which production depended largely on decisive assignments made by the central category body.

For the Lorenzo Chiorino tannery, the years from 1935 through 1940 were golden years. Revenues made three successive jumps, increasing from 3.3 million lire to 5.9 million in 1937, then to 7.4 million in 1939 and finally to more than 13.6 million in 1940 (see Table 4). This lightning-fast development was paralleled by the growth in net equity, which was particularly accentuated starting in 1937. Capital increased from 1.35 to 2 million lire and then to 3 million lire in 1940.

[54] Commencing on 19 February 1935, imports of hides and skins were subject to the customs certifications, which allowed a quarterly quota of 30% of the amounts imported in the corresponding quarter in 1934 (excluded from this treatment were imports from countries with which Italy had clearing agreements or other accords). The effect of the measure - which involved a vast array of goods in addition to hides and skins, including tanning materials and machinery for the tanning industry - was a significant reduction in the incoming flows: the overall total of raw hairless hide and skin entering the Kingdom decreased from 512,000 quintals in 1934, to 445,000 quintals in 1935 and 188,000 quintals in 1936. In the period from 1929 to 1936, the main foreign market supplying raw cattle hides was Argentina, followed at a distance by India, South Africa and Australia. Although there were quotas imposed, raw hides were not subject to excise taxes. The conditions set for importing tanned hides were more restrictive, for which the quota was established at 25%, reduced to 10% in April 1936. These hides were subject to differentiated excise taxes that chiefly protected national producers of calfskins, kip, and other small ox and horse hides, undyed or black-dyed, leaving producers that treated ox-hide and cowhide using chrome tanning method and leather shoe soles more exposed to foreign competition.

[55] Chiorino records, letter from Lorenzo to the Biella branch of the bank, 27 February 1935.

Even greater was the increase in the reserves – completely exhausted in the two-year period from 1933 to 1934 - which were quickly reconstituted. Total reserves amounted to 100 thousand lire in 1935, 900 thousand lire in 1939, and 3 million lire by the end of the financial year 1942.[56] Also quite large was the allowance for depreciation, which held a priority standing in the first three years of renewed prosperity. On the whole, in the six years between 1935 and 1940, internal net equity resources were destined to increase by over 4,5 million lire and at the same time, depreciation - in the broadest sense of the word - was charged for just under 4,25 million lire. It wasn’t until after 1940 that these increases in sales began to slow, initially in 1941 and the increases reversed to losses between 1942-43, aggravated by the resurgence of inflation, as demonstrated by the values expressed in constant lire. Capital accounts followed to the same fate.

Drawing on the wealth generated during this considerable performance, which was linked to the declaration of auxiliarity during the war in Ethiopia and in the Second World War,[57] production investments were financed, among which the construction of a new tanning area in 1936 and a substantial allocation of funds (1,386 thousand lire) for expansion of the saddlery department charged to the 1940 financial year.

Other resources were used in purchasing the properties adjacent to the factory and in the construction, restructuring, and equipping the new buildings. In 1937, the tannery acquired a property on which Chiorino constructed a two-story house with an attic and two large rooms without ceilings, formerly used as a soap factory.[58] The following

[56] This statistic also includes a Reserve for Plant expansion of one million lire.

[57] During World War II, the declaration of “auxiliary factory” only lasted a month and half: Chiorino was notified on 16 June 1940 and the mandate was revoked the following 31 July (Chiorino records, correspondence from the Undersecretary of State for wartime production). The fact is hardly surprising, considering that the number of companies involved with the declaration of auxiliarity varied with a certain scope: 1,173 in June 1940, only 991 the following September, 1,790 in the spring of 1943. Despite the revocation, the tannery remained subject to technical assessments and regulatory appraisals by the Undersecretary.

[58] As Bi, Land Registry, Deeds, vol. 932, n. 2903, notarized by Pericle Germano on 21 August 1937. The price paid for the sale was 80 thousand lire. The property was owned by Mario Ciocchetti and measured 14.10 ares. The plot was located near the production factory, but not directly adjacent to it.

year, property improvements included planting the grass lawn,[59] while in 1939 Lorenzo purchased a property that was wedged between the property and other properties dependent on the tannery.[60] Later, in 1941, Lorenzo acquired a property to the north of the company boundaries.[61]

Between 1943 and 1947, expansion of the structures, systems and machinery continued without pause, promoted by unchecked inflation which was finally bridled by the strict monetary policy imposed in the fall of 1947. Investments made over these five years came to 52 million lire, the largest part of which financed construction of a new raw materials stocking warehouse (9 million lire), a thermo-electrical plant (8 million), a saddlery division with canopies (6.4 million), a machinery garage (3 million), additions to the former soap factory (2.8 million), road construction (3.2 million), sewer pipelines (1.1 million) and also trenches for platform scales, an apron opposite the garage, water drainage and structures for hanging up the skins. As to the fixed equipment, Chiorino installed a boiler (7.6 million) and two dryers (2.7 million), one of which in the old soap factory. The remaining 7 million were allocated to the purchase of new machinery.

Expansion of the property and the factories matched the expansion underway in production organization. Not much information has survived to this day, but what we know gives us an idea of the great development reached in the 1930s and even more during World War II. Two figures are especially revealing. First and foremost, in July 1933, the tannery em-

[59] As Bi, Land Registry, Deeds, vol. 945, n. 1083, notarized by Pericle Germano on 14 April 1938. For the property, which was bounded to the east with the company property, measured 13.65 ares and belonged to Rosina Ramella Gall, married to Mosca, Lorenzo Chiorino paid the amount of 25 thousand lire.

[60] As Bi, Land Registry, Deeds, vol. 982, n. 4204, notarized by Pericle Germano on 21 December 1939. This was an area totalling 18.68 areas on which a recent two-story building with an attic was sited, made up of eight rooms and a garden and yard. Selling the property for ninety thousand lire was Rosa Cardano, married to Zanone.

[61] As Bi, Land Registry, Deeds, vol. 6, n. 659, notarized by Pericle Germano on 13 March 1941. Originally belonging to Giovanni Blotto, the property was larger than the others (23.93 ares) and included a three-story building with annexed courtyard, garden and yard. The sale was made for the amount of one hundred thousand lire.

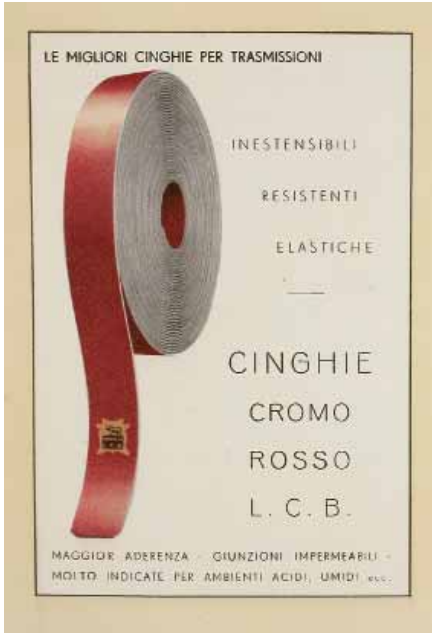

View of Conceria Lorenzo Chiorino (1932).
Advertising illustration from the same era.

ployed a workforce of seventy men; this number came to 105 - i.e. exactly 50% more - in September 1941. The number rose again to 135, nearly doubling, by July 1943. Secondly, there is also the fact that Chiorino employed ten clerical workers at this date, a presumably higher number in view of the six typewriters included in the 1932 office furniture inventory. The volume growth of the business had reached, and several times exceeded, the threshold that would have required a more functional arrangement and, as a result, a larger staff to perform the administrative activities connected with operations.

On an indirect and circumstantial basis, we can surmise what production was probably like in terms of products, considering that the sectors most involved in the economic recovery in the second half of the thirties were also the sectors which normally caused a more regular consumption of transmission belts. These were the metal and steel working industry, cables and electrical materials in general, with greater oscillations in the engineering and automotive sectors. The amount of work generated by the textiles sector was probably lower, since this area remained at sub-1929 levels even at the end of the decade. In this perspective, it is possible that the centre of company production of objects gradually moved toward belts and this hypothesis is confirmed by sporadic details indicating an amount of around 40% of the contribution to sales of the department of pickers for looms.

A final mention goes to the sales organization at Chiorino, which toward the end of the 1930s appeared to hinge on a certain number of salesmen and brokers and four agents based in Milan, Schio, Turin and Naples.

In light of these developments, it is clear that the Lorenzo Chiorino tannery was approaching reconstruction with a generally solid capital and technical situation and well equipped to face the challenges posed by the post-war period. There is no question that these challenges were many and quite arduous, since, beyond continuities with the more recent past which could not be eradicated in the course of a few years, the new international and domestic political context, the essential decisions of economic policy in the liberal sense made by the establishment of the country toward plans for European integration, development of interna-





Illustrations from the mid 1930s promoting specific product lines.
The picker department in production (circa 1930).

tional cooperation in the area of finance, exchange rates and payments and technology transfer contributed to deeply changing the system of limitations and opportunities of the entrepreneurial scope and redirected expectations.

At the end of the forties, the tanning industry was still in the throes of disputes in old-fashioned *querelles* with raw hide wholesalers for the unjustified price levels, attempting to find remedy to the dispersion of the producers and their resulting market weakness; complaints were still being made about the low purchasing power of the people and low levels of consumption; there were still complaints here about the restrictions and there about the subsidies that distorted international commerce and the invasion of foreign products, which penetrated through the cracks of a liberalization of trade that was asymmetrical between the late forties and the early fifties and penalized several national production sectors. Joining in the chorus of protests was Lorenzo Chiorino, signatory along with the largest Biella tanning industry businessmen of a grievance addressed to the national tanning industry union, the category association, to denounce the difficult situation that had afflicted belt manufacturers for all of 1948 and early 1949. The soft demand, low prices of the finished goods, high costs of domestic raw hide, excise tax on imports of foreign hides, and the increased value of the British pound conspired against the "industrial leathers" assisted by bilateral commercial agreements (with France and Belgium and Great Britain) which sacrificed this special tanning sub-sector in favour of other categories of tanneries. An interesting fact was that tanners were not demanding additional protection, but rather elimination of the excise tax on raw hides and start up of an authentic and reciprocal commercial liberalization.[62]

Similar, and quite widespread, attitudes and standpoints had sound and founded reasons, understood the actual problem, especially with regard to foreign trade, in which Italy was not always given equal status to its

[62] *Cinghie e articoli tecnici*, in «La Conceria», 29 January 1949. In addition to the Lorenzo Chiorino tannery, other signatories were the Umberto Chiorino, Bersano, Magliola, Serralunga, Varale and Corte tanneries.

European counterparts in the early fifties. Still, these difficulties related mainly to contingencies that would be overcome in the short term. Much more serious and broad reaching were two concerns that the shrewdest industrialists quickly came to understand. The first worry was that, as the markets were opening, the greatest challenges for the Italian tanning industry involved technological upgrading, the “pursuit” of the most advanced nations, abandonment of the empirics in the manufacturing processes, and moving toward a closer connection with the chemical and scientific processes. Second was that, before too long, they would have to seriously face up to the rise in leather alternatives.

As we will see in the second part of this book, in the 1950s, the Lorenzo Chiorino tannery successfully met both of these challenges. Lorenzo, who was now in his seventies and close to retirement, could feel confident about the energy and resourcefulness that his two sons, who had joined the company more than fifteen years earlier, they would put into the company.

*Bringing in the next generation*

The decision to have his sons succeed him in the business was a completely natural and logical one for many reasons. The business represented the largest part of the family wealth; Lorenzo had devoted all of his energy and enthusiasm to building the company, investing back into the company virtually all the resources that it had generated over the years. His entrepreneurial destiny, decided in 1905 when he took advantage of the extraordinary opportunities offered at the turn of the century as the Italian industrial revolution intensified, led him to radically change the wealth accumulation model inherited by the generations before him, shifting the object from ownership of land to operation of an industrial endeavour. But this was not a good enough reason to question the direct transfer of the company-family wealth to the natural heirs. If anything, we should understand that the company was a type of business (or an “asset”) that, compared to a farm or real estate, required much more training or a very different and special background to be run successfully. And to understand that it was necessary to make appropriate and specific invest-

Angelo and Fulvio Chiorino on an inspection of the saddlery department in the late 1930s.

ments in the human capital of his successors. Therefore, he began very early to think about the education and training of his sons, Fulvio and Angelo. Their training for the future began in high school. Lorenzo took steps so that their specific training would contribute new resources to the company, thanks to which the tannery would continue to develop, remain up to date, keep pace with the competition, and ensure continuity over time. However, Lorenzo did not focus entirely on the future, on the day when he would retire from the business, which in the twenties must have seemed quite far off. It was also a way to lay the intangible bases for development of the business from the very start. This was, in Lorenzo’s vision, as important as investments in capital goods and systems and more so in light of the astounding growth experienced in the course of the first fifteen years. From this perspective and in keeping with the typically Biella quality of wanting to provide for oneself, the experience with his brother Umberto during the first World War gave Lorenzo one more reason to nurture and draw upon his own family for the skills and abilities necessary to develop the company rather than hire from outside of it, with all the unknowns that this decision often implied. Lastly, but not least in order of importance, introduction of Lorenzo’s sons was a way to provide for their future, to “look after them” and give them the opportunity to have a secure means of support and a dignified lifestyle, perhaps even better than his own. Basically, Lorenzo wanted to provide Angelo and Fulvio with the combination of professional and family life that had proved virtuous and essential in Lorenzo’s own biographical experience.

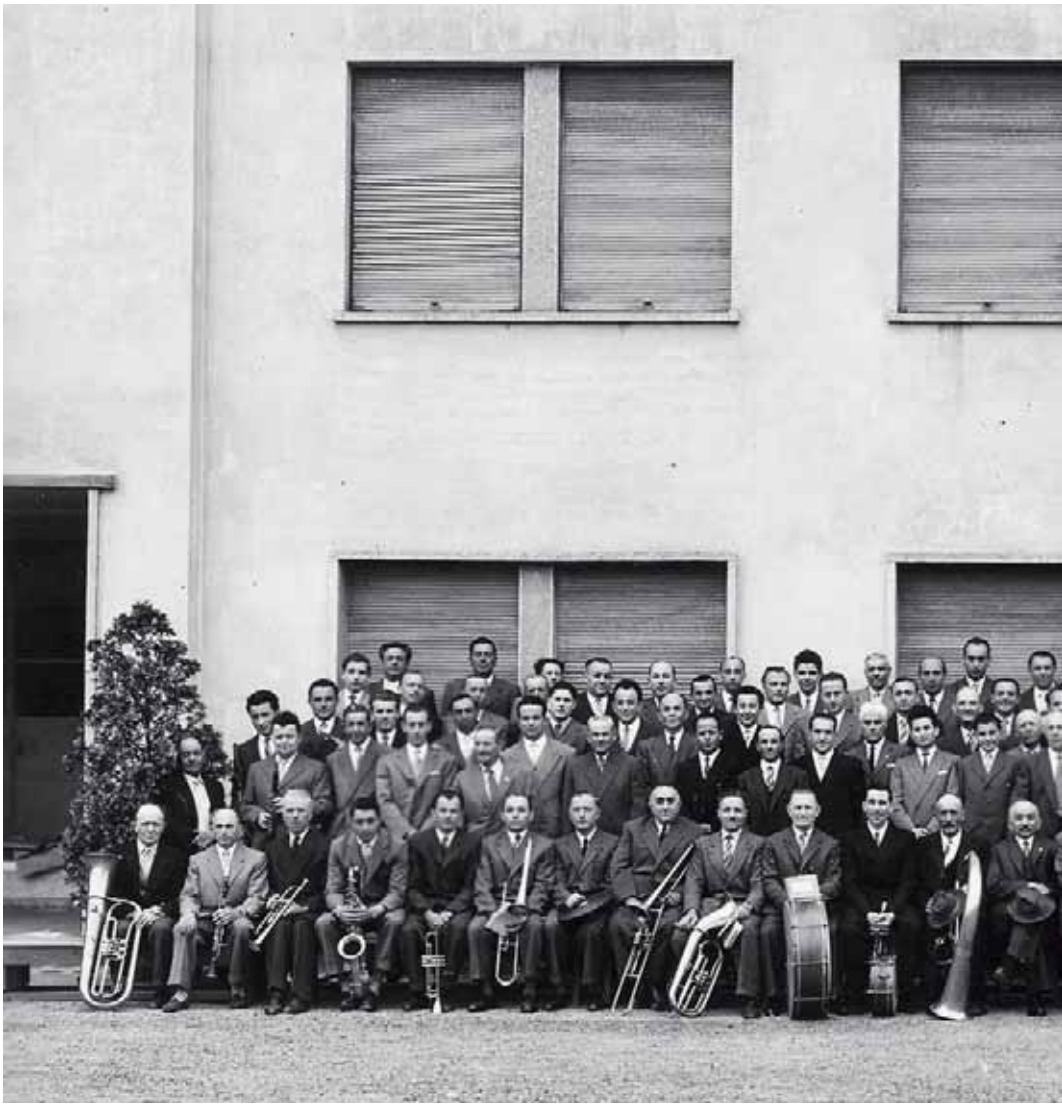
Lorenzo’s strategy aimed to impart a complete set of technical and operating skills in his sons and, in light of the results obtained, his approach turned out to be happily on the mark. Fulvio, the first-born son, was guided toward a comprehensive background and training in the technical aspects of the business. After earning his diploma in accounting in Biella, he attended the National Institute for the Leather Industry in Turin from 1924 to 1926, which at that time was considered the best professional school in Italy for training industrial experts and preparing them for technical and managerial functions in the tanning sector. Subsequently, Fulvio rounded off his studies with a year-long course at the Leather Institute in London, an internationally respected school. After fulfilling his military service, Fulvio joined the family business in 1928.

Five years later, in 1933, Angelo also joined the company, after completing a course of studies oriented toward acquisition of economic and managerial skills, based on his accounting studies in Biella and a degree in business and economics at the University of Turin.

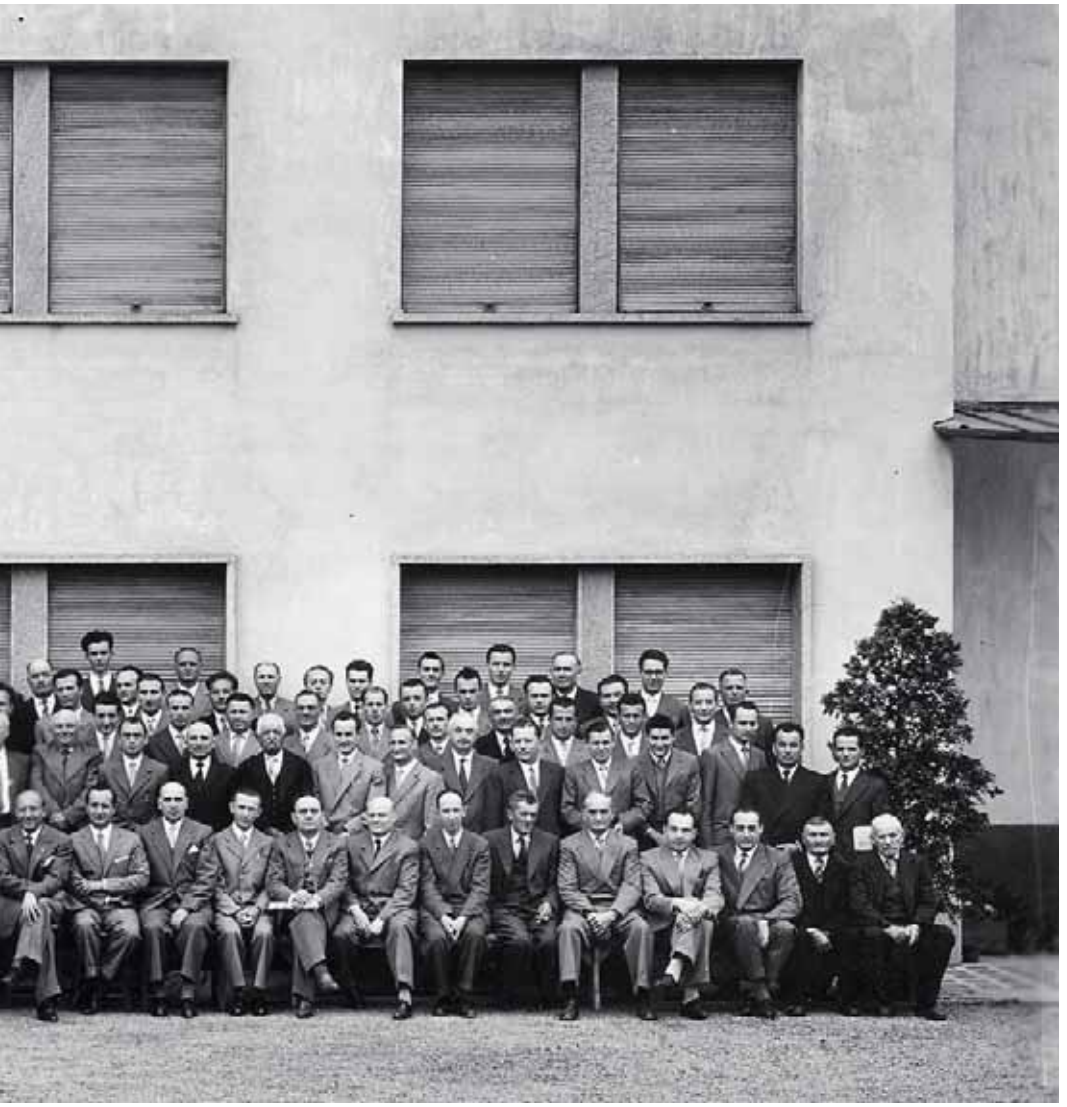
Each according to his background and training, the two young men took on different roles in the company. Fulvio was assigned with the responsibility of the tanning department, while Angelo was in charge of pickers production. Both of the sons were given a salary, just as Lorenzo and Umberto - during his tenure in the company – allowed themselves. The young men worked their way through a gradual process toward formal and legal involvement in the business responsibilities. The first step, in December 1935, when both sons were just under thirty years old, consisted in vesting them with a general power of attorney to act in the name of and on behalf of the company. The second important step involved the sons becoming full-fledged partners, which took place in July 1943, when Lorenzo was seventy-six years old and realized that it was time for him to retire. He relinquished his operating responsibility and began to transfer all his authority to his sons. At this point, the "Conceria Lorenzo Chiorino" tannery ceased to exist and was re-established in the form of a partnership under the name "Conceria Lorenzo Chiorino e figli" (*Lorenzo Chiorino and Sons Tannery*).[63] Concurrently, the asset and liability transactions between the partners were defined in order to separate the family wealth from the company capital.

The entrance of the second generation of ownership immediately made it possible to give more substance to the hierarchical and functional ranks in top management of the company, which was divided between the two owners, the head of engineering, assistant engineer and the department heads. Pursuant to the new arrangement, Lorenzo could gradually reduce his operating responsibilities and concentrate on the supervisory role. This was appropriate considering that it took place over a ten-year period (1933-1943) in which the company was undergoing major growth and doubling its workforce. On their part, Fulvio and Angelo

[63] Archive of the Chamber of Commerce of Vercelli, Business Register.



Group photo to celebrate the fiftieth anniversary, 19 May 1956.
Seated in the centre, Fulvio and Angelo Chiorino.




CINQUANTENARIO
1906 1956

were able to accrue experience in the technical, economic and operating aspects related to company management and grow personally, while taking advantage of paternal tutelage, through economic ups and downs of extraordinary intensity. In the twenty years when both generations of Chiorino were actively involved in the business, even more important than the period of apprenticeship and entrepreneurial growth was the brothers’ assimilation of the entrepreneurial culture that Lorenzo had established and nurtured over the years and which he continued in running the business on a day-to-day basis. In the early fifties, when the time came to assume full responsibility of management, Fulvio and Angelo found themselves in the position to reproduce the value system that Lorenzo had attached to the company, carrying on its deeper identity as well as the business.

Portrait of Lorenzo Chiorino (1955).


Advertising illustration of the new Chromnylon “Fortenax” belts.

# 2.
# Leather, Rubber, Plastic.
# Profile of a metamorphosis, 1958-1982

In the first three decades that followed World War II, Chiorino tannery management were compelled to cope with challenges of a whole different nature compared with the circumstances prevalent in the twenties and thirties. Pre-eminent in this period were the technological aspects and innovation related to introduction of alternative materials to leather and the search for new industrial applications, research that in the Seventies led to Chiorino's emancipation from the textile industry as the main reference market for company production and the changeover to a set of new sectors, including the engineering industry, the paper sector, packaging and the food industry.

Redefining the priorities of management according to the buzzword of "change" brought extraordinarily vast implications for the enterprise, since it required acquisition of technical skills that could adapt and guide the new production processes and training or hiring personnel specialized in handling the new materials. At a later time, the urgency to choose a radically new range of products exerted even more intense pressure on the definition of the entrepreneurial strategy, the internally available core of knowledge and technical abilities and the sales organization. In essence, this led up to the dramatic "change in identity" that had been incubating in the run up to the sixties. It was a full-blown metamorphosis that distinguished the fate of the Chiorino Tannery from that of its local competitors - technical leather manufacturers - and which, pursuant to completion of the transformation of the production structure, allowed the company to begin a renewed period of vigorous growth in the last twenty years of the millennium.

The fact that change and innovation became the dominant motif of management in the years of the reconstruction and the economic miracle could hardly be avoided; the alternative was a progressive sterilization of the company business. Sweeping changes and major evolution marked the post-World War II years in terms of technology and markets and produc-

tion, to the benefit of a stable internal macroeconomic and international context and opening of the markets as Europe approached unification. Technical progress and technology transfer, made possible by the spread of direct foreign investments and by specific initiatives on the international front, changed the conditions in which production took place in numerous sectors, including tanning and technical leathers, as well as the textile sector which the Chiorino tannery supplied. Due to these changes, the quality improved and there was a new availability of synthetic raw materials - synthetic rubber and thermo-plastic resins - which presented characteristics better able to meet the needs of demand and had the advantage of lower costs and a shorter production cycle with respect to leather. At the same time, upgrading the systems used by the textile industry encouraged the parts and accessories sectors to adapt to production of articles with diverse chemical and physical properties and with greater resistance against mechanical stress. As time passed, the innovations made to textile machinery led to the obsolescence of an entire range of accessories traditionally used in weaving and spinning units, foreshadowing serious difficulty for further growth of a company that had built most of its fortunes on this range of products.

In parallel to the technological evolution, the production markets also began to demonstrate gradual structural changes. In particular, starting at the end of the fifties and progressively intensifying in the following decades, the tanning industry was showing a tendency to shift from the more developed countries, such as North America and north-western Europe, toward less developed nations such as Mediterranean Europe, Japan, countries with planned economies and newly independent third-world nations, blazing a trail that even the more recently industrialized countries[64] would follow in the future. Thus, in Italy, leather production continued to grow throughout the decade of the sixties, driven by development of the footwear industry, but later, after specializing and reaching full maturity, it experienced a decline comparable to that of the more advanced economies.

[64] Cf. Food and Agriculture Organisation (FAO), *L'économie mondiale des cuirs et peaux et de la chaussure*, Rome, FAO, 1970, p. 4.

The combination of these changes compelled the Chiorino tannery to embark on a new direction in terms of products and relative markets. While it is true that in the context prevalent in the 1950s, the company's exposure to the stiff and formidable international competition grew considerably, it is also true that at the same time, the technological and market opportunities increased enormously with respect to the years between the two wars. To get an idea of the margins of expansion that the leather sector had achieved in Italy, just compare the performance of imports of leather skins without hair: at just under 1,400,000 kilograms in 1933, thirty years later in 1963 the totals were well above 3,600,000 kilos.[65] Much greater was the potential of the market for rubber applications and plastics, still in the earliest stages of development.

To better understand the impact that the changes mentioned had on the enterprise, it is worth noting that in the thirty years dealt with in this second section, technical developments required more extensive and more complex skills than the skills needed in the start-up years of tannery and which Lorenzo Chiorino was able to pick up and teach himself. Even at the end of the sixties, synthetic rubber was still not completely established at universally recognized quality standards; its properties were not widely taught in the engineering and scientific schools; and it endured the stiff competition that the plastic materials moved as regards a wide range of industrial applications, for which both types of materials showed moderate replacement opportunities.[66]

This prolonged situation of relative uncertainty among the technological alternatives, together with the vast potential still open to the development of synthetic raw materials and their industrial use, compelled parts manufacturing companies to invest resources in the field of research and development to maintain their market positions and make the appropriate technological upgrades. The industry of the "small series", which catered to a highly specialized and diversified demand for made-to-measure products, dominated by medium-sized businesses,

65 Cf. «La Conceria», 21 November 1963.

66 A.H. Meursing, *Le esigenze delle industrie della gomma produttrici di articoli «non pneumatici»*, in «Industria della gomma», June 1968, pp. 31-35.


The advantages of leather over rubber in an advertising leaflet in the mid 1950s.

such as the Chiorino tannery, and also smaller ones, saw the opportunity to carve out a niche in this market sector in which they had a competitive advantage with respect to the "large series" industry, dominated by the large enterprise. Nevertheless, compared to the large enterprises, Chiorino's smaller size and its lack of economies of scale compromised its ability to procure resources (financial and human) to allocate to research and development programmes. This represented a potential structural impediment to growth, and the search for the best way to face it and effectively turn it around was crucial to development of the company. Also important was capital solidity and a management fully aware of having to make financial equilibrium a priority objective and a vital prerequisite of the strategies of innovation, given the relative scarcity of resources that could be invested in research. This was also the importance of the contribution - in terms of skills and energy - of the third generation, which joined the family business in the sixties.

### *Introducing alternatives to leather*

In the fifties, the comparison between leather and its alternatives returned to the forefront again and grew quickly thanks to the progress made in the chemical industry, which led to a larger use of synthetic rubber and plastic materials. Much more than the commercially available, low priced alternatives produced in the period between the two wars, namely natural rubber and natural fibre fabrics such as camelhair, cotton, and hemp in many fields of application, the new materials represented a decidedly intimidating competition to leather, which would prove impenetrable in the long term. The force of the threat was so great that campaigns to promote and protect leather began to intensify in Italy and around the world, promoted by *ad hoc* organizations. In Italy, the Centre for Leather Promotion, financed by the members of the National Tanning Industry Union (Italian acronym UNIC), implemented several strategies including paid announcements in trade journals, participation in the major trade fairs (including the Fiera del Levante and the fairs of Milan, Vigevano, Bologna, Civitanova Marche, Parabiago, and Vicenza among others), participation in international conferences dedicated to health edu-

cation, exertion of pressure on the scholastic authorities to bring their brand of teaching to the schools, and reaching out to a younger generation when it was still in its formative years. The Union even took advantage of the more modern communications tools, financing production of short documentaries singing the praises of leather which were distributed and screened in film houses. In 1956 alone, the Union produced four documentaries, touting so much propaganda for leather that rubber manufacturers sought remedy through litigation.[67]

Still, even this profusion of effort was unable to stem the tide, mainly because rubber alternatives offered a plethora of market advantages and a powerful and concentrated industrial apparatus. At the end of the sixties, while the presence of leather alternatives in manufacturing shoes (which represented the primary end use of tanned hides in Italy and around the world), clothing, and luggage and bags was appreciable but not vast, much more pronounced were the alternatives to leather for the manufacturing industry, Chiorino's largest buying market.[68] As time passed, management began to notice more urgently the need to get to know the alternative materials market and evaluate its actual potential, probing the margins of commercial opportunity. After assessing its value to the company, Chiorino would study the feasibility of starting up this sort of production in the company.

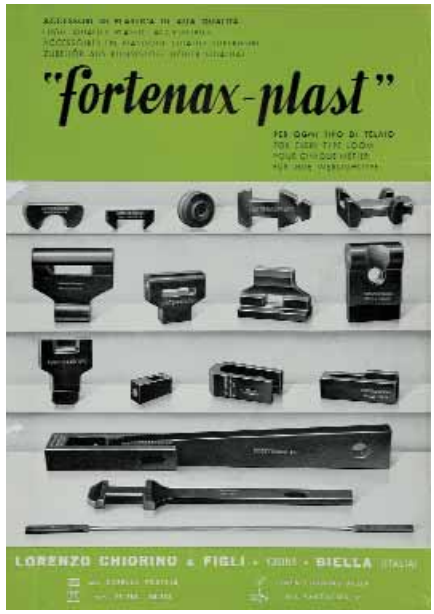
Fulvio Chiorino personally and chiefly undertook the vast and challenging job of exploring the commercial and production possibilities of synthetic resins. Due to his training and background, Fulvio was in charge of production and was also the member of management who guarded the company's technical knowledge. Since these synthetic materials were only recently being used in industry, at least in Italy, and the company did not have the in-house skills or knowledge to approach them, the Chiorino tannery had to find a way to acquire this knowledge by developing strategies or taking advantage of the contribution of apparently diverse circumstances that were, in actual fact, quite similar.

[67] Cf. *Un anno di propaganda di cuoio*, in «La Conceria», 4 January 1957. The tannery also joined the propaganda initiatives to defend leather by applying a stamp with the slogan "Nothing can replace leather" on the envelopes used in ordinary correspondence.

[68] Cf. FAO, *L'économie mondiale des cuirs et peaux et de la chaussure*, cit., p. 74.

The first new articles to enter production after about three years of study and development were, in 1958, plastic pickers for looms. Sold under the name "Fortenax-plast" (a variation on the "Fortenax" name, created in the fifties for the more traditional sheepskin pickers), they were obtained by extruding high density polyethylene and offered the advantage of being much more durable and more elastic than traditional leather pickers, and therefore, caused fewer problems for the mechanical parts of the looms. Lastly, they were also much cheaper to make. In this case, despite the dramatic innovation of the raw material used, the technical difficulties to overcome were not particularly significant, aside from some problems initially posed by the fact that the extruders available were still relatively underdeveloped.

At the same time, in 1959, Chiorino began to manufacture leather and nylon belts, which it dubbed "Chromnylon". Development of these products was more laborious and marked the considerable growth in the company's technological and production abilities, a set of skills that in the seventies would be selectively drawn upon and reformulated in manufacturing conveyor belts. Chromnylon consisted of a band of stretched nylon covered on each side by chrome tanned hide. The key innovation of the product lay in the band, since this was the point of discharge of the force and the tension originating from the power transmission. Considering the heightened elasticity of the nylon (practically inextensible), resistance to breakage, lightness and thinness, "Chromnylon" was extremely high performing and presented a flexibility of use that topped the best leather belts. However, producing the Chromnylon belts required Fulvio to travel frequently to Germany to the BASF factories - which manufactured the polyamide bands and drew the belts - in order to acquire familiarity with the characteristics of the nylon, its potential and methods of use. In terms of the process, the most considerable innovation lay in coupling the strips of leather to the internal band, a technical problem that was resolved by drawing on the company's vast experience in the fields of leather, adhesives and joining processes. The combination of skills and knowledge produced a high quality, relatively stable product that could stand up to the competition of Swiss and German competitors and differentiate itself







Loom accessories produced with the new synthetic materials in several illustrations from the late 1960s.
The “Nailgum” flat transmission belts in illustrations in the early 1970s.

from the rubberized canvas belts that Pirelli was manufacturing at that time in Italy. In addition to the textile industry - where it was applied on the machinery developed for various types of processing and especially in twisting and carding -, the product was also used in the paper industry, the food sector, in lamination units and in the engineering sector. About a decade later, after making the appropriate adjustments and taking advantage of the experience accrued in working with rubber, but still in a groove of contiguity, this technology was used to produce rubber and nylon belts and, later straps and tape.

Even more relevant than Chromnylon for the repercussions that it had on Chiorino in learning new skills and appropriating new technology was the innovation introduced to the company processes with the inception of manufacturing rubber products, introduced onto the market in the first half of the sixties under the brand "Fortenaxgum".[69] Compared to the introduction of polyethylene for pickers, the changeover in this case was much more involved, if only for the fact that rubber technology was more complex and the production process of the parts to obtain was more complicated: lug straps and bumpers, at the start, growing to an extensive assortment of accessories for textile machinery, cots and aprons for spinning and condenser rubbers for carding machines. Chiorino mobilized its key technical experts and concentrated them on the "rubber project": Fulvio supervised most of the developments; Gian Paolo, Fulvio's first-born son, joined the company after earning a university degree in chemical engineering; an electro-technical expert was hired especially in the mid-sixties to guide the developments in production processes; and Chiorino brought in a highly experienced independent consultant with specialized skills.[70]

[69] Information on the start up and subsequent development of rubber processing mainly relate to conversations with Gian Paolo Chiorino (5 May 2005) and Luca Chiorino (3 May 2005).

[70] Luca, the third son of Fulvio to join Chiorino after earning a degree in industrial chemistry, was mainly involved in development of rubber products at the end of the sixties. We will discuss this further in the next paragraph.

Specifically, at that time, this certain expert was the director of the Montecatini plastics research laboratories in Castellanza.[71] Gian Paolo the engineer was the first to make his acquaintance during a tour of the chemical giant's plants, which Chiorino was visiting to gain familiarity with synthetic rubber. He hired him on the spot. For Renato Maini, the esteemed consultant, it meant the start of a decade-long collaboration with the Chiorino tannery, which he provided weekly every Saturday.

Despite the investment in individual energy and exceptional independent skills and despite the importance that rubber would later have in terms of sales and investments, the importance of which we will talk about later, crystallization of the technical and scientific techniques around the "project" would take place gradually. Experimentation on rubber began slowly, almost behind the scenes, originally employing no more than two or three people and run only a few days a week. New resources were dedicated progressively, as positive results began to emerge in the experimentation and the possibility to start up production could be seen clearly and concretely. Because one of the difficulties in using synthetic rubber lay in coming up with the right formula to obtain a material that had certain characteristics, starting with a dozen or more basic ingredients, the first step was to set up a small laboratory supervised by the independent consultant. They studied the products developed by the competition, experimented on formulas, blended the components, vulcanized and tested several types of rubber. At the onset, if the tools available at Chiorino were not adequate to arriving at a satisfactory analysis of the materials, samples would be sent to the International Rubber Institute of Paris. Establishment of a laboratory was no small innovation, even for this

[71] The Castellanza research laboratory was one of the many research laboratories run by Montecatini. Established in the thirties, by 1948 it had expanded significantly to allow an intensified research and development activity. Despite the fact that Montecatini had been manufacturing several types of synthetic resins in the Castellanza plant since 1934, it took until the fifties for this type of production to rise and develop, following the wake of the expanding petrochemical industry. Cf. Pier Paolo Saviotti (1990), *Il ruolo della ricerca e della tecnologia nello sviluppo della Montecatini*, in *Montecatini, 1888-1966. Capitoli di storia di una grande impresa*, edited by Franco Amatori and Bruno Bezza, Bologna, il Mulino, 1990, p. 382; Franco Amatori, *Montecatini: un profilo storico*, in *ibid*., pp. 60 et seq.; Vera Zamagni, *L'industria chimica in Italia dalle origini agli anni cinquanta*, in *ibid*., pp. 112 et seq.

The chemical laboratory and the saddlery department in the sixties.

tannery which was accustomed to doing research since the beginning thanks to the imprint given to it by Lorenzo to experiment on new technical procedures and to constantly test out product quality. There was already a small tanning laboratory, but in any event, with rubber, and successively with plastic resins, the laboratory activity would have become a fulcrum more consistently and systematically inserted into the company production routines.

The second step was research into the best fabric to be rubberized, overlapped in multiple layers, pressed and vulcanized. Since the fabric was the base of the object, i.e. the lug strap, its characteristics were particularly important since they were responsible for the bonding between the layers. Another step, resolved thanks to the engineering skills of company personnel, consisted in procuring moulds that could withstand the stresses of the final phases of processing, drawing and vulcanization. After giving samples of the product to the clientele interested and after receiving a positive response, the next step was switching from small-scale, experimental laboratory production to large-scale industrial production. The process was replete with technical complications (especially as regards the spreading, vulcanization and measuring operations) and for which the engineering skills of Gian Paolo and the independent consultant proved invaluable. Finally, it took another two and half years between 1962 and 1965 for the experimental phase to be completed, production to reach normal levels and the product to be marketed to buyers.

Along with the lug straps and buffers, a third rubber product entered production at the end of the sixties, nexus of the transformation of rubber processing into a full-fledged industrial division and destined for a significant and long-lasting commercial success, were the “Spinngum” condenser rubbers for carding machines, also supervised by Gian Paolo in the main phases of production, albeit at a distance.[72] The product in itself, “revisited” with the new synthetic

[72] Gian Paolo’s departure from the tannery to pursue his own professional career will be discussed in later paragraphs. For information on the development and commercial success of the aprons for carding machines, refer to the interviews with Gian Paolo Chiorino, Lorenzo Chiorino (11 April 2005) and Cesare Garella (26 April 2005).

material in the same way as the other traditional products, was not new to the tannery. Since the twenties, the tannery had been producing chrome leather combing aprons, while the advantages of leather aprons for carding machines were vigorously promoted in a company catalogue published in the first half of the fifties in contrast to the same aprons in rubber, already being marketed by competitor companies.[73] After sensing the good commercial potential, the decision to undertake production, which had inherent technical difficulties caused by the extraordinary precision required of processing and the machinery used for these purposes, was facilitated by the opportunity to acquire forty-odd steel cylinders (more precisely mandrels) of various diameter being sold off by a specialized Belgian company operating in the textile district of Verviers and already a supplier to the largest European carding machine manufacturers. This was a fortunate event, as it allowed the company to have manufacturing tools that were perfectly calibrated and of proven technical reliability and to immediately establish an offer of sufficiently varied formats to satisfy the needs of a very differentiated demand. The variety also made it possible to reduce the risk of under-using the autoclave and other machinery acquired especially for this product line. The Belgians were very generous with the technical advice they provided on the various stages in the processing leading up to vulcanization. The subsequent phase of polishing the external surface of the apron (which had to be perfectly smooth and uniform) and scoring could be performed in house, taking advantage of the skills already present in the company.

On a case by case basis, but following essentially similar processes, other rubber articles were added to the assortment of products offered by the tannery in the sixties. Their success with the clientele was so great that rubber processing rapidly ballooned into its own manufacturing division, which was established in the seventies through a plant expansion and reorganization project in view of production expansion. Its importance in physical terms was matched by a corre-

[73] These rubber aprons were being manufactured by Pirelli and one French and one German company.

spondingly high proportion of this production in terms of sales. As shown in Table 5, rubber products, which were posted to the accounts starting in 1966, accounted for one-fifth of the value of sales in 1970 and in approximately five years came to exceed 40% of total sales. At the end of the decade, the importance of the new production was so great that the ownership decided to emphasize it in the company name, which was changed in 1969 to "Lorenzo Chiorino & Figli s.a.s. – Industrie riunite (Cuoio-Gomma-Plastica)". It is significant and prescient of future developments that the term "tannery" was dropped thereafter from the name of the company.

Table 5. Proportion of rubber production on total sales at Chiorino 1996-1970

| | Rubber sales (millions of lire) | Percentage of total sales (%) |
|---|---|---|
| 1966 | 26 | 6.10 |
| 1967 | 61 | 13.23 |
| 1968 | 67 | 15.69 |
| 1969 | 89 | 18.20 |
| 1970 | 120 | 20.98 |

It is still important to remember that, despite the rapid evolution in rubber processing in a very short span of time, throughout the sixties and part of the seventies, company production remained dominated by leather in terms of sales, dedicated physical spaces and the make up of the workforce. The uneven pace and distribution of the upgrading process of machinery in the textile industry, its splotchy development, leaving many companies equipped with traditional systems alongside other companies more ready to upgrade, led to a long-standing superimposition in the demand for leather accessories and accessories made in the new synthetic materials. Thus, in certain respects, it was a natural choice for the tannery to continue cultivating its leather clientele and fully maintain a product line that was based on its origins and in which it had accrued extremely extensive experience. What's more, Fulvio and Angelo had continued to invest resources in perfecting tanning techniques and processing leather throughout the fifties and sixties, demonstrated by the running of a

tanning laboratory and hiring of an independent expert chemist to work part time. On the whole, leather represented a pool of technical and technological experience into which the company dipped to develop products based on synthetic resins.

Also from other perspectives, introduction of the new products took place relatively quietly, without bringing any major impact on the company overall. It is a rather surprising fact that, despite the fact that Chiorino was acquiring knowledge and technologies that would dramatically change the spectrum of internal skills, while more space was gradually being given over to synthetic materials, and the production aspects and, to smaller degree, the reference markets were changing, the company changed little in terms of its balance sheet. Throughout the sixties, for example, the work force remained more or less constant, increasing its staff from 95 employees in 1961 to 108 in 1970. As shown in Table 6, the ten-year figure conceals a more dynamic performance, characterized by a reduction to 78 employees in 1965 and a constant increase in the following years, with peaks in 1966 and 1970. These changes, however, do not alter the essential picture of stability of the sixties.

Table 6. Work force employed, 1961-1970

| | Number of employees |
|---|---|
| 1961 | 95 |
| 1962 | 96 |
| 1963 | 96 |
| 1964 | 85 |
| 1965 | 78 |
| 1966 | 91 |
| 1967 | 93 |
| 1968 | 97 |
| 1969 | 101 |
| 1970 | 108 |

Sales figures followed a similar trend, also demonstrating substantial stability. Sales amounted to 353 million lire in 1961 and grew to 572 million by 1970, showing a total increase of 62%, equal to an average annual compound growth rate of 5.5%. Measured in real terms, perform-

ance was much less dynamic, since it just barely touched an increase of 14% in the entire period, equal to an annual compound increase of 1.46% (see Table 7). In this case, the decade concealed business performance that was much more developed, split into alternating periods of growth and contraction. The focus in this sense was the economic turnaround represented by the credit and fiscal tightening of 1963-64, given that it marked the end of the Italian "economic miracle" and the beginning of a period of less intensive growth. The tannery was also affected by the change in the economic period, posting a considerable loss in sales in 1964 (-17.1%), a contraction that is even more pronounced in comparison to the figures expressed in current lire (-21.8%). In 1966, the recovery was already underway and it remained so in the following years, with the only exception being in 1968.

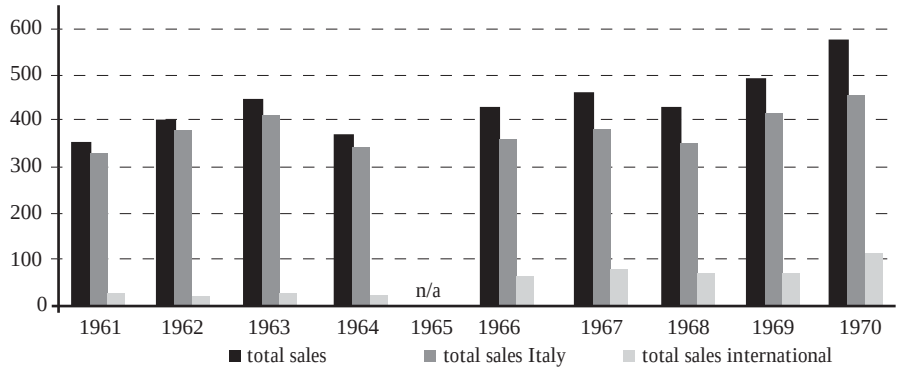
Table 7. Total sales, 1961-1970 (values in millions)

| | Current lire | 2004 lire |
|---|---|---|
| 1961 | 353 | 7,390.8 |
| 1962 | 400 | 7,968.4 |
| 1963 | 444 | 8,226.6 |
| 1964 | 368 | 6,436.8 |
| 1965 | - | - |
| 1966 | 426 | 7,000.9 |
| 1967 | 461 | 7,427.5 |
| 1968 | 427 | 6,793.2 |
| 1969 | 489 | 7,567.1 |
| 1970 | 572 | 8,423.2 |

More significant was another trend that began to be established in the second half of the sixties and which would become very important in the following decade, namely, the growth in sales abroad due to rising product exports (see Graphic 1). Still, even this fact was not particularly new. As far back as the twenties, records show that a small part of Chiorino production was sold on the international markets. After the pause imposed by the closing of the international markets in the thirties, the export channels were gradually reopened in the fifties; the company found a new relative stability in exports in the first half of the sixties, of just under 7%. In the latter half of the sixties, how-

ever, sales taken outside of national boundaries made a full-fledged leap in quality, opening a path intended to expand and deepen until it became a large source of company sales. One figure sums up the dynamism of this development: against the 62% growth in sales in the decade, exports multiplied by 3.87 fold, coming to account for more than one-fifth of total sales in relative terms.

Graphic 1 . Breakdown of sales, 1961-1970 (millions of current lire)




At the helm of the company, Fulvio and Angelo, without the benefit of their father's guidance since the fifties, increasingly defined their respective roles under the banner of harmonious and complementary division of responsibilities. Fulvio, a technologist by trade, assumed responsibility of production. Using a metaphor, we might say that he was on the "front line" inside the company. Fulvio was in charge of all the technical and technological aspects, organizing production and labour, provisioning raw materials, and supervising the normal operations of the production machinery and product quality. He was also responsible for managing relationships with employees and training sales agents regarding the technical characteristics of the tannery's products. Of course, Fulvio wasn't always directly and exclusively responsible for all these tasks. The organizational structure of the factory also included middle-management figures with technical skills who provided closer supervision of daily operations in the production divisions and were delegated important tasks relating to organization, performance of production, design and supervision.

Nonetheless, even when he was not supervising these responsibilities personally, Fulvio still had the final word on issues originating from these areas and, within company management, he was delegated with the responsibility and power to decide. At least where the decisions did not have economic or financial implications, in which case, the decisions had to be taken jointly and Fulvio had to consult with his brother Angelo.

The importance of the technical changes in the years following World War II and the consequent need to import new materials, new products, new technologies, and new skills and knowledge into the company gave a significant boost to Fulvio's role in the company, both inside and outside the scope of monitoring the innovations that were being introduced in technology and products in the sector. In this sense, his sphere was far from confined to the merely running the business. As his father Lorenzo had done before him, Fulvio kept a sharp eye on the developments that involved the competition and on the changing needs of the clientele.

On the other hand, Angelo was more interested in the external relations, or better, he was more attentive to the context of the company in the multifaceted set of markets in which it operated, interested in understanding the repercussions and implications and noticing new challenges, impediments or opportunities for the life of the company. With a degree in economics, Angelo assumed an operating role in the company from an economic and financial perspective. He was responsible for the accounts, keeping the economic performance under control, understanding all aspects of the capital and financial situation, monitoring the restrictions and resources available. As a result, he was in charge of evaluating the feasibility of an expense and the sustainability of an investment in production; employing the wealth accumulated and managing the treasury; planning the fiscal aspects and company arrangement. In discharging his duties, as mentioned, Angelo took advantage of the tools acquired in his training course as well as information and knowledge that stemmed from constant observation of the different markets in which the company operated. He observed the currency markets, important in acquisition of the raw materials and the uncertainty of a growing share of production; the raw materials markets; the financial and real estate markets, which he studied to seize opportunities to purchase land used for expansion of the production systems or investing part of the company reserves; and finally

the product markets to observe the trends underway and the general evolutionary plans of the sectors that represented the key clients of the tannery.

The only executive role of Angelo implying direct responsibilities regarding production was in coordinating the picker department, a legacy dating back to when he joined the company in the years between the two wars and which he subsequently made his own. But his astute ability to place the company in more extensive frameworks and to project it into future perspectives was a very important and distinctive contribution. It certainty represented an essential asset in the fifties and sixties, when it was vital to understand the need to face the challenges of change and innovation and prepare the company for these changes, and in the seventies, to direct the company toward subsequent growth when it meant abandoning textiles as a reference market.[74]

The assortment of strongly complementary skills and the clear division of responsibility between the brothers, along with their habit of regularly and extensively consulting with each other, exchanging information and comparing notes, ensured streamlined decision-making and efficiency in the company management, making it possible to successfully face the period of growth and transformations that took place after World War II and undertaking the uncertain and arduous road of change, along which very few local competitors were able to keep up with Chiorino.

Finally, in the period between the mid-fifties and the end of the sixties, the company made a dramatic overhaul of its products and included the traditional leather products along with plastic pickers, leather and nylon transmission belts, as well as rubber lug straps, harness straps, bumpers, buffers, cots and aprons. At the same time, the company's net equity expanded considerably. Most of all, Chiorino acquired and assimilated a generalized inclination to embrace the challenges brought by change, according to an attitude which only partly revealed its precedents

[74] The author is particularly grateful to Maurizio Sella and Lorenzo Chiorino for information that helped understand and pinpoint the role of Angelo





Rubber products in the early seventies.

in the push of the founder, Lorenzo, toward continuing improvements in the quality of the products and continuing adaptation to market needs. After the war, this inclination called for more courageous efforts and had implications of a much vaster scope on the life of the company.

By observing the developments of these years and noticing the similarities between their methods of introducing individual new products, among the numerous lessons learned, we seem to notice the sharpening of a specific method for approaching innovation, a way that would be progressively condensed into a model and would be used in subsequent occasions. Beginning with identification of this model in a market potential based on a variable combination of highly specialized knowledge drawn from outside the company in the form of consulting, internal skills supplied by the technical training of the ownership and the abilities and knowledge already present in the company or developed concurrently with introduction of new materials and new technologies. A leading element of the model was creation of cooperative relationships with suppliers and clientele for the product development and testing phases. Generally, the process of innovation developed gradually according to a *trial and error* process with similarly gradual financial investments. Another very important element was the extraordinary amount of commitment, namely the personal involvement and dedication exhibited by all the people directly involved in the process, which included Fulvio, several members of the third generation, and numerous members of the technical staff, in which the essential skills were distributed and accumulated. As the complexity of production increased, these skills could no longer be the exclusive domain and control of ownership. An additional aspect of the model was the tendency to generate skills and knowledge that was relatively difficult to transfer, concentrated in key personnel and, as a result, to develop a strong reciprocal interest in establishing long-term employment relationships. At the same time, thanks to an infinite sequence of adjustments and adaptations, innovation also produced a high level of "specificity" of the machinery and processes.[75]

Combining caution and experimentation and taking advantage of

[75] The word "specificity" refers to the concept of *asset specificity*.

the alliances forged prior to and after the production process, this approach to operations made it possible to get around the financial and structural restriction placed on research and development activities of a small-scale company that was increasingly oriented toward chemicals. It successfully incorporated the need to preserve capital solidity and was well-adapted to a relatively simple and informal factory organizational structure.

In the fifties and sixties, disguised behind an outwardly sluggish though measured performance in terms of sales growth and workforce numbers, an enormous and wide-reaching process of change was underway, yet uncertain in the final outcome but resolutely determined to ensure conditions of growth and prosperity to the company. The third generation members of the Chiorino family introduced fresh new enthusiasm when they joined the company in the sixties.

### *The third generation: a means for change*

History repeated itself when Fulvio and Angelo, like their father Lorenzo before them, began to build their own families after establishing their roles in the business. In particular, when the cloud of the Great Depression had finally passed and the prospects for developing the business showed a positive outlook, the young men were able to look to the future with a certain degree of optimism. They were a few years younger than their father had been when he settled down. Angelo, the second-born son, married Margherita Reda in September 1935. A year later, in November 1936, Fulvio married Olga Perona. The weddings were quickly followed by the birth of children, five for each couple, all born in the space of fifteen years from 1937 to 1951. By a surprising coincidence, the brothers and their wives each had four sons and one daughter: Lorenzo (1937), Federico (1938), Maria Chiara (1942), Gregorio (1945) and Amedeo (1948) were Angelo and Margherita's children; Gian Paolo (1937), Mario Alberto (1939), Luca (1942), Stefano (1945) and Anna (1951) were the children of Fulvio and Olga.

Just as their father before them, it was only natural for the two business partners to consider their children the best candidates for positions of

responsibility within the company and guarantee its continuity through succession of management. This idea guided their decisions concerning their children's education and professional training as soon as they began their secondary school studies. Still, it was more difficult to imagine an exact placement in the company for each heir. In the first place, it was important to consider the possibility that the revenues of the tannery might not be enough to maintain so many family members. At the same time, it was also an inherently difficult task to guide the third generation into professional areas compatible and consistent with the growth needs of the company. To say nothing of the fact that it would be necessary to choose the most appropriate candidate - two at the most - to undertake the greatest responsibilities of management.

Faced with this conundrum, Fulvio and Angelo decided to limit the number of children who would join the family business. Neither of the daughters were considered candidates in any event, as was the practice in the fifties, and as the local tradition of succession dictated.[76] It was also established that only three children for each of the brothers would play a role in the company. The sons not considered for succession would receive comparable treatment in the form of portions of the family legacy. As regards the studies and profession, the solution undertaken meant reconciling the preferences and wishes of the parents, the needs of the company, and aptitude and interest of the children. So, Fulvio's children were encouraged to pursue a technical education, while Angelo's boys undertook a more economic and managerial course of study.

Lorenzo Chiorino, first-born son of Angelo and first member of the third generation, was also the first son to join the family business. After earning his diploma at the scientific high school, he followed his father's advice and began to study economics. Lorenzo would graduate a few years

[76] It was a long-standing custom in Biella that female scions were excluded from the estate as universal heirs. Their share of the family legacy was usually assigned as a dowry upon marriage, while additional inheritances came in the form of subsequent donations if it was necessary to make compensations with the birthright left to the male heirs. Sons were generally the only universal heirs and did not split up the estates handed down to them, usually land and property, in order to limit excessive fragmentation (cf. F. Ramella, *Terra e telai*, cit., pp. 72 and subsequent). Angelo (1846-1921) and Lorenzo Chiorino both honoured this long-standing tradition; in 1956, Lorenzo liquidated his three daughters and gave the company capital to his sons.



1. Aerial view of the factory in the late 1950s.
2. The exhibition booth set up for the Milan trade fair in the late fifties.

later in economics at the University of Turin. After completing his military service in Aeronautics in early 1962, Lorenzo was just barely twenty-five when he began to work in the tannery in the sales network. In essence, this meant supervising the sales agents and regional retailers, providing services to important Italian clients, and canvassing the region for new clientele. In addition to these duties, Lorenzo was in charge of extending the presence of Chiorino in the international and sector trade fairs. In addition to the Fiera Campionaria in Milan and the Fiera del Levante in Bari and other general exhibitions, Chiorino took part in organized shows such as the quadrennial International Exhibition Textile Machinery (ITMA), which alternated between European cities: Hanover (1963), Basel (1967), Paris (1971) and then Milan, back to Hanover and Milan again.[77] Through the Association of Italian Textile Industry Machinery Manufacturers (ACIMIT), of which Chiorino was a member, the company could reach clientele and machinery manufacturers with a view to providing the "original equipment", namely, accessories that were mounted on the machines by the manufacturers. This marketing strategy, which it had used in the past and would continue to use in the future with additional new applications, had the dual advantage of providing the original equipment to the manufacturer and introducing itself to the end user as supplier of original parts. In addition to the ITMA fair, the end of the sixties and early seventies led to Chiorino's participation in other important fairs such as IPACK-IMA specialized in the packaging sector, SIMEI (International Winemaking and Bottling Machinery Show), and other food sector shows, in order to reach potential new markets.

In the second half of 1962, Gian Paolo, the first-born son of Fulvio, joined the family business. Just a few months younger than Lorenzo, Gian Paolo had attended the same scientific high school in Biella and then enrolled in the engineering school at the Polytechnic University of Turin, in Industrial Chemical Engineering, following his father's advice. After graduating *cum laude* and earning the prize for the best Italian graduate thesis written that year in that field, Gian Paolo began his career at Chiorino as soon as he completed his military service. But indirectly, or unofficially, his

[77] These shows began in 1951 and are still held today with the same four-year cycle.

involvement had begun even earlier. In the summer of 1959, Gian Paolo took part in an internship at the CIBA plant in Basel to expand his understanding of the chemistry of tanning agents. The following year, by request of his father who intended to develop Chromnylon, he led a study on the mechanics of belts. His brilliant academic career, his dedication and commitment and the degree in chemical engineering were all the ingredients that combined to form the great expectations of him and the contribution he would have made to the family business, which was involved in experimentation in the new materials that would have represented its future. Also, although it was never openly discussed, it made Gian Paolo the most appropriate candidate to take over top management of the company.

The role entrusted to him was technical director of new products and new machinery. Specifically, Gian Paolo had the responsibility of developing production of the first rubber products (ties and bump stops) and was the man behind these new products in the company. As mentioned earlier, Gian Paolo met and hired an independent consultant, Renato Maini from the Montecatini laboratories in Castellanza. With his help, Gian Paolo set up an experimental laboratory of the nascent rubber division and laid down production to the test phase and initial sale and marketing of the product. On the other hand, the technical and engineering skills of Gian Paolo were particularly useful in this stage, including for his experience in sales and marketing, especially where it involved further product development and perfecting, shaping its characteristics on the needs of the clientele, the secure technical competency that he demonstrated made dialogue easier and expedited the processes to adapt production. This was the reason for the many visits to the largest clientele in the national textile production districts, namely Biella and Prato.

Gian Paolo's involvement was relatively short-lived in the company. Just two years later, after bringing to conclusion the job assigned to him, Gian Paolo decided to leave the family business in 1964 to set up his own operation, assuming complete responsibility for it. He decided to take over the dyehouse operating in one of the family-owned properties. The owner sold him the business and the family offered to buy it, without involving any capital transactions, which had since remained undivided, but diversifying and allocating the ownership of the new business in equal portions. Gian Paolo offered his cousin Lorenzo the responsibility of handling the administrative aspects,

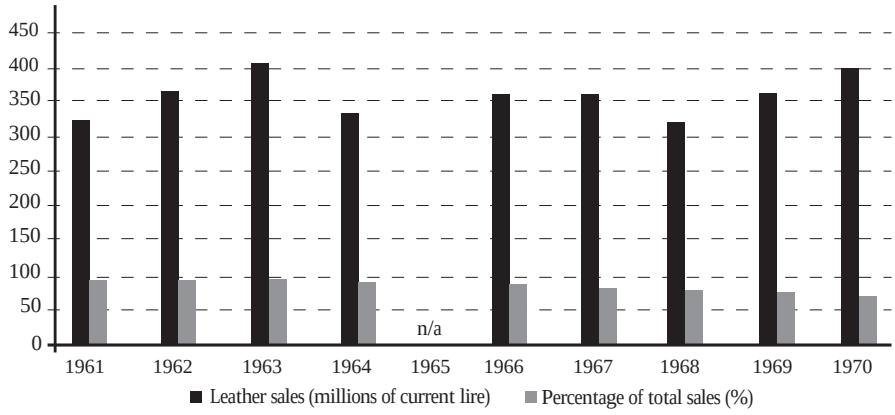
which Lorenzo performed part time, since his main job continued to be working in sales at the tannery. Despite this split, Gian Paolo provided his services to the company in the areas where he was most needed and continued to do so until 1970, when he made the final break. His relationship with the independent consultant continued as ever, every Saturday, in research in the rubber laboratory. Toward the end of the seventies, Gian Paolo personally supervised the introduction of production of aprons for carding machines, an important and complex industrial project that required a vision of not only the technical and chemical aspects of the production processes but also the engineering aspects. Until 1968, he was involved in servicing a small portion of the customer base that purchased the new rubber products, making monthly visits, accompanied in the later years by his brother, Luca, who was working toward his degree in Industrial Chemistry.

The third family member to join the company after Lorenzo and Gian Paolo was Stefano, fourth of Fulvio's children to be employed in the family business. Advised by his father to pursue a diploma in tanning techniques, which he earned in 1964 at the G. Baldracco Industrial Technical Institute of Turin,[78] immediately after graduation, Stefano attended a specialist course in Lyon, where an internationally famous tanning school was located. After spending six months there and then discharging his military service obligation, on his arrival at the tannery, Stefano had the responsibility of supervising operations in the tanning and saddlery departments, acquisition of raw hides and skins to transform into leather, and converting and sale of half-processed products (especially butts) and finished products. These were years when leather represented an even more important share of company sales (see Graphic 2), while representing a mature sector in Italy, increasingly populated by producers specialized in individual processing phases and in which a decline could be seen in the path in the coming future. These were years when a decrease in the demand from textiles led to a growing re-direction of production toward half-processed products intended for sporting saddlery (saddles and harness for riding) concurrently with a traditional (cushions for billiard tables) or relatively recent applications (straps for bicycle pedals). In relative terms, the percentage of sales realized

[78] This was the same national institute for the leather industry, albeit under another name and set of rules, where Fulvio studied in the twenties.

with leather products decreased very rapidly, while in absolute terms, it would have increased further until 1980, before steadily diminishing until it came to a complete halt.

Graphic 2. Percentage of production in leather on total sales, 1961-1970




The three remaining members of the new generation joined the company in 1969: Luca, Gregorio and Amedeo.

Like his older brother, Gian Paolo, Luca was also directed by his father to follow a predominantly technical grounding to make a contribution to the development of new synthetic materials, especially rubber. After finishing high school, he graduated from the University of Turin in 1969 in Industrial Chemistry and completed an internship at the National Rubber Institute of Paris. The training course added additional experience to Luca's skills which brought him closer to the level of Gian Paolo and he joined the family business in place of his brother. His job was to guide the rubber laboratory with the assistance of Renato Maini and handle development of the products that had entered or were about to enter production and which would have given the department a complete industrial dimension, fully reflected, as we have seen, in the breakdown of sales (see Table 5). These were cots (1966), aprons (1969), condenser rubbers for carding machines (1968), and rubber-coated transmission belts which represented an innovation compared to the fortunate precedent, Chromnylon.

Angelo's sons, Gregorio and Amedeo, would soon join the ranks of the business area, with different responsibilities. After earning a degree in Biella, Gregorio graduated in Business Economics from the Bocconi University in Milan. After several different professional and academic experiences, especially abroad, Gregorio joined the company with the responsibility to develop the customer base and commercial relations. His knowledge of foreign languages, especially German and English, made him an ideal candidate to bolster international relations. To this distinctive element, Gregorio added acute managerial and administrative skills from his studies and his personal sense of responsibility toward the general development of the company and expanding its production base and diversifying production toward sectors other than textiles. There were three areas in which Gregorio primarily focused on in the seventies: development of international business relationships, internal administration, and exploration of new areas of industrial activity, to ensure the company a prosperous and secure future.

Amedeo, Angelo and Margherita's last born, earned a diploma as a textiles expert at the Industrial Technical Institute of Biella and joined the tannery as soon as he completed his military service. His responsibilities in the company were mainly business related; Amedeo was primarily hired to replace the oldest salesman who was approaching retirement and to assist and lend support to his older brother, Lorenzo. In this position, Amedeo mainly handled sales of half-processed and finished products in leather and the new families of products that entered production in the sixties and were gradually phased in the following decade.

On the whole, the third generation received a practical background that extended and bolstered the company's legacy of skills and expertise, reinforcing two company areas that were crucially important priorities to facing, in the sixties, introduction of new product lines and even more, in the following decade, to guide the family business toward new horizons and new markets that could offer development opportunities and expansion of profitability.

The first of these areas, the sales area, played an important and

delicate role. In Biella since the 1800s, and among woolworkers in particular, this was considered a primary responsibility of the ownership and Lorenzo, as founder of the company, dedicated enormous energy to this. Clearly, even though the nature of business and the distribution of the entrepreneurial roles had changed over the century, upgrading the range of products at the tannery in the sixties placed special emphasis on this function. In the first place, the new products had to be introduced and promoted. New clients and established clientele who agreed to experiment on the new product wanted to be guided with more care and attention than the regular clientele. Especially when a product had not yet reached a stable level, it was important to have verification in order to make improvements and it was important to make sure that any problems were not abandoned with the buyer. Secondly, in the years of more intense acceleration of the technical progress and technological changes, a well-organized commercial function represented an excellent antenna, though naturally not the only one, to understanding the direction of the changes in the sector, understanding the needs of the market, and forming an awareness of the applications that were in demand or might be profitably developed. This aspect, namely identification of the changes in progress by developing business relationships, was so important that the business side and the technical side of the company very often worked together or overlapped, depending on needs: it happened that certain clientele would be attended to by the lead engineer of the third generation of Chiorino, Gian Paolo, even after he left for the dye-house, or in the seventies, Lorenzo might have had to travel with Giorgio Borri, a young, recently-hired chemical expert, destined to play a pivotal role at Chiorino.[79] Therefore, the drive to reposition the company from production for the textiles market to a variety of other departments began to be pursued with even more determination and the sales side was bolstered.

[79] Currently production manager, Giorgio Borri joined Chiorino in the early sixties. See the subsequent paragraphs.

Fulvio Chiorino on the occasion of bestowal of the merit star award to Giuseppe Garella for his 52 years of service. Turin, Chamber of Commerce, 9 May 1971.

The second area was the technical area. It is worth pointing out that the importance of the technical roles continued to be crucial in the sixties and seventies, for at least two main reasons. To begin with, the use of synthetic materials required constant research efforts to support production to improve the quality of the product and as a consequence of the processes to adjust the raw materials and semi finished industrial products used as a starting point in manufacturing. The same ability to partially replace rubber with plastic resins for the same article introduced a factor of relative technological instability that called for a sound technical oversight of the phases of experimentation, processing and final product testing and control. Secondly, the needs of the clientele, even the clientele in the traditional textiles market, were changing apace with the changes in the machinery used in production plants and these changes led the tannery to make frequent adjustments in its products and processes.

After Gian Paolo left the company, even though his chemical and engineering expertise was an important part of the complement of skills in the company and an especially valuable and necessary contribution for the technical and production development of the company in the sixties, he was not replaced by hiring an external expert. The second generation's approach to governing the company did not foresee a step that would have led to a process of "managerializing" operations. Compensating for the loss was the work of Luca, services provided by external consultants, the reduced contribution of Gian Paolo, and utilization of the most capable and dynamic members of the technical team already working for the company or recently hired. These became the basis of particularly important spaces for growth, pushed forward by the growing complexity of the production processes. A young electrical engineer of the name of Cesare Garella soon had the opportunity to shine and demonstrate his worth in the second half of the sixties, accruing the experience and skills for roles of increasing responsibility in the production process and the complexity of the industrial systems. Garella was hired in 1965 to guide development of the rubber division. Another young engineer, Giorgio Borri, was hired in 1973 to help steer the developments of conveyor belts and other applications in polyvinyl chloride and polyurethane, first holding positions in operations and later undertaking important managerial responsibilities.

*In search of a new production mission: the seventies*

The push to expand the production base, which in the sixties was experiencing a slow incubation, initially guided more by movements in the demand than by a precise plan but which gradually took a more decisive and determined direction toward diversification of the buying markets, accelerated considerably in this decade and prepared the company for a new and prolonged phase of growth. It was not merely a question of identifying a new product and new technologies. The range of internal skills was also completed, the commercial strategy redesigned and innovated, and the process of entrepreneurial succession brought to completion. From more than one aspect, these were years of intense trials, but also acute ability to capture and interpret the powerful stimuli from the market and convert them into positive and coherent industrial structures. Decisive in arriving at this result on a company level was the contribution of knowledge, energy and determination brought by the third generation.

The end of the sixties and early seventies imparted two important lessons. Growth of turnover in those years was particularly strong owing essentially to the sale of rubber products - which with aprons for carding machines and rubber cots and aprons for spinning had only then acquired complete industrial importance - and volumes of exports. Rubber and the international markets were two of the most promising growth areas, within reach of the technological and manufacturing capabilities of the company. Nevertheless, there was still the need to develop new applications that would use the current industrial organization and allow Chiorino to take full advantage of the potential capability and experience available in order to ensure the necessary expansion of profits. This meant finding new areas of alternative applications and buying outlets other than the textiles market; at that time, there was no lack of companies manufacturing rubber accessories, mainly foreign, with a production specialization similar to Chiorino and which had profitably diversified by beginning to serve other sectors.

An initial attempt at diversification was Chiorino's launch of production of *printing blankets*. A high value added product destined to the printing industry, these were a thin "sheets" of rubberized fabric on

which printers stamped the text to print and subsequently transferred it by contact onto paper. After consulting with experts on how to achieve this process, a part of the necessary machinery was acquired and set up in an industrial shed constructed in 1973, in view of the expansion of the business. As Chiorino proceeded with testing production, it emerged that blanket production presented much more complicated technical aspects and would require much greater investment that what the tannery initially had envisaged.

Production was halted in order to reflect on the next step while experimentation continued to concentrate on another field of application, transmission belts, which the company had been working on for some time. The objective in this case had originally been to make them in rubber and nylon, bonding two layers of rubberized fabric to a core of nylon, made of the same band previously used for Chromnylon. Subsequently, it meant adapting the rubberized belt to needs that were increasingly oriented toward transport and less to power transmission, which led the rubber facing to be replaced by other kinds of rubber, better for moving along a sliding surface and replacing the stretched nylon band with one or more nylon textiles.

The prospect of producing conveyor belts was part of these developments. The market showed promise. All the largest rubber companies whose core business was tire production – for example, Pirelli, Kleber, Dunlop and Continental – also manufactured conveyor belts. Their production was still concentrated predominantly on heavy duty belts, capable of supporting very heavy loads, supplied based on large orders and intended mainly for use in mines, quarries, steel mills and chemical plants. The dimension and industrial structure of these manufacturers - based on economies of scale and high volumes - dissuaded their interest in serving the fairly fragmented and diversified demand for light conveyor belts and belting, used by manufacturers of packaging machines, in the ceramics, paper, food, and other industries. In this area, flexible and specialized small- and medium-sized companies, accustomed to serving smaller customers and offering not only products but an array of assistance and maintenance services, enjoyed an undeniable comparative advantage. Around the mid-seventies, there were three companies in Europe - the Swiss Habasit, the German Siegling, and the Dutch Ammeraal - that together held a share greater than 50% of the market with high quality products.

Chiorino had a structure comparable to its competitors. Superior "flexible specialization";[80] its long tradition of manufacturing initially leather transmission belts, later leather and nylon, and finally rubber and nylon; the experience accrued in adhesives and joining techniques; the skills acquired in working with rubber; and the rewarding, deep-rooted relationship with its clientele on the national territory made the market for these new applications within its reach. This did not mean that the road would be an easy one to take, since it meant identifying the appropriate technologies and industrializing the manufacturing process, plus the products were susceptible to ongoing developments and what's more, had to be adequately introduced into the sales plan. It took several years before it reached a relatively stable settlement of the production. But following the same progress as the innovations introduced in the sixties, also in this case, development of products moved by a careful analysis of the markets, relied on cooperative relationships with the clientele and suppliers and created the space for professional growth of an in-house engineer, recently hired, motivated and intensely dedicated.

The first consulting contribution was made with an English company established in 1973 for endless making and sale of conveyor belts starting with a half-processed product. An expert in the product and the market, the owner provided important information on the production and became the first foreign customer of this product line. Another invaluable partnership, cultivated in a stable and long-standing relationship, was with a supplier of synthetic fabric. The greatest difficulties lay in defining the appropriate process technologies and in engineering production, in the changeover, namely, from the laboratory testing to the continuous flow of the production departments. The contribution of Giorgio Borri in this phase proved essential. He originally joined the company as an employee in the dye-house run by Gian Paolo, fresh from a diploma as a

[80] The term "flexible specialization" signifies a model of organizing operations that opposed the Ford style of mass production, characterized by moderately small-scale processing and versatile machinery, guided by continuous processes of innovation, oriented to meeting a demand for personalized products from increasingly diversified markets. The pace of production, organized by small batches or "small series", was often dictated directly by the flow of orders. This was generally a characteristic of small- and medium-sized companies. Cf. M. Piore and C. Sabel, *The second industrial divide. Possibilities for prosperity*, New York, Basic Books, 1984.

chemical technician, but was interested in changing jobs for something more befitting his aptitude and ambitions. After a few months with Gian Paolo, Lorenzo called him to take over as a sales agent. After joining Chiorino, however, while he continued to make frequent visits to the clientele, he ended up concentrating primarily on production. Borri, after coming up with a way to reconvert a part of the existing machinery to produce conveyor belts and after finding the most appropriate procedure to vulcanize the rubber parts, continued to dedicate most of his energies to development of these products. In time, especially starting in the second half of the seventies when it became clear that the commercial future of belts would not be in rubber but rather in polyvinyl chloride and polyurethane, he built his career as a technologist in these area of products as part of a division of the responsibilities, based on which research and development of rubber production was assigned to Luca.

Chiorino began production of conveyor belts in 1974 and the entire second half of that decade was spent developing the product. The range of belts was expanded in terms of size, load capacity, physical and chemical characteristics, colour and type of material paired with plastic resins, where the central junction was represented by the complicated technical transition from nylon to polyester. This also took place for belts.

While these developments changed the production make up of the business at the end of the seventies, it remained essentially characterized by a set of delicate balances between the old and the new, between high tech and traditional products, between a knowledge base tuned into the future and experience tied to a historic past that is still contemporary and, above all, economically important. To get an idea of it, let's briefly take a look at the division of the departments and the workforce employed in each one.

Processing hide and leather was concentrated in the "Tanning" and "Saddlery 2" departments, both of which were directly supervised by Stefano. Processing in the "Tanning" division included tannin tanning, chrome tanning, and production of sheepskin; the structure was not equipped with particularly up-to-date machinery with respect to the standards of the sector and accounted for little more than 22% of the total man-hours distributed by aggregate processing (for the proportion of sales, see the aggregate data given in Table 9). The second division (Saddlery 2) manufactured leather products, largely aprons, condenser

tapes for carding machines, and other items, with total man hours worked of one-twentieth of the total. The two departments together employed a total staff of 30 workers.

Other leather processing, generally characterized by a higher technological content, was carried out in the "Saddlery 1" department, which was supervised by Fulvio. Here, Chiorino produced leather and nylon belts, lug straps in synthetic materials and a series of technical articles for the textile industry and for sports. There were thirty-three employees in this department and the man-hours worked accounted for 26% of the total. The maintenance department also reported to this unit and employed four mechanical technicians.

The plastics department, coordinated by Lorenzo, employed eight workers essentially in the production of articles for the textile industry, accounting for a total of 6.7% of total man-hours.

Far and away the most important division in terms of contribution to turnover and absorption of the workforce were rubber processing and conveyor belt manufacturing. Both were generally supervised by Luca and employed a total of forty-six workers and accounted for 41% of the total man-hours. The rubber department, supervised by Cesare Garella, manufactured hoses, cots and aprons, condenser rubbers, rubbing aprons and a series of other articles to meet the internal needs of the other departments. The total man-hours absorbed amounted to more than 38% of the total. The belt department, supervised by Giorgio Borri, produced nylon and polyester conveyor belts.

Like the latter half of the fifties and throughout the sixties, the seventies were a period of expansion and enhancement of company knowledge, pursued by replicating the model of learning and introducing the innovations worked on previously. The elements of technological contiguity between the production processes inherent to manufacturing conveyor belts and belting and some rubber processing made it possible use a large part of the machinery that existed in the company since the last decade, making only minor necessary adjustments. In this way, even the investments could be self-financed and graduated in time. Only at the end of the seventies and start of the eighties, when the process and product technologies were developed and the company possessed the internal capabilities to develop them and the market potential had been tested, Chiorino began to

make sizeable specific investments to reinforce and streamline production organization of the new product lines. It was then that Chiorino expanded the belt manufacture and the rubber departments and acquired the specific machinery for production of PVC and polyurethane belts plus a new, more capable mixer for rubber and new spreading units.

Compared with the sixties, however, a very important difference lay in the fact that while the internal learning processes related to changes in the range of materials did not always translate into an appreciable impact on the performance of the company, in the seventies, it had immediate and clear effects on sales, but it led the entire company to embark on a new phase of development.

Table 8. Total turnover, 1971-1981 (values in mil.)

| | Current lire | lire 2004 |
|---|---|---|
| 1971 | 621 | 8.709 |
| 1972 | 843 | 11,194 |
| 1973 | 1,226 | 14,750 |
| 1974 | 1,795 | 18,080 |
| 1975 | 1,805 | 15,517 |
| 1976 | 2,789 | 20,576 |
| 1977 | 3,552 | 22,189 |
| 1978 | 4,128 | 22,933 |
| 1979 | 5,694 | 27,332 |
| 1980 | 7,171 | 28,413 |
| 1981 | 7,931 | 26,474 |

As shown in Table 8, between 1971 and 1980, the total amount of sales experienced an accentuated pace, growing by nearly twelve fold at current values and more than tripling at constant values. Most of this growth can be explained by the increase in production of conveyor belts and transmission belts, which showed extraordinarily rapid progress as it grew from scratch. The contribution to total turnover of this family of products increased from just over 3% in 1971 to more than 27% in 1980, and finally exceeding the contribution of leather in 1979. The performance of rubber products was second to conveyor belts and belting and in 1975, rubber products became the largest part of turnover, in the middle of the decade accounting for 40% of totals. Leather processing, on the other hand, hit a peak in absolute terms in 1974 and stabilized in the years after 1980, before embarking on a definitive decline that would have led to its complete divestment (see Table 9).

Table 9. Breakdown of sales, 1971-1980 (in millions of 2004 lire)

| | Leather | % | Rubber | % | Conveyor belts and belting | % | Total |
|---|---|---|---|---|---|---|---|
| 1971 | 5,329 | 61.19 | 2,258 | 25.93 | 280 | 3.22 | 8,709 |
| 1972 | 5,086 | 45.43 | 4,249 | 37.96 | 797 | 7.12 | 11,194 |
| 1973 | 6,376 | 43.23 | 5,606 | 38.01 | 1,444 | 9.79 | 14,750 |
| 1974 | 7,504 | 41.50 | 7,454 | 41.23 | 1,612 | 8.91 | 18,080 |
| 1975 | 6,250 | 40.28 | 6,258 | 40.33 | 1,461 | 9.42 | 15,517 |
| 1976 | 6,854 | 33.31 | 8,219 | 39.94 | 3,600 | 17.50 | 20,576 |
| 1977 | 7,028 | 31.67 | 9,108 | 41.05 | 4,023 | 18.13 | 22,189 |
| 1978 | 6,833 | 29.80 | 8,961 | 39.07 | 4,867 | 21.22 | 22,933 |
| 1979 | 6,811 | 24.92 | 10,507 | 38.44 | 7,695 | 28.15 | 27,332 |
| 1980 | 7,156 | 25.18 | 10,635 | 37.43 | 7,726 | 27.19 | 28,413 |

Alongside this trend in sales and its internal components, another important element in the seventies was the rise in exports, which augmented at a rate decidedly greater than total sales. The percentage of sales made on the foreign markets increased by 4.4 fold between 1971 and 1980, accounting for more than 45% of total sales (see Table 10). It is quite likely that what caused this positive result was the devaluation of the Italian lira against the major European currencies (including the German mark and the French franc) starting in 1973 and the consequent increases of competitiveness which the Italian industry enjoyed on the international markets. It is also probable that the difficulties encountered by the national economy after the oil crisis had made it easier to place products on the foreign markets than on the domestic market. However, the major reduction in sales in 1975 (the year when the Italian gross domestic product fell dramatically in real terms) shows how sensitive company sales were to the ups and downs of the business cycle. Nevertheless, it is also true that by moving the focus of its production toward conveyor belts, straps and other rubber products, the company increased its production specialization and the technological content of the product, making great strides to be considered one of the *specialized suppliers* that shaped the standing of Italy in the international division of labour in the course of the sixties.[81]

[81] The term *specialized supplier* was used for small- to medium-sized manufacturers characterized by high flexibility and high levels of specialization, focused on moderate to high-tech processing and innovation arising from the use of semi-finished goods produced upstream and from the research and innovation activity carried out by the companies. For more information on the role played by these manufacturers in defining the international model of specialization of Italy formed in the 1960s and destined to last for long after, see M. Gomellini, *Il commercio estero dell'Italia negli anni sessanta: specializzazione internazionale e tecnologia*, «Quaderni dell'Ufficio Ricerche storiche», Bank of Italy, n. 7, 2004.

The new calendering lines for rubber conveyor belts.

Table 10. Proportion of exports on total sales, 1971-1980 (millions of 2004 lire)

| | Exports | % | Total |
|---|---|---|---|
| 1971 | 2,959 | 33.98 | 8,709 |
| 1972 | 4,475 | 39.98 | 11,194 |
| 1973 | 5,318 | 36.05 | 14,750 |
| 1974 | 7,574 | 41.89 | 18,080 |
| 1975 | 5,949 | 38.34 | 15,517 |
| 1976 | 8,234 | 40.01 | 20,576 |
| 1977 | 9,233 | 41.61 | 22,189 |
| 1978 | 12,561 | 54.77 | 22,933 |
| 1979 | 13,123 | 48.02 | 27,332 |
| 1980 | 12,941 | 45.54 | 28,413 |

In any event, another quantity aspect described these years of growth as years when a new phase of development was sparked. The workforce employed, which had already shown signs of growing in the second half of the decade past, but without altering the substantial stability that characterized the company in the sixties, increased by nearly 40%, from 105 employees in 1971 to 146 in 1980. This change accompanied a very substantial growth in sales per employee, from nearly 83 million (expressed in 2004 lire) to just under 195 million, an undeniable sign that the company was using the new productions to reposition itself on the market at much higher added value (see Table 11).

Table 11. Workforce and sales per employee, 1971-1980 (millions of 2004 lire)

| | Total employees | Sales per employee |
|---|---|---|
| 1971 | 105 | 82.95 |
| 1972 | 104 | 107.63 |
| 1973 | 116 | 127.15 |
| 1974 | 134 | 134.93 |
| 1975 | 132 | 117.55 |
| 1976 | 136 | 151.30 |
| 1977 | 138 | 160.79 |
| 1978 | 150 | 152.89 |
| 1979 | 153 | 178.64 |
| 1980 | 146 | 194.61 |

At this point, it is important to note how the technological innovations were what provided the critical contributions essential to the significant volume and quality changes in the performance of the company described to this point. While we can clearly see the role played by the sales area through bolstered participation in numerous international fairs of the industrial machinery manufacturers sector, through a more decisive action at the current and potential clientele and through the frequent intervention of technical figures in visits to the clientele, at the end of the seventies, organization of product distribution was relatively behind and partly inadequate with respect to the production structure that was to be defined. Schematically, it was split into an Italian division and an international division and relied on a relatively low number of direct salesmen, employed by the company. The national market, supervised by Lorenzo and Amedeo, was handled by four sales agents. For the rest of the area, distribution was assigned to two general agents, representatives for the entire product assortment, and five exclusive agents dedicated to specific catalogue lines, each working in a defined territorial area. The domestic market absorbed a very large portion of the leather objects, technical articles in rubber for the textiles industry, conveyor belts and belting. The international area, supervised by Gregorio and made up primarily of buyers of the most recent and advanced product lines, relied on forty independent agents that served chiefly final customers and wholesale distributors in more than fifty countries. The penetration of the highest value added demand segments, in Italy and internationally, had important consequences for the sales organization, since it put the company in more direct contact with competitors that had an established presence on the market, which enjoyed the advantages of a sound company structure, a more solid grasp of the product and process technologies and a broader organization of distribution. One of the strategies implemented to compete in these market conditions was expansion of the product line, but this tactic also required the direct and indirect vendors to have a high level of technical training, good introductions and could be appropriately motivated to promote a product that may not have had a high unit value. At the end of the decade, this situation spawned two new factors that would consider-

1. Continuous vulcanization line for rubberized rolls in an image from the 1970s.
2. Winder of a PVC belt spreader line.

ably influence the structure of the distribution network in the eighties and nineties. Chiorino initially noticed that it might have been more profitable to internalize the intermediate and most important hubs of distribution, for the reasons mentioned above as well as in order to enjoy a more vast and systematic flow to the direction of information useful to the production area, in view of possible improvements or application developments. Furthermore, direct commercial structures could have been set up to provide the clientele with additional assistance and maintenance services. In the businesses served by Chiorino, from the engineering to the food sector, breakage of a conveyor belt or emergence of operating problems in automatic systems could lead to a halt in a segment of the production process with the risk of generating economically debilitating losses. Very often, the ability to make timely and effective repairs or replace parts could be the deciding factor in maintaining a customer or acquiring a new one.

Realization that it would be opportune to change the arrangement of distribution contributed a second important fact, namely the experiment made in 1977 with the purchase of the controlling share in Polymax Belting Ltd. in Pudsey, Great Britain, a conveyor and transmission belt distributor on the British market and potentially, the entire Commonwealth. In 1973-1974, the owner of the company had helped Chiorino develop its own belts and after this, had become an important buyer of half-processed products; it completed the final phases of processing which would adapt the half-processed product to the specific needs of the customer and then sell them. The close relationships between Biella and the British company back in 1975 had evolved into a form of capital shareholding. Acquisition of the entire stake in the company, even though it was an isolated episode in the seventies, marked the beginning of another learning process, organizational and managerial this time, which in the last twenty years of the century led to construction of an extensive network of shareholdings in foreign companies.

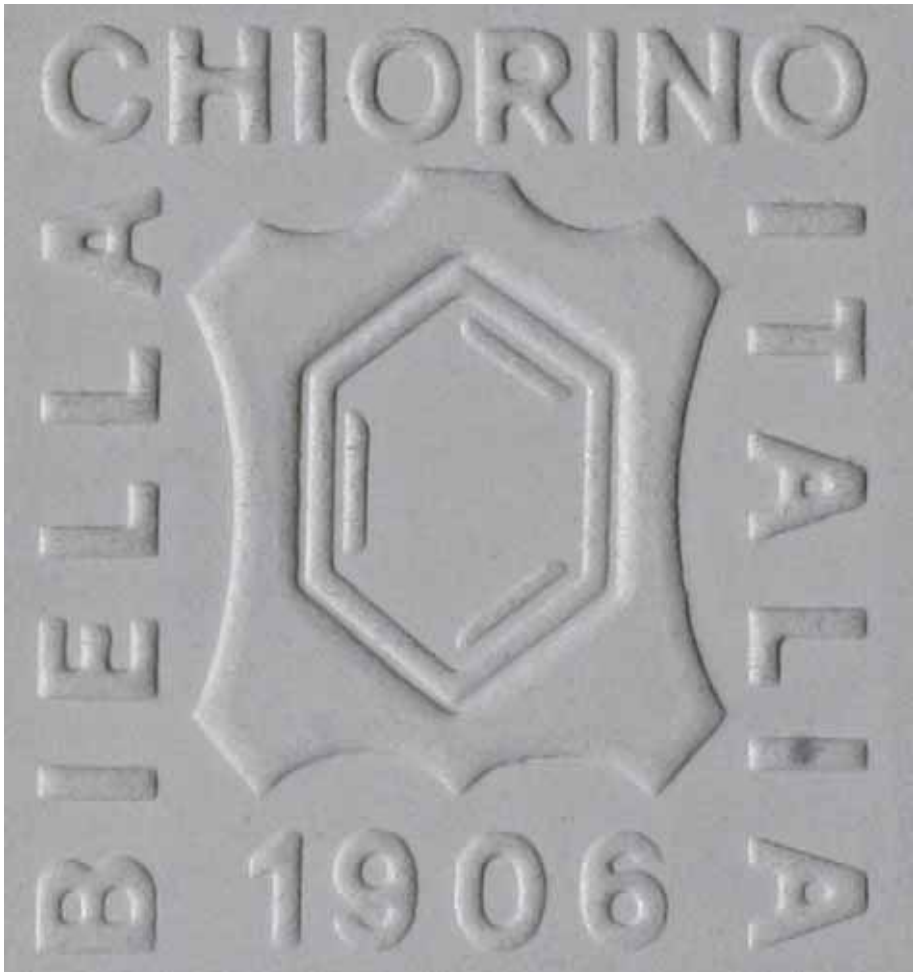
As mentioned at the start of this paragraph, the seventies were characterized not only by the technological innovations and commer-

cial organization, but also by completion of the management succession. The crucial and complicated process, as in any family business, proceeded in a largely unanticipated way. The inability to count on Gian Paolo and his exceptional technical skills, great acumen and sparkling personality had swept away the plans and the tacit agreement of Fulvio and Angelo. Decisions on the future arrangement of company governance and on what member (or members) of the third generation were most suitable to taking over the general responsibility of the business had been left vague. Certainly, for the purposes of the succession, the change of the company status into a joint-stock company decided in 1975 represented an important step,[82] laying the basis for creation of shared areas of definition of the strategic paths and delegation of individual responsibilities of management. Nevertheless, at least initially, the distribution of responsibilities within the board of directors, whose members included Fulvio and Angelo, Lorenzo, Gian Paolo, Luca and Gregorio,[83] did not facilitate discussion on the internal roles, resulting in the fact that the candidate to succeed was entrusted to a "field selection" process. While this fact may appear to be a weakness, a gap in the succession planning, greatly exposing the company to a certain degree of risk, if viewed in retrospect in light of the substantial development of the next twenty years, it was found to be an effective route toward identification of the most appropriate candidate. While perhaps this method made it more difficult for young people to insert themselves into a context in which the advancing age of the second generation weakened its ability to set development strategies of the company and in which the uncertainty of the technological and product decisions generated a climate of uncertainty, at the same time, freed up the forces of competition, the "field selection" method created the conditions and increased the space to shape and bring to the surface personal talents and aptitudes. And it did not take long before Gregorio

[82] On that occasion, the company name became simply «Chiorino S.p.A.».

[83] Fulvio acted as Chairman of the board pursuant to transformation of the company into a joint-stock company, while Angelo was Vice-Chairman and Lorenzo, Gian Paolo, Luca and Gregorio were managing directors.

Chiorino demonstrated to have a larger dose than his brothers and cousins of the talents, abilities, and willingness to undertake general responsibilities that made him a natural candidate to assume the helm of the company, something that happened officially at the end of 1982 with appointment as chairman and managing director of Chiorino S.p.A.




The company logo in the sixties and seventies. Pictured are the materials processed by the company, rendered symbolically: leather, represented by a hide, and synthetic products represented by a molecular bond.

Spreading lines for conveyor belts.

# 3.
# Biella, Europe and the world.
# A new cycle of development and modernization, 1983-2005

As we discussed in the previous chapter, the seventies were a period of constructive labour, replete with new things to learn and during which the company successfully faced and resolved two essential questions for the continuity of the company: repositioning itself on markets other than textiles, with good prospects of future growth and higher added value, pursuant to introduction of a range of products with higher technology and completion of the generational transition with assignment of the entrepreneurial leadership to Gregorio Chiorino. A substantial cycle of investments between 1979 and the early eighties approved conclusion of the most acute phase of the transition, rationalizing the production arrangement and laying the bases for a new stage of development. The perception of the previous decade regarding commercial organization and the potential of the foreign markets could be used in their capacity in a strategy of unitary and coherent growth. As the two decades continued, Chiorino underwent another transformation, developing into a multinational group, today present in eight European countries, United States, Asia and Australia, with more than six hundred employees and total sales of more than 85 million euro, one of the world leaders in production of conveyor belts and transmission belts, significantly up to date from a managerial perspective, sensitive to issues of quality, sustainability of environmental impact and communication. With respect to the depth of this transformation, there was relatively less interest in the internal organizational structure and governance. Nevertheless, in this area, the generational change was accompanied by the affirmation of a different sensitivity and more openness, leading the company structure toward definition of a more developed and more clear and organic identification of roles and functions, which would lead to gains in efficiency in the internal processes and, lastly, to increases in the capabilities of innovation, adaptation, and initiative towards the market.

*Establishing and developing new product lines*

In the seventies, Chiorino's decision to focus on conveyor and transmission belts as products that would be the basis for future development of the company turned out to be a very strategic one. Still today, in fact, these products have made Chiorino one of the leading manufacturers in the world and have given the company a very recognizable image. Alongside the conveyor and transmission belts, another family of products, heir to the innovations introduced in the sixties and still a source of a large part of sales, are the rubber products. In the thirty years that have passed, the efforts in production and research and development activities focused largely on perfecting the product and appropriate technologies, both in the products and in the processes. In general terms, the main anomalies in this period were represented by the spreading and laminating units purchased between 1980 and 1981 for production of conveyor belts in plastic resin through a spreading procedure, and the calendering units introduced in the second half of the 1990s. The first intervention gave the company a coherent production arrangement which, up to that time had been conducted by adapting and using machinery purchased for other purposes, laying the bases for complete use of all the technological expertise on belts accrued in the seventies and extending them further. In the second case, Chiorino introduced a different technology, calendering, that was useful for production of the same type of products with procedures and more sophisticated results that could reinforce the production flexibility and expand the range of applications.

To better understand the developments taking place in these years and to form an idea of the complexity underlying the manufacturing processes, we should make some specifications. The first concerns the concept of "product" and the distinction between "product" and "application" in a highly specialized production sphere in which Chiorino has been since its foundation. Contrary to what usually happens in standard production, the word "product" has a relatively generic meaning until a specific application is found for it, namely a certain use, on a certain machine, for processing certain objects with certain substances and in areas with precise chemical and physical characteristics. The set of these

specific applications are what determine if our conveyor belt, for example, is made with a textile core of a certain material; if it is covered in rubber or polyurethane; if it is smooth or has a high friction surface; if it is suitable to withstand high temperatures or the action of corrosive acids and oils; if it is contoured or not. Nor do the varied needs of customers from a large number of industrial sectors always translate into minor alterations on the product, partly because, keeping with the area of the example given above, substituting one material for another in manufacturing a belt is very often susceptible to important implications on the pairing processes. These have regularly driven the work of the research and experimentation laboratories of the company and have frequently stimulated the study and adoption of changes or temporary adjustments of the manufacturing processes, each time, generating new technical learning and, possibly, making gradual improvements.

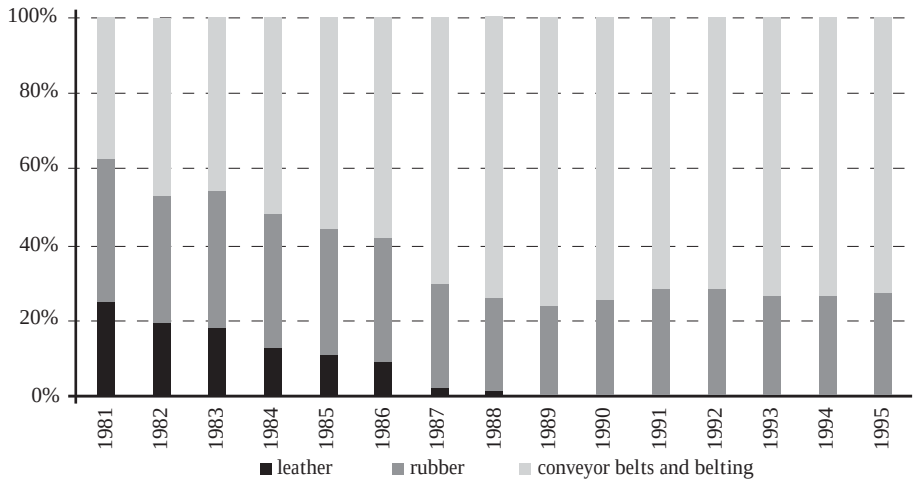
A second but no less important aspect and which is also ingrained in the essence of a company with "flexible specialization" is the joint presence in the company of production arrangements with diverse production and process technologies, that can differentiate and shape the offer in order to satisfy a changing and fragmented demand at the least possible costs. This is a characteristic with important implications not only for the production arrangements, but also for organizational and managerial aspects.

In light of these considerations, we can better understand how expansion of the product assortment in the company catalogue during the eighties and nineties had to be supported by a continuous process of learning and accumulation of skills, from the technical area to organization and management, which took place in parallel with the evolution of the intermediate chemical processes used as raw materials and the applications needs of the market.

Before mentioning the products, however, let's take a broader look at the complete trajectory of the production arrangements. At the end of the seventies, the company was still producing objects in leather beginning with raw hides; in the eighties, the company began to progressively divest this line of business, first by eliminating the wet processes, namely tanning, a segment that was labour-intensive and yielded fairly low

added value, and later, in the second half of the decade, by eliminating the leather product department, also known as “Saddlery 2”. Through a gradual but concurrent process, the department for straps and belts rose in importance, as its contribution to total revenues was important starting in 1982 (see Graphic 3). A distinctive characteristic in these transformations, which was preserved and represents a long period that brings together Chiorino with the old tannery, are the “complete production cycle” operations, which today consists of treating plastic materials in granules or powder, forming “rolls” of the material, and final endless making of conveyor and transmission belts in endless belts ready for installation.

Graphic 3. Composition of sales, 1981-1995 (percentage data)




Finally, coming to the products, the most relevant elements of the Chiorino evolution relate to the respective arrangement of technology and expansion of the product assortment. With reference to conveyor belts, the external rubber coating which had originally been applied made way for plastic materials (PVC and polyurethane) that were generally more versatile in terms of the applications and therefore, more in demand. In terms of formulation, they also had the advantage of presenting fewer problems

or none at all and, in the case of PVC, were less expensive. This cost factor was what had the most influence on production decisions, in response to a clear market preference. For its part, the high unit price of polyurethane caused it to be used mainly for applications that had to have certain chemical characteristics (non-toxicity in particular) but in the nineties, it gained growing shares of the market for its intrinsic qualities, its additional application versatility (due to the growing use of calendering procedures), and minimum environmental impact. Chiorino soon introduced silicone as an additional type of coating to join the range. The variety of supporting textiles, namely the core structure of the product, also increased significantly. Polyamide (nylon) was joined by polyester, aramidic fibre and cotton, each one bringing its own specific processing technologies. In addition to spreading - which had been the main manufacturing process used for fifteen years for conveyor belts - the company developed and perfected calendering and laminating. Chiorino made major efforts to meet a diversity of needs in terms of chemical and physical qualities, including conductivity, compliance with food industry standards and regulations, resistance to chemical substances, physical and mechanical warping, ability to sustain high temperatures, ability to absorb noise, and flame-retardant and smoke-proof characteristics.

The growing automation of the production systems set up beginning in the eighties in numerous industrial areas continuously increased demand for conveyor belts and the advancement of products through the various phases of the processing cycle, with the result that today, the range of sectors Chiorino serves includes a large variety of fields. Medium and large-scale organized retail, food industry (including milling, bread and bakery products, confectionary, beverages, meat processing, fruit and vegetable packaging), the packaging industry, paper mills, box folding industry, graphic arts and printing, mechanics, steel working and the car industry, textiles, tanning, ceramics, bricks and glass, sports equipment, handling and logistics, post office, and airport baggage handling.

A similar chain of events on diversification and expansion of the range happened for transmission belts, which Chiorino produces today with a polyamide nylon, polyester and aramidic fibre core and external coatings in several types of polyurethane and elastomers. In addition to

the flat belts, other articles for power transmission included round belts and a variety of aprons. While the uses are naturally diverse, the sectors that use these products primarily coincide with the sectors that also use conveyor belts.

In recent years, research and development concentrated on the study and implementation of new applications, which increasingly used polyurethane resins, intended for use in maritime applications and protection from damage by smoke and chemical and bacteriological agents, internal linings and external coatings.

Many of the new applications in polyurethane were implemented thanks to skills and expertise developed in production of especially thin calendered films.[84] (Ecofilm Elastar, registered trademark) whose potential for development is extremely vast and includes clothing, inflatable tanks, medical and paramedical areas, footwear, leather, and furniture, and has largely been left unexploited industrially.

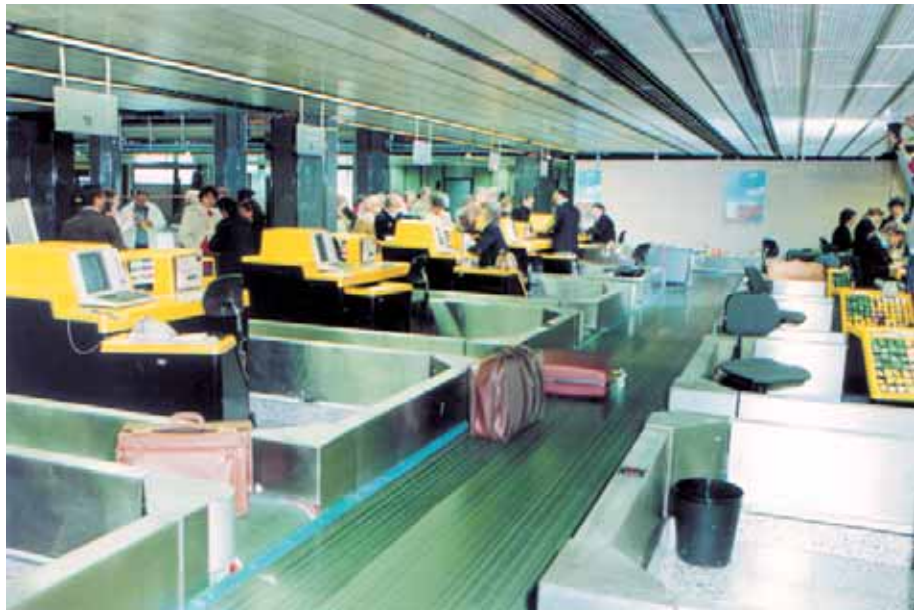
An important recognition of the interest paid to research in the field of applications conducted in the company laboratories was the grant bestowed to Chiorino by the Ministry of University and Scientific Research in 2001.

### *Toward new organizational features*

One of the most visible aspects of development of the company in the last two decades of the 20th century was the increase in workforce employed. At the end of 2004, the Group employed 620 staff members, nearly four times the 160 employees working for Chiorino in 1980. Looking only at the direct employees of Chiorino S.p.A. in the same period of time, the staff numbers increased from 139 to 299, hence, more than doubled. These substantial changes were accompanied by a relative revolution in the organizational structure of the company, accelerating a process that had shown signs of a primarily qualitative nature in the second half of the sixties and which received a decisive impetus in the seventies.

[84] Thicknesses varied from 30 microns to 4 mm.

Examples of conveyor belt uses.
1. biscuit production lines
2. treadmill




Examples of conveyor belt uses.
1. airport check in and luggage sorter
2. supermarket check out station

Once again, the innovations introduced to the production processes caused by developments in conveyor belts were what shaped the physiognomy of this transformation, whose traits we will attempt to describe here.

From a chronological perspective, the most substantial increases in the workforce employed were verified in the second half of the eighties and again in the nineties (see Table 12), substantially matching the main cycles of expansion of the national and international demand and, similarly, of company revenues. Between 1985 and 1989, the increase was 34% (from 153 to 205) while it was 33% between 1993 and 1997 (from 218 to 290). Differentiating between line workers and clerical workers, we find that in the twenty-five years between 1980 and 2004, the former

Table 12. Breakdown of the workforce, 1981-2004

| | Line workers | | Clerical workers | | Total | |
|---|---|---|---|---|---|---|
| | | % change | | % change | | % change |
| 1981 | 110 | -6.8 | 29 | 3.6 | 139 | -4.8 |
| 1982 | 106 | -3.6 | 30 | 3.4 | 136 | -2.2 |
| 1983 | 111 | 4.7 | 34 | 13.3 | 145 | 6.6 |
| 1984 | 119 | 7.2 | 39 | 14.7 | 158 | 9.0 |
| 1985 | 113 | -5.0 | 40 | 2.6 | 153 | -3.2 |
| 1986 | 120 | 6.2 | 42 | 5.0 | 162 | 5.9 |
| 1987 | 123 | 2.5 | 39 | -7.1 | 162 | 0.0 |
| 1988 | 128 | 4.1 | 61 | 56.4 | 189 | 16.7 |
| 1989 | 145 | 13.3 | 60 | -1.6 | 205 | 8.5 |
| 1990 | 152 | 4.8 | 56 | -6.7 | 208 | 1.5 |
| 1991 | 155 | 2.0 | 59 | 5.4 | 214 | 2.9 |
| 1992 | 153 | -1.3 | 63 | 6.8 | 216 | 0.9 |
| 1993 | 154 | 0.7 | 64 | 1.6 | 218 | 0.9 |
| 1994 | 167 | 8.4 | 71 | 10.9 | 238 | 9.2 |
| 1995 | 188 | 12.6 | 72 | 1.4 | 260 | 9.2 |
| 1996 | 190 | 1.1 | 76 | 5.6 | 266 | 2.3 |
| 1997 | 206 | 8.4 | 84 | 10.5 | 290 | 9.0 |
| 1998 | 196 | -4.9 | 85 | 1.2 | 281 | -3.1 |
| 1999 | 192 | -2.0 | 91 | 7.1 | 283 | 0.7 |
| 2000 | 207 | 7.8 | 95 | 4.4 | 302 | 6.7 |
| 2001 | 208 | 0.5 | 99 | 4.2 | 307 | 1.7 |
| 2002 | 201 | -3.4 | 99 | 0.0 | 300 | -2.3 |
| 2003 | 199 | -1.0 | 99 | 0.0 | 298 | -0.7 |
| 2004 | 201 | 1.0 | 98 | -1.0 | 299 | 0.3 |

increased by 70% against a 250% increase in the latter, giving rise to a significant difference which, while attenuated on a group level, represented an unequivocal indicator of the transformation of the internal structures.

This clearly differentiated trend influenced overall organization in numeric terms as well as in terms of quality, complicating the structure inherited from the sixties and seventies, which in fact virtually replicated the model of the immediate post-war period. This somewhat outdated model was based essentially on a very short hierarchical chain: at the top were the owners, responsible for guiding the business; below them were the exponents of the younger generation holding executive offices; then came the department heads, essentially from the ranks of the workers selected from within the company; and below them were the labourers, each with their own credentials and qualifications. In the sixties and seventies, the main change involved the substitution of department heads with individuals with more technical expertise, having formal professional education and hired especially to cover roles of responsibility. These experts were Silvio Peraldo, mechanical expert, head of the "Saddlery 2" department; Cesare Garella, head of the rubber processing department; and Giorgio Borri, head of the conveyor belts and belting department. As mentioned earlier, Borri was originally hired to join Chiorino's sales department. At that time, the department head played an important role in factory organization. He had all the most immediate responsibilities relating to production management, supervised the state of repair of the machinery, evaluated appropriate changes, studied the equipment, oversaw personnel, and promoted employee's careers within the company, took care of organization of labour and distribution of responsibilities.

Introduction of conveyor belts revolutionized this arrangement starting with the simple fact that the main segment of production took place on machines that formed rolls through a continuous process. Labour needs could be reduced and personnel were shifted toward endless making phases. On the whole, need for manpower decreased.[85] What's more, as

[85] Since final processing phases were allocated essentially to the peripheral units, mainly foreign and constituted into companies legally independent from Chiorino S.p.A., this partly explains the higher number of clerical workers over labourers based on the data pertaining to Chiorino S.p.A.

rubber and plastic resin production acquired more importance over leather, focused predominantly on the textile sector and relatively labour-intensive, the workforce concurrently shrunk. However, in another and more significant way, the growing importance of articles based on the new materials influenced Chiorino's production structure and organization. These new products gave the laboratory an essential role. Over several years at Chiorino, it became the focus of the functional layout of the production process. Here, Chiorino conducted research on the applications and manufactured and tested experimental prototype until technicians achieved reasonable conformity with the requirements established by the quality standards of the market or specific needs of the customer. After completing the industrial processing cycle, the products were sent back to the laboratory for quality checks. Therefore, Chiorino established a clearer logical demarcation between the production function and the research and development and quality control functions assigned to the laboratory. As time went by, the laboratory began to play a growing role in the daily running of the factory and company organizational charts.

As we mentioned earlier, it would take some time before this result was reached. Initially, in the first company laboratory organized by Fulvio for research finalized at producing plastic pickers in the fifties, the only person working there was Nino Serratrice, an independent consultant with a degree in chemistry. The same had happened when rubber was being introduced, when the laboratory set up by Gian Paolo with the contribution of another independent consultant operated only a few days a week and without other personnel. The situation changed at the end of the sixties when Luca took over management of the rubber department and later still in the seventies, when development of the first conveyor belts and belting compelled Chiorino to make major changes in experimentation. However, the rubber laboratory was completely restructured only later in the eighties when the company was certain that the costs could be wholly amortized and when it was considered a priority to invest in research and development to maintain the market positions acquired toward foreign competitors that were much more structured and had at least a decade of advantage. At that point, the rubber laboratory was substantially expanded and Chiorino hired specialized personnel to work

there. A similar result was reached halfway through the nineties with the comprehensive restructuring of the existing plastics laboratory, created in the early eighties, now fitted with highly sophisticated machinery to study the rheological behaviour of the material, established with the technical consulting of a sector specialist, also with its own stable staff guided by Giorgio Borri. At this point, the situation was mature enough to begin to view production as a "dependent variable", subordinate to design both in real actions and in changes to the organizational layouts.

These innovations in the production organization rooted in technological change clearly had an impact on the evolution and make up of the workforce, reducing the number of line workers and bolstering the administrative staff. But there was also another modification induced by that change that worked in the same direction. The new assortment of articles expanded further until it attained a much wider scope than what the catalogue had offered in the past and the diversification of the range and the markets served and the increasing product specialization caused the once-consolidated clientele to become fragmented. The customer base multiplied apace with the rise in revenues, a rise that was substantial in the seventies and continued without interruption in the two subsequent decades.[86] One statistic, still quite contemporary, gives an idea of the relevance of the trend that had begun to develop: in 2004, the Chiorino Group issued a total of more than 76,700 invoices for just under 216,600 lines of order. It goes without saying that management of such a high number of invoices required a good deal of administrative and technical personnel responsible for handling orders and fulfilling the respective correspondence.

The gradual structuring and bolstering of the middle ranks of the company hierarchy closest to the production side, a process that took place quite a bit before finding a coherent translation in an official organizational chart, was accompanied by an appropriate restructuring of the sales network, largely concurrent with the transformation of the company into

[86] The performance of sales in the eighties and nineties is described in the next paragraph.

a multinational group. While we will discuss this further in the next paragraph, it is important to underline a process of rationalization of the general architecture of production underlying the developments in the sales organization. It alludes to an increasingly more marked logistical and functional distinction between preparation of the half-processed product, rolls of conveyor belts and belting, and the final phases of processing consisting in endless making. Although it represents a relatively light segment of production because it is more labour-intensive than other processes necessitating capital-intensive machinery, endless making consists of a set of one or more processes that include cutting, splitting, skiving, punching, pressing, trimming, joining and with the addition of edges, borders and guides. It is crucial since it focuses on the "personalization" phases of the product, based on the clientele's specific requirements. Furthermore, since it employs specialized workers, it is contiguous and preliminary to distribution of the installation and post-sales assistance services which make up an essential component of the commercial strategy. To use an effective metaphor coined by the ownership, endless making is like the work of a tailor who crafts a bespoke suit for a customer using fabric made in Biella in the earlier phases of processing. During the eighties and nineties, parallel to creation of the Group, Chiorino established a division of labour between the Biella factory, which produced the half-processed products, and the peripheral network in the rest of Italy and abroad, based on which the endless making procedures are delegated to this division. In keeping with this general architecture is the new factory in Biella Sud, whose construction was completed in 2001 and in which the product endless making and personalization jobs are carried out.

In addition, Chiorino set up a specific company division, *engineering*, to design and outsource to specialized suppliers construction of all the equipment necessary to perform the final phases of processing. Use of this "proprietary" instrumentation, supplied to all affiliate companies, places every "internal" hub of the international distribution network in the condition to operate in the same way and ensures an identical standard of product quality to customers in every part of the world. It is worth noting that these forms of restructuring and standardization have positive repercussions on many organizational aspects, facilitate management of

Presses for conveyor belts endless making.

the warehouses and assistance services, and make it possible to adopt unitary and uniform marketing policies across the Group.

Another example of Chiorino's desire to upgrade and modernize its internal structures and able to significantly influence overall organization was implementation of an integrated ERP management information system, designed to connect together all the companies of the Group, initiated in 2002.

Going back to the organizational chart, let's lend special attention to the relationship that connected it to the governance structure. As in many family-run businesses, the ownership of Chiorino historically assumed most of the responsibility for management, from entrepreneurial decisions regarding definition of strategies to management of operations. While the relative simplicity and low level of complexity of the production structure in the fifties allowed Chiorino to be idle in delegating functions that the first and second generation of management were able to absolve with no need for external assistance, the phase of transformation inaugurated in the sixties changed this situation. The road to innovation and technological change compelled the company to acquire new and more specialized knowledge, multiplied and complicated the internal processes by exerting pressure on the family members, especially as the engineering skills began to lessen. While the second generation, considering its background and training, had a hard time imagining managerial roles being assigned to people from outside the family, the third generation had fewer prejudices and opened up new paths to the professional growth of people[87] who got their start in the company and were given increasingly broader responsibilities right up to the executive ranks. This took place for a certain amount of time in a relatively informal way and in the context of fairly basic structures, partly because most of the energy was focused on objectives given priority over internal organizational charts. Personal traits of humility, dedication, and versatility of people compensated for the absence of these. At the peak of a long season of growth and at a time when the fourth generation is entering the company scene, how-

[87] This specifically refers to Cesare Garella and Giorgio Borri.

ever, the situation is in the process of change and management attention is concentrated on the design of an appropriately developed internal structure, governed by the principle of delegation and identification of responsibility, based on an evaluation of the specific skills. A design that wholly embraces all the company functions, finalized at pursuing more efficiency in the internal processes and, finally, reinforcing the ability of innovation, adaptation and market proposal.

*From internationalization to multinationalization*

The transformation of the company into a multinational group that began in the sixties and was brought to conclusion in the eighties and nineties is surely one of the trends most characteristic of the entrepreneurial strategy of this period. The company's ability to penetrate the foreign markets and work with coordinated offices in many countries was decisive to the vast potential that was opened up by the product innovations and sector reference market introduced in the seventies. Repositioning on more technological and more specialized segments of the market and on increasingly niche product markets, made it possible and necessary for more diversification of the geographic markets.

After the seventies, this was the underlying context when advancements in the processes of regional integration, vast structural changes taking place in the geography of the international economy, and the second trend of globalization of the 20th century were built on foundations with varied depth with respect to the events of the company. All these factors contributed, with more or less intensity depending on the times and circumstances, to altering the picture of constraints, challenges and opportunities in which Chiorino operated. This was marked first and foremost by the extension in 1972 of the European free trade area to the countries of the European Free Trade Association,[88] the gradual extension of the European Union, with the addition of Great Britain, Ireland and

[88] These included Great Britain, Sweden, Norway, Denmark, Switzerland, Austria and Portugal.

Denmark (1973), Greece (1981), and Spain and Portugal (1986), to the Europe of fifteen states (1995) and twenty-five member E.U. (2004). Secondly, there was the great importance that the Asian continent was gaining on the world economic scene with the emergence of the South East economies of the seventies and eighties, and more recently China and India. Even more outstanding is the context favourable to multinational expansion determined in the nineties by liberalization of commercial trade through multilateral agreements, from deregulation of capital flows, and the gradual integration of the financial markets, events and developments that, promoted by the wave of technological innovations realized after the eighties and especially the innovations related to IT and telecommunications, have promoted enormous flows of direct foreign investment and have represented an extraordinary stimulus to the growth of production and world trade in the past decade.

For Chiorino, expansion of the percentage of sales made abroad had become a real and appreciable entity starting in the second half of the sixties; by the seventies, it had grown at an extraordinarily fast pace until stabilizing at 50% of the value of sales. This acceleration, bolstered by a compound growth rate of 17.81% annually,[89] had marked a great discrepancy compared with the past. It had happened in the wake of growth of Italian industrial exports, which in the decade from 1971-1980 had progressed at a compound rate of 6.97%,[90] benefiting from the competitive advantages of the economic policies adopted by the government in the turbulent international context, disrupted by the end of the fixed exchange rate system and the first oil crisis. The currency exchange policy implemented by the monetary authorities as the lira began to fluctuate in the first months of 1973 had permitted domestic manufacturers to retain moderate levels of competition even against the significant rise in the cost of labour stemming from the onset of union battles starting in 1969, the increase in the costs of raw

[89] This refers to values in 2004 lire.

[90] Data extracted from OECD statistics for the period from 1960-1998.

materials, and the rise in the cost of money. More specifically, the pursuit of a more stable exchange rate for the Italian lira against the American dollar and the German mark (also known as "differentiated devaluation") had helped make imports easier, paid predominantly in the American currency, and exports more competitive, most of which directed toward the European markets.[91]

In the last twenty years of the century, the company's campaign to augment sales abroad continued onward, although at a slower rhythm. As Table 13 shows, it was still the strongest and most dynamic component of turnover in the eighties, with a compound growth rate of 11.5% against 6.95% of total sales and just 1.1% of sales in Italy. In the 1990s, sales on the foreign markets were 2.66 times the value in 1981 and exceeded two-thirds of the total, a level at which they would stabilize in the subsequent decade.[92]

Table 13. Proportion of exports on total sales, 1981-1990 (millions of 2004 lire)

| | Exports | % annual change | % of sales | Total sales |
|---|---|---|---|---|
| 1981 | 12,351 | -4.56 | 46.65 | 26,474 |
| 1982 | 10,016 | -18.90 | 37.59 | 26,645 |
| 1983 | 13,012 | 29.91 | 53.28 | 24,420 |
| 1984 | 17,316 | 33.07 | 56.10 | 30,865 |
| 1985 | 18,257 | 5.44 | 56.04 | 32,576 |
| 1986 | 22,454 | 22.99 | 61.11 | 36,744 |
| 1987 | 24,382 | 8.59 | 64.15 | 38,007 |
| 1988 | 27,264 | 11.82 | 64.99 | 41,951 |
| 1989 | 29,985 | 9.98 | 66.33 | 45,208 |
| 1990 | 32,906 | 9.74 | 67.87 | 48,485 |

In the course of the nineties (see Table 14), the relative performance of the two sales components inverted and Italian sales grew overall at a pace (6.65% compound) of just over foreign sales (6.32%). If we split the decade into two halves, however, we notice that it was primarily in the

[91] See A. Graziani, *Lo sviluppo dell'economia italiana dalla ricostruzione alla moneta europea*, Turin, Bollati Boringhieri, 1998, pp. 123-125.

[92] All the data refer to values expressed in 2004 lire.

five years 1991-1995 that the domestic market showed a higher absorption than the foreign market (14.63% against 9.97%) to pull back in 1996-2000 on lower and decidedly more limited growth rates (2.5% against 8.75%).

Table 14. Proportion of exports on total sales, 1991-2000 (millions of 2004 lire)

| | Exports | % annual change | % of sales | Total sales |
|---|---|---|---|---|
| 1991 | 33,492 | 1.78 | 69.03 | 48,517 |
| 1992 | 34,717 | 3.66 | 68.62 | 50,593 |
| 1993 | 40,408 | 16.39 | 71.17 | 56,778 |
| 1994 | 44,645 | 10.48 | 66.32 | 67,314 |
| 1995 | 48,982 | 9.71 | 65.38 | 74,920 |
| 1996 | 41,035 | -16.22 | 62.80 | 65,344 |
| 1997 | 50,460 | 22.97 | 66.30 | 76,106 |
| 1998 | 44,160 | -12.48 | 63.85 | 69,165 |
| 1999 | 46,999 | 6.43 | 66.30 | 70,893 |
| 2000 | 57,401 | 22.13 | 68.15 | 84,228 |

Behind this sales performance, beyond the intrinsic "force" of the new products, was essentially a determined and innovative commercial strategy, matured on the wake of the early experiment made with the British branch. In the sixties, Chiorino's sales distribution network abroad was assigned for the most part to independent distributors and agents representing several manufacturers, i.e. not working exclusively for Chiorino. The experience accrued with Polymax Belting Ltd. starting in 1975, however, permitted Chiorino to concretely assess the advantages and efficacy of internationalizing a larger core of its distribution.[93] This organizational solution was an excellent experience for Chiorino and in the eighties and nineties it was replicated in several countries, gradually turning the Biella company into a multinational enterprise.

[93] As mentioned in the previous chapter, Polymax Belting was transferred to the complete control of Chiorino in 1977. Polymax Belting sold the conveyor belts and transmission belts produced by Biella, after completing the final phases of processing. Cf. *supra* p. 125. The company held the exclusive rights to sales and post-sales assistance and was organized with its networks and a certain number of direct salesmen and external agents.

The advantages of this entrepreneurial strategy were that it permitted the company to use a centrally-controlled internal sales network which consisted in the possibility to motivate sales agents, give them technical grounding, gather a more consistent and detailed flow of information on the market conditions, performance of the products and needs of the clientele, to offer timely and reliable maintenance services, to be in all ways, including geographically, as close as possible to its final clientele.

Persuaded by two basic motivations, diversification of the geographic markets and internationalization of the sales structure, attentive to new opportunities as they presented themselves, Chiorino began to invest an increasing flow of resources into construction of its own foreign distribution network in the first half of the eighties. In July 1983, Chiorino Inc. was chartered in Wilmington, Delaware in the U.S. The following year, Chiorino France was set up in Paris. In 1985, acquisition of a minority share in the capital of a South African company, Precision Belting, was coupled with reinforcement of the French affiliate, followed in 1986 by bolstering of the American branch. In 1988, Chiorino created a Spanish subsidiary, Chiorino S.A. in Barcelona, and a South East Asian subsidiary, Chiorino Far East Pte Ltd. in Singapore. Concurrently, in the same year, Chiorino invested new resources in developing the French company and increased its shareholding in the South African subsidiary.

In the nineties, Chiorino continued this process with even greater intensity, namely by expanding the number of subsidiaries and investing in development of existing ones. In the space of a few years, the Chiorino Group established Chiorino Benelux B.V., with registered office in Utrecht in 1994; Chiorino GmbH opened in 1996 in Kelkheim, Germany, relocated to Mainz in 2005; two years later, in 1998, it established Rob Harvey Pty Ltd in Brisbane, Australia;[94] Chiorino Sp.z. o.o. in Bydgoszcz, in Poland in 1999; Chiorino-K Ltd in Minsk, in Belarus, in 2001; Chiorino Hungary Kft in June 2005.[95] In the most promising mar-

[94] Chiorino acquired a minority share in the already operating Rob Harvey Pty; this share was increased to 50% of the capital in 2001. In December 2005, Chiorino acquired 100% of the capital in the company and changed its name to Chiorino Australia Pty Ltd.

[95] The Hungarian affiliate was founded on the take over and subsequent incorporation of a local distributor.

kets, the subsidiaries built up their own sales networks, in some cases to cover vaster portions of the territory, in other cases, to ensure a more widespread penetration. In some cases, the subsidiaries developed their own decentralized structure, as in the case of the British, French, Spanish, South African and Australian affiliates; in other cases, the branches outsourced the services to independent distributors.

To date, the areas covered by the direct network are primarily located in advanced or emerging economies that only a short time ago were defined "in transition". These are mainly countries previously party to the dissolved Warsaw Pact or former Soviet Union bloc nations and which have joined the European Union or are on the verge of accession. All areas, newly freed or emerging, that show good promise for development since they have some catching up to do with the developed world. If we include in this picture the countries where an indirect sales network is in place, the overall geography of distribution confirms a presence concentrated in continental Europe, flanked by local offices of varying size in Central America (Mexico), South America (Argentina, Brazil, Colombia, and Venezuela), India, Turkey, and the Middle East (Saudi Arabia and Israel).

As it had been since the beginning for the first foreign subsidiary in Great Britain, the common denominator to the "internal" hubs of the network, namely the direct members of the Group, is handling development of sale relationships, "tailor-made" product endless making and processing, and delivery of customer assistance and maintenance services, which represent a central element of the sales strategy.

While decentralized company functions in the multinationalization process described up to now essentially concern distribution and the final phases of the production cycle, it is important to remember that Chiorino also experimented on diverse forms of direct presence on foreign markets in the nineties. In particular, broader segments of production were delocalized by setting up joint ventures. Two initiatives were taken toward this goal. This first case concerned creation in 1990 of a mixed Chinese-Italian company with registered office in Jinan, whose purpose was production of flat, non-extensible rubberized belts to use mainly as transmission parts for textile industry machinery, specifically for spinners and twisters. The initiative aimed to capture the enormous growth potential


CHIORINO VENETO s.r.l.
Colle Umberto (TV), Italy


CHIORINO PARMA s.r.l.
Parma, Italy


CHIORINO U.K. Ltd.
Featherstone, United Kingdom

CHIORINO SAS
Paris, France

CHIORINO S.A.
Barcelona, Spain

CHIORINO BENELUX B.V.
Utrecht, Holland

CHIORINO GmbH
Mainz, Germany

CHIORINO Sp.z. o.o.
Bydgoszc, Poland

CHIORINO, INC.
Newark, U.S.A.


PRECISION BELTING (PTY) LTD
Westmead, South Africa

CHIORINO FAR EAST PTE. LTD
Singapore


CHIORINO AUSTRALIA PTY LTD
Brisbane, Australia

of one of the most explosive economies in the world and a particularly promising sector within it. Chiorino acquired a 20% share of the capital, while the rest was held by local public partners. The public nature of the Chinese partners, still the most prevalent form of ownership in the Chinese industrial sector in the nineties,[96] was originally the greatest source of difficulties for operations. Efficiency was weakened by the exceedingly long decision-making processes and the lack of specific managerial responsibilities. The mounting dissatisfaction that grew out this situation led Chiorino to withdraw from the partnership, triggering a lawsuit and international arbitration proceedings at the Court of Stockholm, which Chiorino ultimately won. Since then, Chiorino has not been present on the Chinese market, as this market is still more interested in technical products with standard characteristics and low price.

On the other hand, Chiorino's experience in Slovenia was very successful. Since 1995, Chiorino had established a business affiliation with Konex of Slovenske Konjice for endless making and selling its conveyor belts on the Eastern European market. Their similar approaches to development and the trust-based relationship established with the Grilj family, who operated Konex, led the two companies to extend the scope of their partnership. Together, Chiorino and Konex took part in the privatization of a public company, Konus, by taking over three production departments in two years' time, which were then reorganized into a single industrial company staffed by two hundred employees and specialized in production of pressed felt, non-woven fabrics, treated with polyurethane resins. A part of this production was successfully destined to endless making conveyor belts, distributed with the Silon brand, while the rest was sold in the footwear manufacturing sector and in industrial filtering processes. After getting the failing company back on its feet, on solid technical and organizational grounding and in conditions of good profitability, Chiorino decided that the joint venture was no longer consistent with its group strategies and withdrew in 2004, selling its majority shareholding. The sale earned Chiorino a healthy capital gain and the

[96] Cf. Organisation for Economic Cooperation and Development (OECD), *China*, Series «OECD Economics, economy Surveys», Paris, OECD, 2005

Grand opening of the Biella Sud factory, 6 October 2001.
At the centre Gregorio, Amedeo and Matteo Chiorino

ability to define agreements to continue the partnership in sales and distribution. Based on these agreements, Chiorino is exclusive distributor of Silon belts through its network, while Konus, which partly redesigned its production toward household cleaning products, provides reciprocal services on the Slovenian, Croatian, Bosnian and other former Yugoslavian markets for distribution of Chiorino products.

Between the end of the eighties and the early nineties, Chiorino established two Italian subsidiaries to perform functions similar to the foreign branches here on the Italian market, Chiorino Parma S.r.l. and Chiorino Veneto S.r.l. of Colle Umberto, in the province of Treviso. The former was set up in 1989 to provide services to the food sector market. The latter - whose entire shareholding was purchased between 1990 and 1991 - was founded pursuant to Chiorino's take over of an existing company, Covetra S.r.l. In the 1990s, this network was supported by a Milan branch, which has since been absorbed into the new Biella Sud factory. The entire national sales structure is controlled by and responds directly to the Sales Management of Biella, which brings together orders and all the information on market conditions and applied technical needs of the clientele and in particular, the needs of machinery manufacturers, important clientele for Chiorino, with which it shared designs and developed prototypes which are approved and are then distributed on the various international markets.

*Management profiles*

Modernization associated with the business development process also left clear mark on the area of management. In truth, some of the distinctive traits of management relate to the close continuity with the set up given at that time by the founder, Lorenzo, and perpetuated by Fulvio and Angelo, which can be defined as a century-long fixture. Systematic and comprehensive capitalization of profits is one, and surely the most visible, example of these traits, associated with a policy of amortizing assets to the maximum allowable limit. Another trait, pro-

moted by the same intention to preserve and reinforce capital solidity, is prudence, demonstrated most clearly in the propensity to be cautious against possibility of write-downs on the asset items. Thirdly, in keeping with the above, which also form an indispensable premise, is careful investment in plant and equipment and intangible assets, commensurate with the internal capacity to self-finance. Conversely, we find new elements in financial management, which were frequently quite significant, and in general company operations, previously truly rare events.[97] Proceeding by degrees, let's start by taking a closer look at company performance.

Limiting our attention only to the parent company for the sake of data uniformity, after the great surge in the seventies, increases in sales stabilized in the eighties and nineties at a more limited but still quite considerable pace: 6.9% on an annualized basis in the first decade, 6.3% in the second.[98] Expressed in 2004 lire, it increased from 26.5 billion in 1981 to 48.5 billion in 1990 to the record value of 84.2 billion in 2000, to decline once more under the weight of the 2001 economic crisis. Calculated in relation to the number of employees and in constant lire, revenues per employee increased from 190 million in 1981 to 233 million in 1990 to 279 million in 2000 (see Graphic 4).

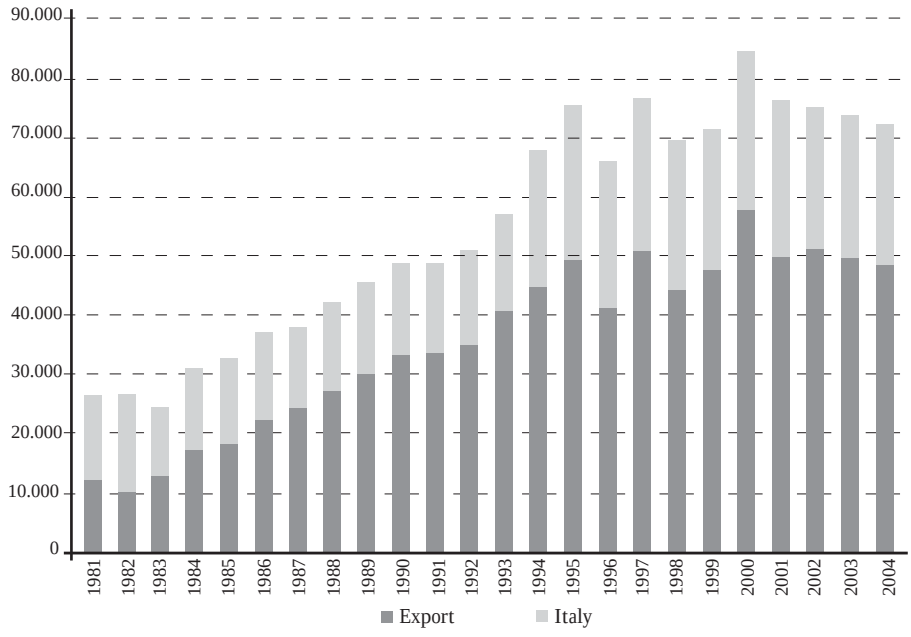
Taking a closer look at its development over time, we find a phase of contraction at the start of the period in 1981-1983, a lengthy expansion until 1989, a renewed push upward in 1993-1995 and in 1999-2000, with two years of downward trends in the middle, 1996 and 1998. Trends in profits largely replicate this course, with a few deviations in 1983 and in the early and late part of the nineties.

Underlying company performance are economic trends, real, financial and currency related. Hit hard by the second oil crisis, the years between 1979 and 1982 brought world economic growth to its knees

[97] The only precedent were the transformations made in 1947 and 1954, the former from a partnership to a joint-stock company, the latter from a joint-stock company to public limited company.

[98] Note that this data refers to sales expressed in 2004 lire. Calculated using current lire, the rates are respectively 16.2% and 9.9%. The Group as a whole experienced a similar trend, in continuous growth, until the aforementioned aggregate value of more than 85 million euro.

Graphic 4. Composition of sales (millions of 2004 lire)




Italian industry felt the full force of its effects. After two years of major growth culminating in 1980, industrial production spiralled into a deep recession, characterized by a low point in 1983 and a recovery that, although sustained, wouldn't lead to surpassing the previous peaks until after 1987. The overall situation in which Italian companies operated worsened when Italy joined the European Monetary System (EMS) in 1979. While this decision brought more stability of the lira exchange rate, it also led to a considerable narrowing of the margins for making competitive devaluations. The manufacturing sector could no longer incorporate into the prices the increased costs of the factors and the raw materials with the same freedom it had in the seventies and was involved in a restructuring work aimed at increasing productivity, gaining efficiency and limiting salary rises.[99]

[99] The eighties were a decade when the "strong exchange" currency policy pursued by the government and Italian monetary authorities played a major role in industrial policy. On the

Chiorino felt the affects of the situation, reporting a decrease in income between 1979 and 1982. Performance was weighed down by the difficulties in the textile industry and diversification of the product markets that had been initiated in the previous decade was still being implemented. These were the years when the company had to make some hard decisions on restructuring, such as divesting the tanning sector and further diversification of its industrial activity, achieved with the start up of an initiative to treat hides under the name Chiorino Chimica. As regards industrial relations and organization, Chiorino began to negotiate and introduce incentives systems of its employees' salaries based on accounting for productivity. An early attempt to bring these changes was made by Gian Paolo in the early sixties, but he abandoned the effort due to difficulties in applying the system to an artisan manufacturing process such as leather and the fervent opposition demonstrated by the workmen. The first department to be involved was rubber processing, relatively more standardized with respect to the others. After divestment of the tannery, the new systems were gradually extended to most of the departments.

With the first sparks of recovery in Italy and abroad, sales resumed their growth trend between 1984 and 1989, followed by income, despite the diverging performance in 1985 and in 1990, as a result, respectively, of the capital losses resulting from mergers and of the losses arising from sale of a shareholding. Though the next decade opened with a phase of contraction and a slow down of the international cycle, the world economy experienced the return of great prosperity between 1994 and 2000, with the exception of the Mexican crisis (1995), which translated into a slight stagnation in growth, and the Asian crisis in 1998, a source of a considerable contraction.[100] In

whole, however, the manufacturing sector or at least its more traditional component, suffered the growing levels of competition brought by the rise of the new Asian economies on the world markets and the accession to the European Community of countries with an industrial structure similar to the Italian set up, but benefiting from lower production costs. Cf. A. Graziani, *Lo sviluppo dell'economia italiana, dalla ricostruzione alla moneta europea*, cit., pp. 143 and 148 et sequitur.

[100] For the data, based on the performance of the world gross domestic product in real terms, cf. International Monetary Fund, *World Economic Outlook*, Washington D.C., IMF, September 2003.

Italy, the exit of the lira from the EMS in 1992 and its consistent depreciation constituted an additional reason for Italian industry's excellent sales performance, which was recovering on the domestic market in the two-years 1994-1995 by virtue of the recovery in production and industrial investments. The subsequent currency stabilization begun in 1996 caused an inversion in the trends with substantial repercussions on sales, largely recovered, however, in 1999 and more so in 2000. Compared with these trends, profits posted a roller-coaster performance, at times reflecting the positive changes in revenues (1995-1997), at other times, going against the trend with respect to it, benefiting from the proceeds of financial management (1998) or undergoing the effects of non-operating losses and capital losses (1993 and 2000).

In more recent years, the difficulties of the economic trends had significant effects on sales. In a context characterized by the sudden deceleration in 2001 of world production and sales, the pervasive uncertainty generated by the struggle against international terrorism, wartime events, and financial accounting scandals of several large American companies, worsened still by weak performance in the Euro area and the Italian economy and a rise in the international competition, sales posted substantial stability in nominal values, although corresponding to a slight decrease in real terms. This did not prevent Chiorino from achieving profits in 2001, thanks to financial proceeds, and also in 2002, thanks to the positive trend in industrial management and in spite of the value adjustments made to securities held in the portfolio. The slight loss realized in 2003 is due to the persistent difficulties in European demand, Chiorino's main market, and the decrease in the American currency against the Euro.

In terms of capital accounts, at the start and end of the eighties, repeated increases in capital offset the erosive effectives of the high rates of inflation, taking partial advantage of the support offered by legislative instruments for revaluation of the asset items. Similar interventions were made in the nineties, progressively raising the capital from 9.9 billion lire at the start of the decade (equal to 5.1 million euro) to 10 million euro in 2001.

It is said that a characteristic trait of modernization of operations consists in development of financial instruments. This was practically a necessity in the specific economic conditions of the seventies and early eighties; finance was often used with resources obtained through short-term bank debt and was in several cases a very important source of proceeds. Quite frequently, it came to form a large part, higher than 50%, of the total budget. Through the nineties, as the company approached a period of higher stability and solidity of the monetary variables, the trend declined in terms of volumes, while remaining a compensatory or supplementary component of company revenues. Finance was used to a certain degree in the seventies and eighties in the form of bond loans signed by shareholders in lieu of a dividend policy, while another distinctive trait of sophisticated and modern technical operations was a certain familiarity with corporate operations.

All of these techniques were used by Chiorino in the nineties to elaborate a corporate architecture suitable to centralizing and optimizing the resources and financial services within the Group.

Beyond the more specific economic and financial scope, company operations in the last twenty years showed other interesting elements. One of these was systematic use of external consultants to draw on highly specialized skills, whose internalization would not be justified as part of the company and would not be consistent with the philosophy of flexibility that inspired organization. If use of these consultants was a constant in the model of introduction of the technological innovations formulated in the seventies, and later replicated, the same approach was used to support realization of innovative changes in distinct areas of production and design, such as, for example, control of operations and human resources.

Another element characterizing operations and attesting to a significantly more modern entrepreneurial culture was the attention paid over the last decade to quality and environmental sustainability. High quality has been a tenet and a standard at Chiorino since the earliest days of Conceria Lorenzo Chiorino. Fulvio took over from his

father and continued his lead, personally and assiduously inspecting and assessing the production departments. However, quality control at that time was entrusted to individual experience, a trained eye and touch, conducted by experts accustomed to these materials and processes. The third generation adapted to and embraced a new concept of quality, regulated by international standards and conceived as a system of procedural assessments that invest all operating levels involved in the design, production, distribution and customer assistance phases. The UNI EN ISO 9001 certification Chiorino obtained in the late nineties contributed to consolidating and reviving an important element in the culture and image of the enterprise and concurrently promoted the process of internal structuring. The same holds for the UNI EN ISO 14001 certification related to Chiorino's environmental management system, issued in 2001, bringing to conclusion a series of steps in which the company had invested heavily at least since 1995. With the important difference that these certifications indirectly imply that the company assume responsibility toward a larger group of stakeholders: no longer merely employees, clientele and suppliers, as in the quality system, but all the individuals living and the activities taking place in the district where the production facilities are located. In this vein, with even more and renewed commitment, Chiorino reached its objective of obtaining European EMAS certification (Eco-Management and Audit Scheme) in February 2006, which requires that the company formulate and comply with a continuously updated environmental policy to minimize the impact of industrial actions on the environment, in compliance with the especially high standards of eco-compatibility and subject to periodic assessments by independent certifying bodies, with important ramifications for the organizational and internal management processes.

Management also placed more importance and attention on company communications in recent years, in step with the trend that was affecting the entire business world, which was the result of a new way of conceiving relations between companies and internal and external stakeholders, in large part connected to the increased need to shore up the identifying element in an increasingly globalize economic and

social context. The most significant elements of the communications policies are publication of various documents, among which the "Chiorino Newsletter", with a view to conveying the most relevant news about product developments, technical innovations, and commercial successes and general Group configuration and activities; coining the company claim "Ideas in motion"; organization of Group events such as General sales meetings; setting up a multipart series of other initiatives aimed at deepening employees' sense of loyalty and company identity and image, in a uniform and comprehensive way throughout the entire Group. This effort was also associated with a developed sensitivity to modern forms of marketing, used as specifically commercial communication and promotional tools.

A final aspect connected to management concerned not so much the company itself but rather the events relating to family wealth. The 1965 acquisition of the Tutorial Industrial had not changed the internal arrangement of the capital represented by the company, handed down from Lorenzo and maintained intact by Fulvio and Angelo and later by the six Chiorino cousins. In 1983, the family decided to undertake another industrial initiative. Chiorino was in the throes of a difficult economic cycle in which one branch of the company, the tannery, was faced with dwindling operating prospects and the diversification plan of the reference sectors, despite being launched, had not yet sufficiently advanced to represent an appropriate defence. In this economic downturn, the company had posted three consecutive years of growth in the sales that was less than or just equal to the rate of inflation. It seemed appropriate to accelerate diversification by investing in a new company, Chiorino Chemical, set up from scratch. Its "objective" consisted in finishing hides by applying a thin layer of polyurethane. These hides were intended for the shoe manufacturing, furniture and leather goods sectors. Lorenzo and Stefano focused their efforts on this area, Lorenzo in administration and sales and Stefano as a technical expert in hides and leather. True to tradition, participation of the two family branches was completely equal. However, in 1988, Stefano decided to set up his own business, buying up the industrial leather products left after this branch of processing was discontinued

by Chiorino S.p.A. Lorenzo, alone at the helm of the company, transferred his operating responsibilities as sales manager, which he had covered up to that point at the parent company, to his brother Amedeo, and decided to focus entirely on development of Chiorino Chemical, whose name was changed back to "Conceria Chiorino".

This new situation did not bring about substantial changes to the capital structure, but still accentuated the "centrifugal" nature of the activities undertaken by the various members of the family. In 1991, when Tutorial Industrial was wound up due to difficulties in the spinning sector, Gian Paolo, Luca and Stefano withdrew their financial backing from Conceria Chiorino. For the first time in Chiorino history, there was asymmetry in the division of the shares of family capital in favour of the children of Angelo, who held the entire shareholding in "Conceria" and half of the shareholding in the Group.

In the subsequent years, this distribution probably led to an imbalance and in 1997, the two branches of the family decided to separate, leaving Lorenzo, Gregorio and Amedeo the sole owners of the Chiorino Group. Some eighty years on, history repeated itself, replicating the split that occurred between Lorenzo and Umberto in 1916. More recently, another schism between Gregorio and Amedeo on the one side and Lorenzo on the other separated the capital structure of Conceria Chiorino from the Chiorino Group, establishing more consistency between the composition of the shareholdings and direct responsibility in managing the businesses.

The similarity of these events with the events that took place between Lorenzo and Umberto afford us the opportunity to reflect on the elements of continuity that have characterized the long entrepreneurial history of the family and the history of the company. While it is true that in its century of operation, the company has faced change in many ways while never shying away from the challenges posed by the general and sectoral business cycle, technology and the markets, to the point of undergoing the dramatic metamorphosis in the sixties and seventies that we attempted to illustrate in these pages. At the same time, Chiorino has remained faithful to itself and its history in several ways. This continuity

is shown with special clarity from two general aspects. The first is the "flexible specialization" production model. Today, even more than at its beginnings or in the twenties, the Group produces a very large range of products and is organized in a way to achieve a high degree of product personalization to meet the diverse needs of the clientele. It embraces and can successfully implement diverse product and process technologies, taking advantage of versatile machinery and labour. It is constantly attentive to the technological developments and is committed to applied research. Production is carried out in many small batches, in close relationship with the flow and the nature of the orders. It has a marked interest in assisting its clientele far beyond the simple sales relationship, especially when opportunities arise to collaborate with clients on developing special applications. Many of these traits were present in Lorenzo's tannery, which specialized in a wide panorama of industrial leather articles, capable of performing diversified tanning processes, attentive to technological updates and particularly solicitous toward its clientele. Furthermore, we also find elements of contiguity, if not outright continuity, in the type of product, namely, in the essential function, between today's straps and conveyor belts and the transmission belts manufactured by Lorenzo's tannery, despite the fact that the processes and materials used today, by incorporating a clearly higher technological content, cannot be compared to those of the past. This tenuous link with the past, far from being casual, owes to the constant efforts to conjoin innovation with the value of knowledge and expertise that, already present in the company, lent themselves to being converted to new uses.

The second aspect which demonstrates the loyalty of the company to itself even throughout its most challenging times of change are the values that have marked the strategic decisions and conduct over time, fortifying the identity and making it recognizable to the public and its stakeholders. These characteristics have been underscored several times in the text and we see no reason for further exploration. It will suffice to remember the same overall proclivity to embrace challenges, the management style well balanced between caution and perspicacity to seize opportunities for growth and development, the sensitivity in leading industrial relations, attention to quality, the sobriety in the lifestyle of ownership and

the sense of morality with which the family has played the role of entrepreneur since the days of the founder, giving preference to the welfare of the enterprise as an essential prerequisite to the welfare of the community of people gravitating around and inside it.

1. The Biella Nord factory, historic site of the Group.
2. The new Biella Sud factory.

1. Portrait of Flora Machetti and Lorenzo Chiorino, married on 10 September 1905.
2. Flora and Lorenzo with their first three children, Fulvio, Angelo and Alduccia (1912).
3. Flora and Lorenzo in 1950 with 13 of their 15 grandchildren.

# Family memories

Gian Paolo Chiorino*

The history of a company is not merely the important record of its investments, balance sheets, revenues, income, and growth in capital without which it couldn't exist today. It is also a chronicle of men, entrepreneurs, managers, clerical employees and line workers. In celebrating the hundredth anniversary of Chiorino, we also have to remember the hundreds of men who have made a commitment and have undertaken responsibilities to carry it forward, help it grow and establish its reputation. This remembrance includes all those people who have spent time working at Chiorino over the century of business at the company.

I won't name each one personally, but each of them will find some event familiar to them retold in this book. In the short chapter that follows, we are commemorating the man who founded the company in 1906 and his two sons who helped it grow until the 1970s: Lorenzo, Fulvio and Angelo Chiorino.

## *Lorenzo Chiorino*

### *Family, youth, and marriage.*

Our grandfather, Lorenzo, was named after the patron saint of this town, Ponderano, where he was born on 25 November 1877. Chiorino was a traditional surname in Ponderano, cited in the parish records dating back in the 1500s. In the 18th century, numerous members of this family worked in the public administration of the town: in 1799, during the French occupation, Giacomo Chiorino and Eusebio Chiorino were among the "*municipalists*" in the region. Twelve Chiorino family members, three of which christened Lorenzo, were among the many Ponderano citizens to

** I would like to thank Lucetta Motta Piras, Paola De Marchi Desenzani and Carla Mattasoglio for the invaluable information they gave me on the Chiorino family.*

take part in the wars of the Risorgimento. There was a Lorenzo Chiorino second adjutant, a corporal and a soldier.

Our Lorenzo had four sisters, Leopolda, Caterina, Maria and Angiolina, and two brothers, Giovanni Battista and Umberto. Chiorino was a large family, as was typical in those times, which kept the parents deeply involved, materially and morally, in raising and educating their children until they gained independence. Angelo and Teresa, Lorenzo's parents, were not negligent in their responsibility and watched their family grow healthy and prosperous for fifty years, rewarded by the birth of several grandchildren. Angelo lived to the age of 75 and Teresa to 74.

Lorenzo attended the boy's primary school in Ponderano. After primary school and three years of technical school, at the end of the 1800s, Lorenzo began to work as an administrative and technical clerk at Conceria Antonio Varale in Biella Vernato.

On 10 September 1905, in the parish church of Candelo, Lorenzo Chiorino wed Flora Machetti, born in Quittengo in 1883 and resident in Candelo in Campile. Lorenzo was twenty-eight and Flora was twenty-two on their wedding day. The photographers from Studio Rossetti in Via Umberto 62 in Biella took their portrait together, printed using a platinum process and retouched as per tradition with the muted, cloudlike background. Attending the wedding were Angelo and Teresa Chiorino and Delfina Boggio, Flora Machetti's mother. Flora's mother - left a widow six months prior to the marriage - had had thirteen children, eight living; the last born, Giuseppina, was just fourteen at the time of her father's death. Life could not have been easy for Delfina and Flora's marriage to a sincere and mature man like Lorenzo gave her a bit of serenity.

A pretty poem by "Mr. and Mrs. Villa" of Ponderano, friends of the Chiorino family, was printed inside the little book for the wedding guests, whose cover was illustrated with two art deco roses and the pages with a cherub and two fleur de lys. The poem read: "*Ferve l'estate polverosa, altera – di verdi frutti e di tenaci fiori, - ma a Voi nel cuor fiorisce primavera – coi primi effluvi e coi soavi albori*": the flowery style is typical of the time and the marriage poem is presented with grace and simplicity.

Lorenzo's brothers and sisters all went their own ways in life and each had their own families, except for Angiolina who never married. Of the brothers, Giovanni Battista, six years older than him, followed

Lorenzo's lead and became manager of Conceria Lorenzo Chiorino with full signature power; he married Flora's sister, Clelia Machetti, thus becoming Lorenzo's brother-in-law as well as his brother. Their other brother, Umberto, Lorenzo's business partner between 1912 and 1916, was tragically electrocuted in an accident in the transformation cabin of his tannery. His wife, Maria, staunchly continued her husband's business with great courage and determination until her sons, Augusto and Vittore, had reached adulthood. Two of Lorenzo's sisters, Leopolda and Angiolina, worked as milliners while Flora sold the hats, displaying the creations in a shop in Via San Filippo in Biella, run by Lorenzo's sister. It was there that they met.

*Lorenzo and Flora's family.*

After their marriage in 1905, Lorenzo and Flora settled in Biella in Via Garibaldi. A photograph taken in 1912, again by Studio Rossetti, against a background decorated with an archway, clouds and a vase full of flowers, portrays the proud parents with their three eldest children: Fulvio, Angelo and Alda, nicknamed Alduccia. In actual fact, Lorenzo and Flora had had a child in 1906, a son, who they had also named Fulvio, but he died an infant on 4 June 1907. In October their second son was born, who they christened with same name. The family was completed with the birth of the last two daughters: Laura in 1913 and Giovanna, called Giannina, in 1918.

The home in Via Garibaldi in Biella, which later became the police headquarters of the city, soon became too small for the large family. In 1928, Lorenzo purchased from the Florio family a house in Via delle Ville, 10 in Aragni, which had a large garden for his children and future grandchildren.

Although he had been living in Biella for a number of years, Lorenzo always remained very attached to Ponderano, his hometown where his family and relatives still lived. In October 1933 with his brother, Giovanni Battista, he donated to the parish, whose patron saint was his namesake, one of the new bells *"in memory and suffrage of their parents, Angelo and Teresa"*, who died in 1921 and 1923. A receipt from the "Pro-bell committee" indicates the weight of the bronze as 257.3 kg and the iron 167 kg of the stock and the wheel, quoted respectively as 7 lire and 3 lire per kilogram.

*Work and maturity.*

Lorenzo continued to work diligently, with intelligence and determination. Every day he stopped by the central post office of Biella and picked up the correspondence of Conceria Chiorino from box no. 130, which would become no. 220 in 1940. Most of the customers' orders came by letter and each evening, Flora would ask him: "Was there any mail, Lorenzo?". In the early years, husband and wife would go through the mail together.

Lorenzo knew that his wife was quite close to him in his problems and his work; he felt he could count on her, even though she was very busy raising and educating five children. Lorenzo also knew that he could count on a few trusted associates, among whom the family members who joined the company: his brother Giovanni Battista, brother-in-law Aristide Mattasoglio, nephew Nanni Mattasoglio, and sister-in-law Zemmira Machetti. Lorenzo rewarded his employee's loyalty to the company and never laid them off, even in times of trouble; when orders were scarce, Lorenzo would have them wash the windows of the shed and pull up weeds in the courtyard to earn their wages. This would continue throughout his entire life at Conceria Chiorino: none of his employees lost an hour of work.

As time passed, his sons and daughters grew and continued their studies, which were more challenging for the two sons, as was typical in those times. Fulvio and Angelo prepared to join the tannery, the first in 1928 and the second five years later.

In the space of a few years, from 1931 to 1936, Alduccia got married and then Angelo and Fulvio shortly after. Lorenzo and Flora saw the birth of the first three of a long series of fifteen grandchildren. Giannina married in 1942 while Laura remained with her parents until she wed in 1950. A beautiful family portrait of Lorenzo and Flora, taken by the Studio Martinero in Biella at the start of the 1950s shows the coupled surrounded by thirteen of their fifteen grandchildren - the last two grandchildren, Anna and Vittorio, hadn't born yet. It was chosen as the best of a series of several photographs taken.

Each year 10 August is a special day for grandfather Lorenzo: in Sordevolo, in the garden of the two summer homes that he wisely purchased for his children, the entire extended family celebrates the feast day

of San Lorenzo. The festivities culminate in a play that the grandchildren act out, originally only the six oldest grandchildren, almost all the same age, but gradually incorporating the younger ones as they grew. The venue is the large open-air garage, suitably furnished by the two directors and set designers, Fulvio and Alduccia. With a little help from brothers and sisters, brothers and sisters in law, they also handled the actors' costumes, mainly old clothes tailored for the occasion.

The tradition began with an enactment of Manzoni's "I Promessi Sposi" which was appropriately edited for 7- and 8-year-old actors. Lucia was Lucetta, the first grandchild, while Renzo was played by Lorenzo, the second-born, and really the only grandchildren who actually knew how to act. The others were extras on the set, admired by the spectators more for their costumes than for their acting ability. Indeed, the audience of spectators included members of the extended family as well as friends from the nearby homes in Sordevolo. A hearty round of applause was always at hand and bolstered the courage of the more timid actors before entering the scene.

But everything always went well and every mistake was quickly forgiven, indeed, they were important parts of the performance, and the show ended with the usual poetic refrain: *"Long live our good grandfather, who bought Sordevolo..."* Grandfather Lorenzo always smiled happily, but his natural reserve and shyness kept him from being particularly affectionate or high-spirited with his grandchildren. Grandmother Flora was also a woman of fairly austere temperament and it wasn't always easy to keep so many vivacious children under control. What's more, grandparents of the past were not like the grandparents of today.

*Ageing and passing.*

Before World War II, Lorenzo had purchased a farmstead in Sandigliano, most likely with the idea of renovating it himself when his two sons Fulvio and Angelo had taken over the reins of the tannery and to keep from interfering in their decisions. He distanced himself from the company gradually and without incident, thanks to his alternative occupation of renovating the farmstead which he slowly and gradually turned into an exemplary, working farm. In years when raising livestock and cleaning the area were perhaps less than scrupulous, my memories of

1. Fulvio, Deputy Chairman of the Biella chapter of the Italian Alpine Club, (1955).
2. Fulvio in search of the trails through Biella (1970).
3. Fulvio with his wife Olga and eight of their nine grandchildren (1982).

grandfather Lorenzo's farmstead were of the same tidiness and appreciation for things done right, values that characterised the rest of his life. He kept his cows clean and healthy in two orderly and comfortable stalls, each with its name written in large characters above the bedding and partly fenced for the young newborn calves. Outside was a great barnyard, a depot of farming equipment and tractors, and a stall for two horses - Nino and Bigio. Angelo, a reserve officer of the Cavalry, would attempt to mount the horses, to the enormous amusement and peals of laughter of his children and grandchildren. Nino and Bigio were cart-horses who had never felt anyone on their backs and tried desperately to unsaddle him.

On the other side of the farmstead's courtyard were a pig sty and chicken coop. The farmer's residence, with cobs of corn hung decoratively out to dry on the balcony, and the main house that grandfather Lorenzo, always interested in the needs of others, offered free of charge to acquaintances in Turin who had been evacuated to Sandigliano during the last war.

Surrounding the farmstead were the immaculately maintained fruit orchards and fields of wheat, oats and sorghum. Lorenzo rediscovered and updated the trade of his ancestors, farmers of Ponderano, and interpreted the trade as the entrepreneur he was, leaving his family not only the tannery but this model farmstead.

In 1955, Lorenzo and Flora celebrated fifty years of wedlock in Oropa, surrounded by children, sons and daughters in law and grandchildren, but his heart - which had sustained the pace of a long and demanding life - began to tire. Lorenzo died two years later on 1 October 1957.

### *Fulvio Chiorino*

First-born son of Flora and Lorenzo, after the premature death of a brother by the same name, my father Fulvio was born on 13 October 1907 in Biella. After completing public primary school and high school at "Q. Sella" he enrolled in 1920 at the Eugenio Bona Royal Business Institute of Biella, a specialized school for business and industrial accounting, where he earned his diploma in 1924 with a bronze medal, at 17 years old.

One of his teachers, not much older than he was himself, was Giuseppe Pella, with whom Fulvio maintained a close friendship and who went on to

become an important Italian politician.

Fulvio's intelligence and enthusiasm would have helped him to continue easily on to a university degree, but his father Lorenzo wanted him to use the business background acquired at "Bona" and also learn the tanning trade to join his brother Angelo in the tanning business that Lorenzo founded in 1906. For Fulvio, who had great admiration and affection for his father, it was not difficult to obey his request: after "Bona" he enrolled in 1924 in the "Royal National Institute for the Leather Industries" in Turin, where he earned a degree as tanning expert with a four year course of studies. His nature being what it was, Fulvio was in hurry and ended up completing the course in just two years, in 1926, obtaining the gold medal from the Italian Federation of the Tanning Industry.

But the knowledge about leather for industrial uses was not on par with the English tradition, so Fulvio bravely - and indeed it was courageous for those times - decided to go to London in 1926 and enrol in the "Leather Institute". As for his English, since he had studied a bit at the Bona, Fulvio decided to study on his own, and the rest he picked up while he was there. Knowing his innate curiosity and his love of learning, there is no doubt that Fulvio tried to prise out of the English tanners' the secrets of their tanning systems, especially chrome tanning, which was the most recent method and was better than tannin tanning for making flat belts for power transmission.

After returning from his year-long sojourn in London in 1927, he was obliged to fulfil his military service in Italy. In 1928, he was as an official in the Corps of Engineers assigned to a post in Varese, after being stationed in Palermo. He would always fondly remember his time in Palermo - and in those years Sicily must have been truly splendid - because he returned there on holiday with his wife Olga many years later. Fulvio then joined the company, just before the crisis in 1929, working in the technical and production department.

In 1935, Fulvio and his brother Angelo, who handled the economic and financial aspects of the business, received a general power of attorney to manage Conceria Chiorino. In 1933, Angelo and a group of mountain-loving friends built the "Baita Amici" in the community of Fontainmore in Valle D'Aosta, just beyond the Colle della Barma that connected Biella with the Valle del Lys. Lorenzo and Flora, with their daughters, took part in the inauguration.

Fulvio married Olga Perona on 5 November 1936. Between 1937 and

1951 they had five children, four boys Gian Paolo, Mario Alberto, Luca and Stefano, and a daughter, Anna. There were a few years of quietude in the personal and professional life of Fulvio before Italy became involved in the Second World War. Fulvio was not recalled to service because the company was declared "auxiliary" for wartime production in 1935 by the Supreme Defence Commission and in 1939, the General Commissionership for Wartime Production gave Fulvio and Angelo certificates exonerating them, along with twenty-seven employees of Chiorino, from the call to arms as they were declared to be "irreplaceable and indispensable".

The years of war were not easy ones for the family, nor for the company, but they were not as tragic as they were for families who lost their children in battle. The most difficult period for Biella, which had been saved from the battles and bombings, was between 1943 and 1945, with the Germans and Republicans invading the city and towns. The Germans controlled Conceria Chiorino and dictated how it sold its products, while at the same time, the resistance fighters were asking for the leather they needed.

There came the fateful day when the Republicans were at the main entrance and concurrently the resistance fighters were at the secondary entrance, luckily on the other side of the factory. Fulvio and Angelo were accused of having given aid to the resistance fighters and spent a few frightening days at Villa Schneider in Biella, where the Germans and Republicans conducted their interrogations in the basement rooms. Fulvio was released after a few days, but Angelo was held in the prison in Piazzo for another week. I still have a very clear memory of when I was seven years old and our doorbell rang out loudly at eight o'clock in the morning before I went off to school. Papa was outside the door with a scruffy beard, no tie and no belt to hold up his trousers. He walked in the door and hugged his three children and our mother for a long time.

The liberation brought new enthusiasm and boosted the enterprising spirit of Fulvio, who had always had initiative, drive and optimism. At the age of forty, he felt the desire to take up his studies again and he enrolled on 10 September 1947 at the Institut Téchnique Supérieur de Fribourg, at the Cours d'Ingénieur spécialiste, appearing for the first examination of the chemistry section, industrial specialization in leather, with a 75-page thesis on quinone tanning, elegantly bound in leather, which he kept dearly. The responsibility of the company and the family, which at the time counted four children, took

precedence in his life and prevented Fulvio from completing his studies.

In the climate of enthusiasm pervading the end of the war, Biella people wanted to thank the Black Madonna of Oropa who preserved our territory from the destruction that the rest of Italy suffered, organizing in 1949 the "Peregrinatio Mariae", a procession of the ebony statue of the Black Madonna through the towns, parishes, and some businesses. Lorenzo, Fulvio and Angelo accepted the visit quite joyfully, evidenced by the statue of the Madonna still located at the entrance to the factory.

Reconstruction of the Italian businesses destroyed or damaged by the war brought quite a lot of work to Conceria Lorenzo Chiorino and the opening of international borders made it possible to bring in raw materials, hides and chemical products, and made new markets available in the world. But for tanneries specialized in industrial leathers, there was a big risk looming on the horizon in the 1950s, the rise in new plastic and synthetic rubber materials that would replace leather in many applications in the space of a decade.

Fulvio, in association with his brother Angelo, began to tour Europe to visit chemical manufacturing companies, to test and retest the new materials in the laboratory and then on the textiles machinery. It was an authentic revolution in a company that had been making the same product, but constantly improving it, for fifty years. The chemical laboratory was expanded, new production areas were introduced, and a few of the more qualified employees were trained to exploit the new technologies. Initially, there were more than a few problems: products tested in the laboratory that failed in the industrial tests, errors in the use of new production technologies in a company without background, initial scepticism by the traditional customers, lack of technical preparation on the part of vendors, new competitors which didn't understand how to use leather but were already applying new synthetic products in the textiles market. Fulvio, like a proper "Biellese", never lost hope and patiently, continuously and with the right technical assistance resolved every problem a little at a time.

At the end of this period of deep change, only two tanneries of the original seven were still operating by the end of the 1960s, Lorenzo Chiorino and Pietro Serralunga, with the tannery departments gradually falling away as the other departments were expanded. Fulvio won the production challenge; he never hesitated to produce articles that competed with leather, which had represented for fifty years his studies, his trade and his greatest passion.

This passion had led him to use leather not only for industrial products but also in numerous small artistic or crafts applications: desktop pen holders in tannin tanned elephant hide; rare buffalo skin parchment lampshades; beautiful photo albums bound in tannin-tanned calfskin; greased, chrome tanned "longues lanières" for skis; the chairs of the "Baita Amici" in "Peltan" with fur; the *"chaises longues"* for the garden of Sordevolo in strips of tannin tanned leather.

Fulvio was the promoter and originator of these technical and production transformations in the twenty years from the fiftieth anniversary of the company in 1956 to the end of the seventies. But he wanted to dedicate some of his time to others. He was the president of the Charity Hostel of Biella for nine years and supervised and grew attached to many of the young people who frequented it; it was administrator of the churches and the parish works in Piazzo, his parish; he was president of the Biella section of the Club Alpino Italiano, personally looking after young people's interest in the mountains, he was president of the Lion's Club of Biella, to which he dedicated part of his time to begin and consolidate the relations with foreign Lions, especially French members, in the period when the spirit of a united Europe was developing.

His great love was the mountains; as a young man he was a mountain climber and downhill skier and as time passed, he became an avid hiker, attracted to the beauty of nature and the trails through the valleys and mountains. As he approached old age, Fulvio wanted evidence of his love for our region by writing the book "Sentieri del Biellese", more than one hundred trails in the valleys of Elvo, Oropa, Cervo, Sessera and Strona Rivers, in the Serra, Bessa and Baraggia valleys. The photographs by Antonaci and the illustrations by Placido Castaldi completed his book, which was reprinted three times for a total of three thousand copies and is found in the libraries and in the backpacks of many Biella residents.

In the sixties and seventies, Fulvio and his brother Angelo helped introduce the third generation to the Conceria Chiorino, in whose good hands they left the family business in 1982, when he submitted his resignation from the office of President after fifty years of work dedicated to a company that he knew and deeply loved.

Fulvio died on 21 February 1990, a few years after his active mind and enthusiasm gradually dwindled.

1. Angelo, during his university studies (1928).
2. Angelo, cavalry officer (1932).
3. Angelo and Margherita on their golden wedding anniversary (1985).

# Angelo Chiorino

Gregorio Chiorino

Angelo was born in Biella on 24 November 1908: he earned a degree in industrial accounting and then graduated from the Faculty of Economics and Business at the University of Turin.

While he was studying at university, the great industrial crisis broke out in 1929 which burgeoned into an economic depression in 1931-1932, years in which many companies were forced to close down their businesses due to serious economic difficulties.

Angelo elicited the great optimism of his father, Lorenzo, who allowed him to continue to study and complete his training, despite having a family of five children to raise and a still immature tannery to run.

Angelo felt enormous gratitude to his farsighted father and tried to repay him as best as he could for the sacrifices he had made: Angelo earned very high marks in his studies, earning a degree in economics with votes of 108/110 (a single unlucky Actuarial Math exam cost him the coveted perfect score of 110/110).

His graduate thesis on the trends in economic cycles had ignited his interest in the study of Economic Politics, an area that he would have wanted to continue to study, embarking on what would have been his greatest passion, an academic career.

I remember his excellent preparation on the subject but also a series of books on economic cycles that Angelo ordered from the United States and England, to learn as much as he could about the subject, books containing numerous pencilled in annotations, written in his clear and orderly hand.

The deep sense of loyalty and recognition to his father, Lorenzo, who had supported him during his studies in order to count on his professional assistance and his skill in developing the family business, convinced him to go back to Biella, after fulfilling his military service as a Cavalry officer in “La Mandria” near Turin.

In 1933, Angelo joined the company and began his career at

Conceria Chiorino of Biella. He was of a mild disposition, pensive, but very determined: I would say that he resembled his father Lorenzo, but being from the second generation, he was perhaps more prudent.

In 1935, Lorenzo granted his two children, Fulvio and Angelo, with general powers of attorney and split up their responsibilities and competences into two sectors: Fulvio was entrusted with the tanning and manufacturing aspects, while Angelo operated the "picker" production zone, which employed 30-40 workers, and the administration.

In 1935, Angelo wed Margherita Reda and their marriage gave them five children: Lorenzo, Federico, Maria Chiara, Gregorio and Amedeo.

His marriage with Margherita was an exceptionally harmonious one - I'd hazard to say mythical - in which both partners drew strength and resources to overcome the most difficult times of their lives.

World War II was the source of serious difficulty for the family: Angelo's incarceration in Piazzo, though brief - 8 days - was its most dramatic and painful moment. Only Providence, by fortunate coincidence, at the last minute kept Angelo from taking that horrific train to Mathausen.

For the rest of his life, this memory would remained burned into his brain, as well as the humiliation of the whipping inflicted on him by the Germans, whose scars would remain for many months hence.

With similar angst, Angelo remembered the arrival of the resistance fighters, who descended from the mountains to procure leather from the Biella tanneries, boldly walking into the secondary entrances of the company brandishing rifles and hand grenades, to get what they wanted. Chiorino, as a protected company, was subjected to regular checks and systematic patrols by the occupying German troops, so you can imagine the tension these unexpected visits caused.

In the decade of the post-war reconstruction, Angelo and Fulvio, supervised by their father, Lorenzo, were fully integrated into the company and led it to reach very satisfactory results.

Fulvio, the decision-maker and a bit impulsive, was responsible for production while Angelo, mild and more pensive, worked primarily to optimize the resources.

As the good engineer he was, Fulvio understood that the life cycle of the leather products for industrial uses was coming to an end and

undertook to find replacement materials, such as synthetic rubber and plastic.

Fulvio's role as innovator was perfectly counter-pointed by Angelo's handling of the resources and together, the brothers were able to complete each other in a truly positive way.

In 1956, fulfilling the wishes of their father, Lorenzo, Fulvio and Angelo dipped into the family capital to provide for their three sisters, Alduccia, Giannina, and Laura. After Lorenzo's death in 1957, the brothers were left to run the business alone, being the sole shareholders.

The year 1958 was an important one in Angelo's life: he lost his son Federico in a car accident at just twenty years old. He would forever carry the pain of this loss in the depths of his heart.

The early 1960s marked the entry of the third generation into the company: first Lorenzo, then Gian Paolo, followed by Stefano, Luca, Gregorio and Amedeo.

Communications between Fulvio and Angelo, generally good throughout their lives, albeit with the expected highs and lows, experienced a period of crisis in those years due to Angelo's dissent in following Fulvio's idea to purchase a dye-house, located in separate industrial lofts owned by the family.

Angelo was not favourable to making an investment in a services business for the textile sector, a business that did not give the control of the raw materials nor of the end customers, but which represented only a phase of industrial transformation on behalf of others.

Unfortunately, the facts would demonstrate that Angelo's prudent insight was correct.

In the seventies, years of radical transformation of the company, Angelo had confidence in the capabilities of the third generation: he considered it absolutely necessary to adapt the technologies to new materials, but the process called for prudence and patience.

"One step at a time": he did not want the company to end up in a financially imbalanced situation, still remembering the serious financial pressures faced by his father, Lorenzo. In several occasions, as the good economist he was, Angelo put into practice the skills acquired and administered the family and company wealth.

His unassuming personality was probably satisfied by the date he

died, on 10 August 1995, the feast day of San Lorenzo, the day in which the Chiorino family traditionally celebrated grandfather Lorenzo.

No article appeared commenting on his passing.

Angelo would have wanted only to be surrounded by his loved ones, who were always close at hand.

# What the future holds

Gregorio Chiorino

I see a company closely connected with Biella, in which it will continue to invest, proud to continue the work of those who came before us and left us with this legacy; work perceived as testimony of a fundamental value of our industrial society, which we are proud of.

A company respectful of the rules and the commitment poured into it by everybody connected with its good operations.

Chiorino shall remain a socially and ethically responsible company, which makes environmental sustainability a priority and which generates economic, civil and cultural promotion with its good work.

I hope that the company can work in an increasingly freer context. What I mean by this is that it can compete, starting from a territory and a nation in which the competitive rules are similar to those of the countries in which our competitors operate, without enduring excessive penalties due to dissimilar starting points (today, for example, we are penalized in our work by serious local and national infrastructural deficiencies, higher energy costs, inadequate tax and bureaucratic situations, etc.).

We will work so that Chiorino can continue to grow from a cultural perspective and with the help of the finest organizational structures, to be able to reach the dimension of a super-specialized and ever more international medium-sized business.

I see Chiorino becoming a niche business, reinforcing the strategic decisions already taken in these past few decades to create a successful enterprise; while not the largest company of its kind, Chiorino is still large enough to compete in the global market, establishing itself as an internationally important player.

We will continue to pursue organizational innovation of the process and products to defend and improve our specialization in development, production and distribution of new types of conveyor belts and transport elements, so well illustrated by the company claim “Ideas in motion”, and we will continue to work to improve the way that our products are pro-

posed and sold to our customers, which we want to become reliable partners, which can rely on us in any eventuality and in any part of the world.

We are ready to face the challenges of the third millennium and the future belongs to the young generations.

I have been the Chairman and Chief Operating Officer of the Chiorino Group companies since 1982.

In the past 24 years of responsibility, I have always tried to set and put into practice the strategic decisions described above.

I was responsible for guiding the transition of the company from the second generation (Fulvio and Angelo) to the third generation (my brothers and cousins) and to prepare the entry of the fourth generation.

As time passed, I was left alone at the helm with my brother, Amedeo.

We are a family of businesspeople by definition but we are by nature optimists about the future of our companies. If we weren't, we would realize our capital, investing it in other ways.

We have three children: Matteo and Elisa, Gregorio's children and Tommaso, Amedeo's son.

Elisa is 30 years old and lives in Padua. She earned a university degree with honours and now works as communications manager for Marsilio Editori in Venice.

Tommaso is 26 and is completing his post-graduate training.

Matteo is 32 years old. He joined Chiorino in 2001 after graduating from the Bocconi University and gaining other working experience: he represents the continuity of the family as the sole representative – for the time being - of the fourth generation in Chiorino and is preparing to take on more future management responsibilities.

I would like to end my brief notes, remembering a testimony that appears among the beautiful anthologies edited by Gian Filippo Cuneo in 1999, which I would like to dedicate to my son, Matteo:

Dear Matteo,

you and Elisa have always liked this expression: “A father leaves his children two things: roots and wings”.

The roots represent the values and love that we share.

I left you free to decide whether you wanted to join the business: you studied hard and prepared and decided to accept.

I asked you for your commitment to accept all the consequences, explaining to you that the company requires constant sacrifices and needs you to give your best, but it will certainly repay you your efforts with enormous satisfaction.

Several times, we have shared that fact that we are not interested in perpetuating a family continuity for its own sake, but that it is a priority to make the right decisions at the right time.

If you should feel that the worries become too great, that the stress of work exerts unbearable pressure, that your enthusiasm begins to wane, then that is the time to make the decisions you feel are appropriate, with freedom and courage, for the good of all who work in the company and for your own good.

And so, you can take flight again with your wings, toward landing places of your choosing, for you and for the company.

Papà.

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# Closing remarks

Guido Corbetta

Michele D'Alessandro has written a comprehensive and clear history of Chiorino. Gregorio and Gian Paolo Chiorino have integrated it with some touching personal memories and some of their plans for the future. Now they have asked me to make a few closing remarks. Concluding is never easy, but always interesting. I approach it with a bit of apprehension, not wanting to reduce such an important and long history into a few short anecdotes. What I am writing here should not be perceived as a synthesis of the book, but a wholly personal emphasis of the elements that have caught my attention, without any attempt to be exhaustive or present incontrovertible evidence.

First of all, it seems useful to comment on some characteristics of the Chiorino family as an entrepreneurial family which has dedicated itself in these first hundred years to developing and cultivating the industry created from the ingenuity and energy of Lorenzo. Then I will try to explore some traits of the strategy pursued and the models of strategic development used.

The Chiorino family was marked by responsible ownership.

They looked at the enterprise as private company for public utility, not serving only exclusive interests. Clearly, it has drawn resources and benefits (just compensation for the risks undertaken) but always being careful to share the good results with all the people working there and the surrounding territory.

It has interpreted ownership not as a hereditary right, but as a duty of descent. No generation wasted the goodwill handed down nor were they concerned only to obsessively preserve what they received. In truth, the family always attempted to make the most of the business wealth and not the accumulated wealth, using it courageously to face and overcome new challenges.

It understood the realm of ownership not only as rights and privileges - which, without false modesty, there was in abundance - but also,

or mostly, as duties and risks. Being owners of the capital of an enterprise cannot be compared to being owners of a property. The company, the business is a living thing, in constant flux, made up of people, families who commit their lives to their work: this is why owners cannot only draw on the fruit of the past, but must look to the future, assuming the risks of committing a part of their capital to surmount challenges as they present themselves. From this perspective, the clearest proof of the concept that the Chiorino family has carried on lies in the constant change in the company business. If an owner realises that the future potential of a sector is dramatically diminishing, it is his duty to wonder how to use the skills and resources accrued to penetrate new sectors. This is what the Chiorino family, gradually expanding the category of the technologies used and the customers and markets served by the company.

It has adopted a correct concept of the company objective which views short- and long-term profits as just recompense for the work done. To increase the short-term profit of a company, the easiest response is to simply curtail investments in productive or commercial research, neglect to think about appropriately compensating the contribution of loyal employees, take advantage of customers where the opportunities arise and neglect to be concerned about their long-term satisfaction. To sustain the profitability of a company over the long term, it is vital to commit to making investments in the correct measure and in the direction to renew the sources of the competitive advantage; keeping the most qualified human resources at the company, giving them sufficient rises in compensation, monetary and otherwise, especially to reward exceptional contributions; maintaining and developing the clientele; setting price policies that yield correct remuneration of the invested capital and, developing customer companies.

Chiorino adopted a non-nepotistic mentality in choosing successors. The young members of the Chiorino family are people who have been taught to build on their knowledge and capability, without the presumption of joining the company without being prepared or making a career there regardless of the results achieved. Each family member sooner or later got help in understanding and accepting their professional and personal limits, learning to defer without envy to the family members who showed more capability in this area.

Each learned to cope well with the processes of separation between family members. The history of each entrepreneurial family reaching its third or fourth generation demonstrates that inevitably, some family members decide to pursue individual paths. The real difference between a responsible owner and an irresponsible owner lies in how these separations are faced. In the best of families, and Chiorino is an excellent example, members who decide not to join the business accept the economic conditions that allow those who remain to continue to invest in the company and those who decide to remain are aware that those who leave can expect a fair return of their capital. In essence, no one acts as if they had "made the deal of the century!"

I would like to talk a bit more about the theme of separations. Several separations took place in the history of Chiorino (the first took place in the very early years of the company). This may have prevented Chiorino from becoming an even more important *player* in the sectors in which it operated because, unavoidably, resources were diverted from the company. However, given that unity of ownership is an irreplaceable value for sound operation of a company, no one can say how much damage would have been caused by an ownership pressured by discord or by deep divergences of strategic vision. This is why, in my opinion, we have to look respectfully at all the members of the Chiorino family who have successfully and courageously faced one of the challenges most fraught with negative consequences in the history of many family companies in Italy and elsewhere.

The challenge of responsible ownership is never met once and for all. Certainly, it is reasonable to believe that the one hundred years of history have contributed significantly to planting the seed that would grow in the family and enable it to maintain similar values and behaviour in the future. But every generation must embrace this concept with research into the deep reasons that make the commitment of responsible owners of a company more convenient as well as more interesting. I hope the young Chiorino family members learn to recognize this "ethical" concept of ownership in the behaviour of their parents and can perpetuate it wisely.

The history of Chiorino is very educational, especially in terms of company management.

The "art of changing trade," coined by Maurizio Sella, a talented

banker and expert in Biella companies, is one of the most difficult tasks because it has to be done at the right time and in the right way. Those who have managed the Chiorino Group in these one hundred years have demonstrated to understand how to change trades. They have done so being careful to adopt a strategic logic that might be called "by trial and error". In essence, while they continued to invest in the *businesses* traditionally pursued by the Group, they were also involved in seeking out new fields of activity with small investments used to "practically" evaluate their promise. Doing so, the Group prepared in time for the closing of business in which at this point, for several reasons, they had no competitive advantage.

The challenge of changing vocation led to another challenge that many family-run businesses could not yet cope with: bringing managers from outside of the family into the company for new skills. It is amazing to read the care taken by every Chiorino generation in involving outside managers in the most diverse forms. In some cases, by asking managers of multinational companies to come in on Saturday morning to develop new projects; in other cases, hiring qualified people and incorporating them into the existing managerial team; in other cases, cultivating the skills of young people, giving them adequate room to grow. Without adequate management, companies cannot grow and prosper. A family can bring many skills, but clearly it can never imagine to be able to develop all the skills that a company needs, especially in the presence of important changes in the *business*. Bringing in managers implies changes to a series of elements of company management: decision-making is a group process, systems defining objectives and control must be developed with care, career systems must be defined not only for family members but for everybody, and so on. Chiorino, and especially the people who have had the most responsibility in the company, successfully opened up to the contribution of capable and trustworthy people, without becoming sealed inside an anti-historic and reductive defence of the exclusive managerial role of the family.

Chiorino was often led by a pair of entrepreneurs, beginning with the Angelo and Fulvio duo. Frequently, in Biella and other places, the history of family operations is characterized by the productive synergy of two entrepreneurs who can successfully incorporate their skills. Perhaps this is

one of the secrets of the success of many family businesses, because discussion makes them accustomed to comparison and almost becomes a method of operation that helps find the best solution which may not always be the solution proposed by one of the two members of the entrepreneurial team but is an alternative route, resulting from discussion. Entrepreneurs are people in search of personal satisfaction who want to leave a mark in the history of a family, a company or even a geographical area. The ability to attenuate individuality and learn how to appreciate the contribution of another entrepreneur, especially a brother, is how many families have successfully faced the various challenges. This requires an education of parents, work that begins with everyone. A great help can come from understanding what the common good to pursue is. If the common good is continuity of the business, more than one's personal success, then it is possible to create the bases to begin investing in a reciprocal exchange without the anxiety of having to demonstrate at all costs of "being better", modestly accepting the contribution made by the other, accepting to perform the role that is most befitting one's nature without demanding to be recognized responsibilities that perhaps cannot be exercised with skill.

The passion for innovation: here is another of the lessons of this great history. Today, we talk a lot about the difficulties Italian companies face in research and it is argued, not without reason, that the necessary cooperation between companies and research centres (universities, among others) is not developed as it should. The history of Chiorino, on the other hand, is marked by investments in products and technologies developed with the important contribution of research centres or independent researchers. There are no magic formulas: innovation is the result of a conviction, of intuition and hard work. The conviction that research is a solid element to sustain the competitive advantage is a destiny that marks the history of some companies and becomes a rule to live by. Intuition comes from paying close attention to the finished products markets which demand new items and the research market which supplies innovation. Chiorino has demonstrated its ability to courageously stand at the cross roads of these paths, without allowing itself to be dragged into rash projects, identifying sites of knowledge production and relying on them in a relationship of mutual cooperation.

The passion for geographic expansion: a company does not become a large group unless it can be fully introduced into new territorial areas. Chiorino, like other sound family operations, has pursued with determination geographic development, first in Italy, then in Europe and finally, around the world. Competing internationally is not only an issue of investment. To successfully take on the challenge of globalization, one has to be a "citizen of the world", feel at home in every part of the world, and learn the language and customs of many countries. Chiorino and its managers are open to the world; they are curious to understand how to capture new opportunities in all parts of the globe. This is another of the keys to success that this family and this company hold.

We cannot overcome a challenge in the world without planting roots in a setting where the necessary energy can be drawn. Chiorino is located in Biella. Biella as a district possessed certain characteristics that unquestionably influenced the history of the company: the sense of duty, hard work, enormous dedication, honesty, and a desire to achieve that is contrary to the culture of subsidiarity and internationalism (already clear in the building sector in the 19th century). But not all Biella companies have successfully taken advantage of these values. Only a few of these, Chiorino included, have used these values, innovatively combining them with what they could pick up from other geographic contexts. As Gregorio Chiorino likes to say, using an effective metaphor: "you have to combine roots with wings".

All these elements, and perhaps a few more, have led Chiorino to reach the milestone of a century of operations in good economic conditions and with a healthy degree of confidence in the future. But the challenges are certain to continue. In attempting to look at the future of Chiorino, we see at least three challenges that are worthy of special attention. The first is the generational change, which the family has already overcome in the past, but which is on the horizon. The young members of the family will have to accrue the necessary passion and skills, steadily facing the various changes, understanding to keep their eye on the future and not the present, trusting in the help of those who came before them. The second challenge relates to the size and ownership. Chiorino is one of those medium-sized companies that are finally obtaining the first well-deserved attention from politicians and opinion-makers. But the size question is

still contemporary: perhaps it will be necessary to grow further to plant deeper roots into new and more difficult markets. And, to make this jump, the next question might be if it wouldn't be appropriate to involve third party shareholders: a *private equity* fund or stock exchange market. Managerial research has demonstrated that to develop and grow, not all businesses need these experiences, but it would be unwise not to calmly evaluate some of the advantages (and disadvantages) of a similar decision. Lastly, there is the question of management. We have written that Chiorino was a family-operated business that understood how to use managers from outside the family in carrying on its activity. Now, however, we see the need for another transition, looking to evaluate the opportunities to assume other managers, Italians or foreign, who can make a special contribution to the Group. To increase their attractiveness to the best managers, some companies in Biella have had to relocate at least some of their offices to Milan: even Chiorino has to ask whether localization cannot be one of the next impending challenges. It is not my intention to disavow the positive value of its Biella location which, certainly, will remain a significant asset of the Group; we want to remember the need to have a less concentrated geographic structure as regards Group management.

The future must be faced, with confidence, aware of one's strengths, with determination, without becoming entangled by the famous but doomed axiom "we have always done it this way", at the base of many failures. Chiorino's capital is surely its strength, but, as Maurizio Sella states: "a poor income statement is what kills an enterprise". In other words, the challenge to overcome is not maintaining the solidity of the business, but reinforcing the foundations of the competitive advantage and the profitability of the business.

For our part, we can only express our conviction, which these pages have contributed to reinforcing, that the Chiorino family and its associates all have the energy necessary to overcome the forthcoming challenges in the life of this century-old group.

*Statistical and theme appendices*

*Table A1. Conceria Lorenzo Chiorino, typical operating figures, 1917-1942 (current values).*

| | Gross profit | Depreciation and amortization | Net income | Capital | Reserves | Employee severance indemnity | Reserve for income taxes | Reserve for plant expansion | Net equity |
|---|---|---|---|---|---|---|---|---|---|
| 1917 | no data | no data | no data | no data | no data | | | | 157.243 |
| 1918 | 348,962[a] | 72,352 [a] | 175,622 [a] | 469,674 | 152,938 | | | | 622,611 |
| 1919 | 7,959 | 73,622 | -165,349 | 469,674 | 152,938 | | | | 622,611 |
| 1920 | 180,328 | 80,461 | 21,224 | 388,486 | 90,000 | | | | 478,486 |
| 1921 | 399,134 | 140,313 | 23,370 | 411,856 | 90,000 | | | | 501,856 |
| 1922 | 543,252 | 80,282 | 235,499 | 411,856 | 325,499 | | | | 737,355 |
| 1923 | 577,730 | 175,007 | 109,752 | 411,856 | 435,251 | | | | 847,107 |
| 1924 | 579,972 | 148,766 | 152,893 | 450,000 | 550,000 | | | | 1,000,000 |
| 1925 | 758,330 | 21,341 | 367,007 | 1,100,000 | 267,007 | | | | 1,367,007 |
| 1926 | 504,807 | 12,798 | 17,601 | 1,200,000 | 184,608 | | | | 1,384,608 |
| 1927 | 327,088 | 0 | -140,144 | 1,200,000 | 44,464 | | | | 1,244,464 |
| 1928 | 816,316 | 26,235 | 413,383 | 1,350,000 | 390,795 | | | | 1,740,795 |
| 1929 | 566,898 | 44,416 | 80,000 | 1,400,000 | 390,795 | | | | 1,790,795 |
| 1930 | 367,839 | 192,681 | -39,444 | 1,449,290 | 156,807 | | | | 1,606,097 |
| 1931 | 263,934 | 63,301 | -99,164 | 1,383,226 | 93,230 | | | | 1,476,456 |
| 1932 | 188,189 | 0 | -131,299 | 1,300,000 | 45,158 | | | | 1,345,158 |
| 1933 | 209,371 | 204,529 | 4,842 | 1,350,000 | 0 | | | | 1,350,000 |
| 1934 | 119,158 | 85,332 | 0 | 1,350,000 | 0 | | | | 1,350,000 |
| 1935 | 1,231,254 | 526,895 | 100,000 | 1,350,000 | 100,000 | | | | 1,450,000 |
| 1936 | 976,958 | 204,721 | 493,109 | 1,350,000 | 150,000 | 50,000 | | | 1,500,000 |
| 1937 | 1,925,281 | 391,770 | 1,191,770 | 2,000,000 | 250,000 | 100,000 | | | 2,250,000 |
| 1938 | 1,415,094 | 120,374 | 620,374 | 2,250,000 | 500,000 | 100,000 | | | 2,750,000 |
| 1939 | 1,931,018 | 476,815 | 1,026,815 | 2,500,000 | 750,000 | 150,000 | | | 3,250,000 |
| 1940 | 5,299,884 | 1,159,688 | 4,145,362 | 3,000,000 | 1,500,000 | 250,000 | 250,000 | 1,385,674 | 4,500,000 |
| 1941 | 6,634,792 | 581,425 | 5,044,360 | 3,000,000 | 1,500,000 | 250,000 | 400,000 | 1,000,000 | 4,500,000 |
| 1942 | 6,209,439 | 778,890 | 1,746,388 | 3,000,000 | 2,000,000 | 200,000 | 800,000 | 1,000,000 | 5,000,000 |

Note: *a. dato cumulativo 1917-1918.*

*Table A2. Conceria Lorenzo Chiorino, typical operating figures, 1917-1942 (1938 values).*

| | Gross profit | Depreciation and amortization | Net income | Capital | Reserves | Employee severance indemnity | Reserve for income taxes | Reserve for plant expansion | Net equity |
|---|---|---|---|---|---|---|---|---|---|
| 1917 | no data | no data | no data | no data | no data | | | | 360.895 |
| 1918 | 574,380[a] | 119,089 [a] | 289,069 [a] | 773,067 | 251,731 | | | | 1,024,798 |
| 1919 | 12,904 | 119,372 | -268,099 | 761,533 | 247,975 | | | | 1,009,508 |
| 1920 | 222,506 | 99,280 | 26,188 | 479,349 | 111,050 | | | | 590,400 |
| 1921 | 416,275 | 146,338 | 24,374 | 429,544 | 93,865 | | | | 523,409 |
| 1922 | 570,002 | 84,235 | 247,095 | 432,135 | 341,526 | | | | 773,662 |
| 1923 | 609,709 | 184,694 | 115,828 | 434,653 | 459,344 | | | | 893,997 |
| 1924 | 591,262 | 151,662 | 155,869 | 458,759 | 560,706 | | | | 1,019,465 |
| 1925 | 688,197 | 19,367 | 333,065 | 998,267 | 242,313 | | | | 1,240,580 |
| 1926 | 424,695 | 10,767 | 14,808 | 1,009,561 | 155,311 | | | | 1,164,871 |
| 1927 | 300,985 | 0 | -128,960 | 1,104,234 | 40,916 | | | | 1,145,149 |
| 1928 | 810,536 | 26,049 | 410,456 | 1,340,441 | 388,027 | | | | 1,728,468 |
| 1929 | 554,025 | 43,407 | 78,183 | 1,368,210 | 381,921 | | | | 1,750,131 |
| 1930 | 371,255 | 194,471 | -39,810 | 1,462,750 | 158,263 | | | | 1,621,013 |
| 1931 | 294,866 | 70,720 | -110,785 | 1,545,331 | 104,156 | | | | 1,649,488 |
| 1932 | 215,903 | 0 | -150,635 | 1,491,449 | 51,808 | | | | 1,543,257 |
| 1933 | 255,298 | 249,393 | 5,905 | 1,646,129 | 0 | | | | 1,646,129 |
| 1934 | 153,204 | 109,713 | 0 | 1,735,714 | 0 | | | | 1,735,714 |
| 1935 | 1,560,881 | 667,954 | 126,772 | 1,711,417 | 126,772 | | | | 1,838,189 |
| 1936 | 1,151,528 | 241,302 | 581,222 | 1,591,228 | 176,803 | 50,000 | | | 1,768,032 |
| 1937 | 2,073,123 | 421,854 | 1,283,286 | 2,153,579 | 269,197 | 100,000 | | | 2,422,777 |
| 1938 | 1,415,094 | 120,374 | 620,374 | 2,250,000 | 500,000 | 100,000 | | | 2,750,000 |
| 1939 | 1,849,336 | 456,646 | 983,381 | 2,394,250 | 718,275 | 150,000 | | | 3,112,525 |
| 1940 | 4,349,367 | 951,702 | 3,401,904 | 2,461,960 | 1,230,980 | 250,000 | 250,000 | 1,385,674 | 3,692,939 |
| 1941 | 4,705,734 | 412,376 | 3,577,718 | 2,127,753 | 1,063,877 | 250,000 | 400,000 | 1,000,000 | 3,191,630 |
| 1942 | 3,810,338 | 477,955 | 1,071,647 | 1,840,909 | 1,227,273 | 200,000 | 800,000 | 1,000,000 | 3,068,182 |

*Note:* a. cumulative data 1917-1918

*Table A3. Geographic breakdown of sales, 1961-2004 (figures in millions).*

| | Total sales | | Total sales, Italy | | Total sales, int'l | | Values % | |
|---|---|---|---|---|---|---|---|---|
| Year | Current lire | 2004 lire | Current lire | 2004 lire | Lire corr. | Lire 2004 | Italy | Intern. |
| 1961 | 353 | 7,391 | 329 | 6,888 | 24 | 502 | 93.20 | 6.80 |
| 1962 | 400 | 7,968 | 380 | 7,570 | 20 | 398 | 95.00 | 5.00 |
| 1963 | 444 | 8,227 | 413 | 7,652 | 31 | 574 | 93.02 | 6.98 |
| 1964 | 368 | 6,437 | 343 | 6,000 | 25 | 437 | 93.21 | 6.79 |
| 1965 | - | - | - | - | - | - | - | - |
| 1966 | 426 | 7,001 | 362 | 5,949 | 64 | 1,052 | 84.98 | 15.02 |
| 1967 | 461 | 7,428 | 382 | 6,155 | 79 | 1,273 | 82.86 | 17.14 |
| 1968 | 427 | 6,793 | 353 | 5,616 | 74 | 1,177 | 82.67 | 17.33 |
| 1969 | 489 | 7,567 | 418 | 6,468 | 71 | 1,099 | 85.48 | 14.52 |
| 1970 | 572 | 8,423 | 455 | 6,700 | 117 | 1,723 | 79.55 | 20.45 |
| 1971 | 621 | 8,709 | 410 | 5,750 | 211 | 2,959 | 66.02 | 33.98 |
| 1972 | 843 | 11,194 | 507 | 6,732 | 337 | 4,475 | 60.14 | 39.98 |
| 1973 | 1,226 | 14,750 | 784 | 9,432 | 442 | 5,318 | 63.95 | 36.05 |
| 1974 | 1,795 | 18,080 | 1,043 | 10,506 | 752 | 7,574 | 58.11 | 41.89 |
| 1975 | 1,805 | 15,517 | 1,113 | 9,568 | 692 | 5,949 | 61.66 | 38.34 |
| 1976 | 2,789 | 20,576 | 1,673 | 12,343 | 1,116 | 8,234 | 59.99 | 40.01 |
| 1977 | 3,552 | 22,189 | 2,074 | 12,956 | 1,478 | 9,233 | 58.39 | 41.61 |
| 1978 | 4,128 | 22,933 | 1,867 | 10,372 | 2,261 | 12,561 | 45.23 | 54.77 |
| 1979 | 5,694 | 27,332 | 2,960 | 14,208 | 2,734 | 13,123 | 51.98 | 48.02 |
| 1980 | 7,171 | 28,413 | 3,905 | 15,472 | 3,266 | 12,941 | 54.46 | 45.54 |
| 1981 | 7,931 | 26,474 | 4,231 | 14,123 | 3,700 | 12,351 | 53.35 | 46.65 |
| 1982 | 9,287 | 26,645 | 5,796 | 16,629 | 3,491 | 10,016 | 62.41 | 37.59 |
| 1983 | 9,787 | 24,420 | 4,572 | 11,408 | 5,215 | 13,012 | 46.72 | 53.28 |
| 1984 | 13,679 | 30,865 | 6,005 | 13,550 | 7,674 | 17,316 | 43.90 | 56.10 |
| 1985 | 15,679 | 32,576 | 6,892 | 14,320 | 8,787 | 18,257 | 43.96 | 56.04 |
| 1986 | 18,763 | 36,744 | 7,297 | 14,290 | 11,466 | 22,454 | 38.89 | 61.11 |
| 1987 | 20,305 | 38,007 | 7,279 | 13,625 | 13,026 | 24,382 | 35.85 | 64.15 |
| 1988 | 23,522 | 41,951 | 8,235 | 14,687 | 15,287 | 27,264 | 35.01 | 64.99 |
| 1989 | 27,024 | 45,208 | 9,100 | 15,223 | 17,924 | 29,985 | 33.67 | 66.33 |
| 1990 | 30,751 | 48,485 | 9,881 | 15,579 | 20,870 | 32,906 | 32.13 | 67.87 |
| 1991 | 32,742 | 48,517 | 10,140 | 15,025 | 22,602 | 33,492 | 30.97 | 69.03 |
| 1992 | 35,991 | 50,593 | 11,294 | 15,876 | 24,697 | 34,717 | 31.38 | 68.62 |
| 1993 | 42,086 | 56,778 | 12,134 | 16,370 | 29,952 | 40,408 | 28.83 | 71.17 |
| 1994 | 51,860 | 67,314 | 17,465 | 22,670 | 34,395 | 44,645 | 33.68 | 66.32 |
| 1995 | 60,812 | 74,920 | 21,054 | 25,939 | 39,758 | 48,982 | 34.62 | 65.38 |
| 1996 | 55,105 | 65,344 | 20,500 | 24,309 | 34,605 | 41,035 | 37.20 | 62.80 |
| 1997 | 65,293 | 76,106 | 22,002 | 25,646 | 43,291 | 50,460 | 33.70 | 66.30 |
| 1998 | 60,406 | 69,165 | 21,838 | 25,005 | 38,568 | 44,160 | 36.15 | 63.85 |
| 1999 | 62,893 | 70,893 | 21,198 | 23,894 | 41,695 | 46,999 | 33.70 | 66.30 |
| 2000 | 76,641 | 84,228 | 24,411 | 26,828 | 52,230 | 57,401 | 31.85 | 68.15 |
| 2001 | 70,649 | 75,623 | 24,510 | 26,236 | 46,139 | 49,387 | 34.69 | 65.31 |
| 2002 | 71,586 | 74,807 | 22,904 | 23,935 | 48,682 | 50,873 | 32.00 | 68.00 |
| 2003 | 71,994 | 73,427 | 23,611 | 24,081 | 48,384 | 49,347 | 32.80 | 67.21 |
| 2004 | 71,884 | 71,884 | 23,774 | 23,774 | 48,111 | 48,111 | 33.07 | 66.93 |

*Table A4. Composition of sales by product lines, 1961-2004 (figures in millions).*

| | *Leather* | | *Rubber* | | *Belts and belting* | | *Total sales* | |
|---|---|---|---|---|---|---|---|---|
| | *Current lire* | *2004 lire* | *Current lire* | *2004 lire* | *Current lire* | *2004 lire* | *Current lire* | *2004 lire* |
| *1961* | *323* | *6,763* | - | - | - | - | *353* | *7,391* |
| *1962* | *365* | *7,271* | - | - | - | - | *400* | *7,968* |
| *1963* | *404* | *7,485* | - | - | - | - | *444* | *8,227* |
| *1964* | *333* | *5,825* | - | - | - | - | *368* | *6,437* |
| *1965* | - | - | - | - | - | - | - | - |
| *1966* | *360* | *5,916* | *26* | *427* | - | - | *426* | *7,001* |
| *1967* | *360* | *5,800* | *61* | *983* | - | - | *461* | *7,428* |
| *1968* | *320* | *5,091* | *67* | *1,066* | - | - | *427* | *6,793* |
| *1969* | *360* | *5,571* | *89* | *1,377* | - | - | *489* | *7,567* |
| *1970* | *397* | *5,846* | *120* | *1,767* | - | - | *572* | *8,423* |
| *1971* | *380* | *5,329* | *161* | *2,258* | *20* | *280* | *621* | *8,709* |
| *1972* | *383* | *5,086* | *320* | *4,249* | *60* | *797* | *843* | *11,194* |
| *1973* | *530* | *6,376* | *466* | *5,606* | *120* | *1,444* | *1,226* | *14,750* |
| *1974* | *745* | *7,504* | *740* | *7,454* | *160* | *1,612* | *1,795* | *18,080* |
| *1975* | *727* | *6,250* | *728* | *6,258* | *170* | *1,461* | *1,805* | *15,517* |
| *1976* | *929* | *6,854* | *1,114* | *8,219* | *488* | *3,600* | *2,789* | *20,576* |
| *1977* | *1,125* | *7,028* | *1,458* | *9,108* | *644* | *4,023* | *3,552* | *22,189* |
| *1978* | *1,230* | *6,833* | *1,613* | *8,961* | *876* | *4,867* | *4,128* | *22,933* |
| *1979* | *1,419* | *6,811* | *2,189* | *10,507* | *1,603* | *7,695* | *5,694* | *27,332* |
| *1980* | *1,806* | *7,156* | *2,684* | *10,635* | *1,950* | *7,726* | *7,171* | *28,413* |
| *1981* | *1,771* | *5,912* | *2,709* | *9,043* | *2,678* | *8,939* | *7,931* | *26,474* |
| *1982* | *1,580* | *4,533* | *2,780* | *7,976* | *3,958* | *11,356* | *9,287* | *26,645* |
| *1983* | *1,561* | *3,895* | *3,096* | *7,725* | *3,970* | *9,906* | *9,787* | *24,420* |
| *1984* | *1,500* | *3,385* | *4,253* | *9,596* | *6,230* | *14,057* | *13,679* | *30,865* |
| *1985* | *1,474* | *3,063* | *4,800* | *9,973* | *7,960* | *16,538* | *15,679* | *32,576* |
| *1986* | *1,616* | *3,165* | *5,629* | *11,023* | *10,050* | *19,681* | *18,763* | *36,744* |
| *1987* | *354* | *663* | *5,084* | *9,516* | *13,002* | *24,337* | *20,305* | *38,007* |
| *1988* | *275* | *490* | *5,322* | *9,492* | *15,436* | *27,530* | *23,522* | *41,951* |
| *1989* | - | - | *5,922* | *9,907* | *18,947* | *31,696* | *27,024* | *45,208* |
| *1990* | - | - | *7,268* | *11,459* | *21,513* | *33,920* | *30,751* | *48,485* |
| *1991* | - | - | *8,414* | *12,468* | *21,341* | *31,623* | *32,742* | *48,517* |
| *1992* | - | - | *9,155* | *12,869* | *23,415* | *32,914* | *35,991* | *50,593* |
| *1993* | - | - | *10,256* | *13,836* | *28,609* | *38,596* | *42,086* | *56,778* |
| *1994* | - | - | *12,915* | *16,764* | *36,015* | *46,747* | *51,860* | *67,314* |
| *1995* | - | - | *15,652* | *19,283* | *42,027* | *51,777* | *60,812* | *74,920* |
| *1996* | - | - | *13,847* | *16,420* | *38,142* | *45,229* | *55,105* | *65,344* |
| *1997* | - | - | *15,908* | *18,542* | *45,324* | *52,830* | *65,293* | *76,242* |
| *1998* | - | - | *14,838* | *16,990* | *42,258* | *48,385* | *60,406* | *69,167* |
| *1999* | - | - | *13,195* | *14,873* | *45,032* | *50,760* | *62,893* | *70,892* |
| *2000* | - | - | *16,647* | *18,295* | *55,009* | *60,455* | *76,641* | *84,230* |
| *2001* | - | - | *16,961* | *18,155* | *49,770* | *53,274* | *70,649* | *75,631* |
| *2002* | - | - | *15,518* | *16,216* | *51,916* | *54,252* | *71,586* | *74,807* |
| *2003* | - | - | *15,095* | *15,395* | *52,457* | *53,501* | *71,994* | *73,428* |
| *2004* | - | - | *14,835* | *14,835* | *53,289* | *53,289* | *71,884* | *71,883* |

*Table A5. Percentage of sales by product lines, 1961-2004*

| | Leather | Rubber | Belts and belting | Miscellaneous | Total sales |
|---|---|---|---|---|---|
| 1961 | 91.50 | - | - | 8.50 | 100.00 |
| 1962 | 91.25 | - | - | 8.75 | 100.00 |
| 1963 | 90.99 | - | - | 9.01 | 100.00 |
| 1964 | 90.49 | - | - | 9.51 | 100.00 |
| 1965 | - | - | - | - | 100.00 |
| 1966 | 84.51 | 6.10 | 0.00 | 9.39 | 100.00 |
| 1967 | 78.09 | 13.23 | 0.00 | 8.68 | 100.00 |
| 1968 | 74.94 | 15.69 | 0.00 | 9.37 | 100.00 |
| 1969 | 73.62 | 18.20 | 0.00 | 8.18 | 100.00 |
| 1970 | 69.41 | 20.98 | 0.00 | 9.62 | 100.00 |
| 1971 | 61.19 | 25.93 | 3.22 | 9.66 | 100.00 |
| 1972 | 45.43 | 37.96 | 7.12 | 9.49 | 100.00 |
| 1973 | 43.23 | 38.01 | 9.79 | 8.97 | 100.00 |
| 1974 | 41.50 | 41.23 | 8.91 | 8.36 | 100.00 |
| 1975 | 40.28 | 40.33 | 9.42 | 9.97 | 100.00 |
| 1976 | 33.31 | 39.94 | 17.50 | 9.25 | 100.00 |
| 1977 | 31.67 | 41.05 | 18.13 | 9.15 | 100.00 |
| 1978 | 29.80 | 39.07 | 21.22 | 9.91 | 100.00 |
| 1979 | 24.92 | 38.44 | 28.15 | 8.48 | 100.00 |
| 1980 | 25.18 | 37.43 | 27.19 | 10.19 | 100.00 |
| 1981 | 22.33 | 34.16 | 33.77 | 9.75 | 100.00 |
| 1982 | 17.01 | 29.93 | 42.62 | 10.43 | 100.00 |
| 1983 | 15.95 | 31.63 | 40.56 | 11.85 | 100.00 |
| 1984 | 10.97 | 31.09 | 45.54 | 12.40 | 100.00 |
| 1985 | 9.40 | 30.61 | 50.77 | 9.22 | 100.00 |
| 1986 | 8.61 | 30.00 | 53.56 | 7.82 | 100.00 |
| 1987 | 1.74 | 25.04 | 64.03 | 9.18 | 100.00 |
| 1988 | 1.17 | 22.63 | 65.62 | 10.58 | 100.00 |
| 1989 | 0.00 | 21.91 | 70.11 | 7.97 | 100.00 |
| 1990 | 0.00 | 23.64 | 69.96 | 6.41 | 100.00 |
| 1991 | 0.00 | 25.70 | 65.18 | 9.12 | 100.00 |
| 1992 | 0.00 | 25.44 | 65.06 | 9.51 | 100.00 |
| 1993 | 0.00 | 24.37 | 67.98 | 7.65 | 100.00 |
| 1994 | 0.00 | 24.90 | 69.45 | 5.65 | 100.00 |
| 1995 | 0.00 | 25.74 | 69.11 | 5.15 | 100.00 |
| 1996 | 0.00 | 25.13 | 69.22 | 5.65 | 100.00 |
| 1997 | 0.00 | 24.32 | 69.29 | 6.39 | 100.00 |
| 1998 | 0.00 | 24.56 | 69.95 | 5.48 | 100.00 |
| 1999 | 0.00 | 20.98 | 71.60 | 7.42 | 100.00 |
| 2000 | 0.00 | 21.72 | 71.77 | 6.51 | 100.00 |
| 2001 | 0.00 | 24.00 | 70.44 | 5.56 | 100.00 |
| 2002 | 0.00 | 21.68 | 72.52 | 5.80 | 100.00 |
| 2003 | 0.00 | 20.97 | 72.86 | 6.17 | 100.00 |
| 2004 | 0.00 | 20.64 | 74.13 | 5.23 | 100.00 |

*Table A6. Composition of the labour force, 1961-2004*

| | *Factory personnel* | | *Clerical workers* | | *Total* |
|---|---|---|---|---|---|
| | | *(%)* | | *(%)* | |
| *1961* | *no data* | | *no data* | | *95* |
| *1962* | *no data* | | *no data* | | *96* |
| *1963* | *no data* | | *no data* | | *96* |
| *1964* | *no data* | | *no data* | | *85* |
| *1965* | *no data* | | *no data* | | *78* |
| *1966* | *no data* | | *no data* | | *91* |
| *1967* | *no data* | | *no data* | | *93* |
| *1968* | *no data* | | *no data* | | *97* |
| *1969* | *no data* | | *no data* | | *101* |
| *1970* | *89* | *(82.41)* | *19* | *(17.59)* | *108* |
| *1971* | *89* | *(84.76)* | *16* | *(15.24)* | *105* |
| *1972* | *86* | *(82.69)* | *18* | *(17.31)* | *104* |
| *1973* | *94* | *(81.03)* | *22* | *(18.97)* | *116* |
| *1974* | *110* | *(82.09)* | *24* | *(17.91)* | *134* |
| *1975* | *108* | *(81.82)* | *24* | *(18.18)* | *132* |
| *1976* | *110* | *(80.88)* | *26* | *(19.12)* | *136* |
| *1977* | *112* | *(81.16)* | *26* | *(18.84)* | *138* |
| *1978* | *123* | *(82.00)* | *27* | *(18.00)* | *150* |
| *1979* | *124* | *(81.05)* | *29* | *(18.95)* | *153* |
| *1980* | *118* | *(80.82)* | *28* | *(19.18)* | *146* |
| *1981* | *110* | *(79.14)* | *29* | *(20.86)* | *139* |
| *1982* | *106* | *(77.94)* | *30* | *(22.06)* | *136* |
| *1983* | *111* | *(76.55)* | *34* | *(23.45)* | *145* |
| *1984* | *119* | *(75.32)* | *39* | *(24.68)* | *158* |
| *1985* | *113* | *(73.86)* | *40* | *(26.14)* | *153* |
| *1986* | *120* | *(74.07)* | *42* | *(25.93)* | *162* |
| *1987* | *123* | *(75.93)* | *39* | *(24.07)* | *162* |
| *1988* | *128* | *(67.72)* | *61* | *(32.28)* | *189* |
| *1989* | *145* | *(70.73)* | *60* | *(29.27)* | *205* |
| *1990* | *152* | *(73.08)* | *56* | *(26.92)* | *208* |
| *1991* | *155* | *(72.43)* | *59* | *(27.57)* | *214* |
| *1992* | *153* | *(70.83)* | *63* | *(29.17)* | *216* |
| *1993* | *154* | *(70.64)* | *64* | *(29.36)* | *218* |
| *1994* | *167* | *(70.17)* | *71* | *(29.83)* | *238* |
| *1995* | *188* | *(72.31)* | *72* | *(27.69)* | *260* |
| *1996* | *190* | *(71.43)* | *76* | *(28.57)* | *266* |
| *1997* | *206* | *(71.03)* | *84* | *(28.97)* | *290* |
| *1998* | *196* | *(69.75)* | *85* | *(30.25)* | *281* |
| *1999* | *192* | *(67.84)* | *91* | *(32.16)* | *283* |
| *2000* | *207* | *(68.54)* | *95* | *(31.46)* | *302* |
| *2001* | *208* | *(67.75)* | *99* | *(32.25)* | *307* |
| *2002* | *201* | *(67.00)* | *99* | *(33.00)* | *300* |
| *2003* | *199* | *(66.78)* | *99* | *(33.22)* | *298* |
| *2004* | *201* | *(67.22)* | *98* | *(32.78)* | *299* |

*Table A7. Total sales, 1961-2004 (values in millions).*

| | Current lire | 2004 lire |
|---|---|---|
| 1961 | 3.72 | 77.80 |
| 1962 | 4.17 | 83.00 |
| 1963 | 4.63 | 85.69 |
| 1964 | 4.33 | 75.73 |
| 1965 | - | - |
| 1966 | 4.68 | 76.93 |
| 1967 | 4.96 | 79.87 |
| 1968 | 4.40 | 70.03 |
| 1969 | 4.84 | 74.92 |
| 1970 | 5.30 | 77.99 |
| 1971 | 5.91 | 82.95 |
| 1972 | 8.11 | 107.63 |
| 1973 | 10.57 | 127.15 |
| 1974 | 13.40 | 134.93 |
| 1975 | 13.67 | 117.55 |
| 1976 | 20.51 | 151.30 |
| 1977 | 25.74 | 160.79 |
| 1978 | 27.52 | 152.89 |
| 1979 | 37.22 | 178.64 |
| 1980 | 49.12 | 194.61 |
| 1981 | 57.06 | 190.46 |
| 1982 | 68.29 | 195.92 |
| 1983 | 67.50 | 168.41 |
| 1984 | 86.58 | 195.35 |
| 1985 | 102.48 | 212.92 |
| 1986 | 115.82 | 226.81 |
| 1987 | 125.34 | 234.61 |
| 1988 | 124.46 | 221.97 |
| 1989 | 131.82 | 220.53 |
| 1990 | 147.84 | 233.10 |
| 1991 | 153.00 | 226.72 |
| 1992 | 166.63 | 234.22 |
| 1993 | 193.06 | 260.45 |
| 1994 | 217.90 | 282.83 |
| 1995 | 233.89 | 288.16 |
| 1996 | 207.16 | 245.65 |
| 1997 | 225.15 | 262.43 |
| 1998 | 214.97 | 246.14 |
| 1999 | 222.24 | 250.51 |
| 2000 | 253.78 | 278.90 |
| 2001 | 230.13 | 246.33 |
| 2002 | 238.62 | 249.36 |
| 2003 | 241.59 | 246.40 |
| 2004 | 240.41 | 240.41 |

# *History of tanning in Biella*

*Gian Paolo Chiorino**

*I would like to tell the story of a company, Chiorino S.p.A., which in the first fifty years of its life was a tanning business and in the second fifty years, made a radical change in its production, its processing and its clientele. Thus, it seems right to remember the history, which many neglect to consider, of the tanning industry in Biella where this company operated and prospered for half a century.*

*It is a long and interesting story, the result of slow progress and improvements made first by humble craftsmen and later by small businesses and finally by industries that have created opportunities in employment, investment in machinery and research, optimal use of the hides of the animals and the leather obtained from it.*

## *Tanneries in Biella*

*Production sites, today as a thousand years ago, are not the result of chance but a series of concurrent factors that have made them grow in a certain place. What reasons led to the rise of tanning craftsmen in medieval Biella? Since these craftsmen helped develop the tanning industry in our city and Conceria Lorenzo Chiorino, it is worth exploring this issue further.*

*The study* "Le pelli e l'arte conciaria nel Piemonte medioevale" *by Anna Maria Nada Patrone tells us that several favourable factors developed in Biella, which included the availability of raw hides on site and in nearby Vercelli, the abundance of superior quality water and the irrigation ditches that carried it, the availability of vegetal extracts rich in tannins such as bark and oak-galls and finally, the availability of capital, modest in the Middle Ages but more copious thereafter, necessary to finance production that, from raw hide to finished leather, lasted from two to three years. Furthermore, equally important was the presence of*

* *I would like to thank Lodovico Sella, Nanni Magliola, Stefano Chiorino, Umberto Chiorino, Paola Sozzi, and Marco Serralunga for the information and photographs they generously provided to me.*

*shoemakers and saddlers, which needed tanneries for their own businesses. They organized into a powerful guild that also included tanneries and the desire and commitment in the work of the Biella craftsmen and a certain commercial spirit that led them to sell tanned products in other areas of the Piedmont.*

*These are the reasons why Biella has been known since the Middle Ages as a small but hardworking tanning centre, which grew and adapted over time and did not suffer the crises of other Italian districts, and kept working until the mid-1900s. The other Piedmont centres in medieval times were Turin, Vercelli, Casale, Valle d'Aosta, Cuneo and Canavo. The earliest records of the existence of "Pelliparii, qui pelles parant, praeparant et vendunt" in Biella in the 12th century are found in the documents of the municipal archives. In a deed of sale of 1197, among the witnesses listed was a certain "Conradus de Ardicione Pellipario Bugelle" and in another in the same year, "Silus Pelliparius" with land "in the region of Bugelle de super S. Mauricio". Also in the 12th century, mention is made of the "batenderia" along the Cervo River, where they not only beat wool and hemp but also ground oak bark for vegetable tanning.*

*Another mention of Biella was in the records that that the time of tanning work was established across the Piedmont by the municipal authorities, except for our city in which it was established by the guild of "of shoemakers and hide tanners" with their own charter since 1291 and part of the seven Biella trade guilds. It was the only congregation in Piedmont, along with Novara, that buried the poorest members after their death, an example of mutual aid and assistance and the rise of the earliest forms of service. To protect the work of its members, the shoemakers' and hide tanners' guild of Biella asked each member to not* "ad laborandum cum aliquo qui non sit de collegio," *namely to not teach the trade to outsiders. The fact that this was a powerful guild, among the seven craftsmen's guilds present in Biella, is confirmed by the fact that it elected four consuls, compared with the three consuls of the weavers and butchers and the two of the ironworkers, tailors, draperers, farmers and notaries. The guilds played an important role in Biella in the late Middle Ages. It is important to note that the charter of the Biella guild of hide tanners dates to only twenty years after the Venice guild, which indicates that the tanning trade was well established in the Middle Ages among our people and that the subsequent developments until the mid-1900s progressed with solid premises far back in time.*

*The presence of tanners in Biella is highlighted by the fresco entitled "Christ on Sunday" by an anonymous Biella master in 1470 of the inside of the Biella*

*Cathedral. The figure of Christ is wounded by many handcrafting tools and among these, we see several tools typical of the art of tanning. Christ's wounds represent the "sins" committed by craftsmen when they violated observance of the holiday rule, protected by the rules of the guilds.*

*The final document on Biella tanning of 1400 mainly concerns importation of raw hides and skins, which was encouraged and facilitated because the local livestock breeders did not provide enough raw materials for the existing tanneries, unlike Vercelli, where it was banned in order to protect local stock-breeders.*

*In the Renaissance, a sign of the presence of Biella craftsmen is found in the request addressed by them in 1586 to Carlo Emanuele I, Duke of Savoy, in favour of the* "pecia" *or* "feyra" *derived from sediment of wine in the barrels or burned marc and which was an excellent tanning agent, competing with the* "rusca" *derived from the macerated bark of oak trees. The entreaty stated that* "… la pecia passa et acconcia assay più presto che non solo rusca, lasciando (le pelli) d'avantagio si guastereno". *Namely, by blending the* pecia *and* rusca *together, the tanning substances penetrate and better and more quickly into the hide, which must remain for a shorter time in the tank and so does not rot. It is interesting to note that after the "rusca" has been used for tanning and thus, is poor in tannin, it is drawn from the bottom of the tanning tanks and pressed in pellets called* "mute" *which are then air-dried and used as a cheap source of fuel. Nothing was wasted.*

*Where did the earliest Biella tanners establish? As in other Italian and European cities, a district sprung up in the neighbourhood of Vernato, where skilled tradesmen set up shop. The area had the advantage of an important waterway, the Piazzo which branched off the Oropa River. There was a tanning lane in Biella, which still today bears the name Via Conciatori, and with the current-day Via della Rocchetta, marked off the area and kept the often unpleasant odour of tanning far from the city centre. The area changed little from the Middle Ages until the middle 1900s: the only changes came between the end of the 1800s and the start of the 1900s when some tanneries installed or expanded on the edges of the Piazzo, while another was set up along the Cervo River and some smaller tanneries emerged in Andorno, Mosso Santa Maria, Brusnengo, Crevacuore and Masserano.*

*Their size progressively changed over the centuries, growing from individual craftsmen's workshops, united in guilds, into organized businesses and then small industrial outfits, gradually improving the tanning methods and following devel-*

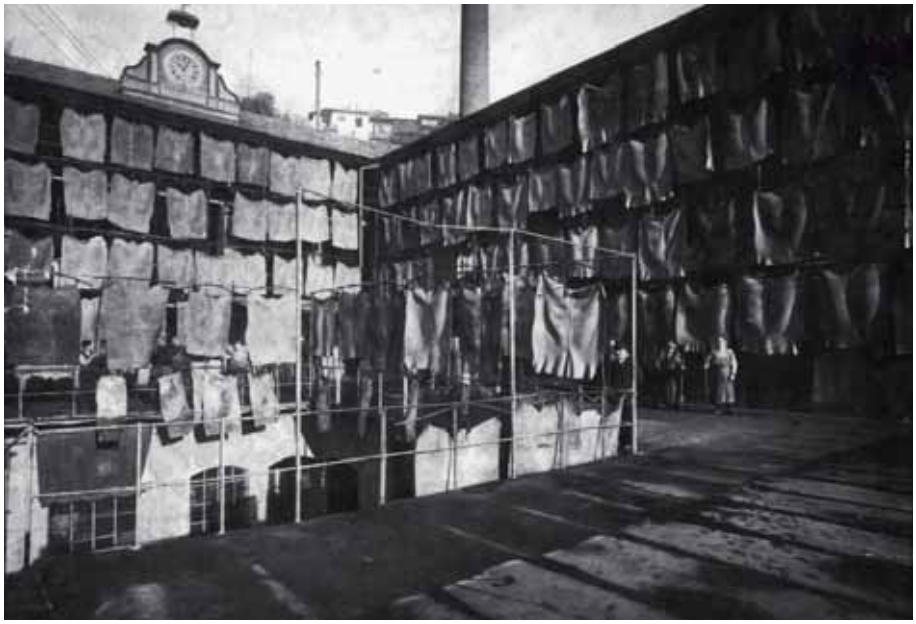
*opment of the other Italian and European tanning centres. A decisive change for the better took place in the second half of the 1800s apace with industrialization in Italy: Biella tanneries expanded their industrial spaces, employees, capital, tanning machinery and finishing and made upgrades to the technology, changing from empirical to experimental to theoretical.*

*Most of all, the product and its distribution changed in Biella, quickly passing from leathers for shoemakers and saddlers, gloves and furriers, to only leather for industrial manufacturing uses, despite the fact that part of Biella's tanning production could be used for other applications and was sold in the form of half-processed goods to craftsmen: Selleria Gallina, also in Vernato, was one example of a large-scale local leather user. This radical and comprehensive change in the use of Biella leather was a decision related to the textile and mechanical textile industry of the zone and its product demands.*

*But let's first examine the changeover in Biella from small-scale tanning to industry. The first small industrial reality was Conceria Antonio Varale, founded in 1733, to produce hides for furriers and glove makers, on the present-day Via Ivrea, at the corner of Costa Nuova of Piazzo. In 1840, Conceria Varale was converted into the first Biella tannery to manufacture leather straps, in 1870, expanded further and in 1881, began to produce products for the textile industry. In 1900, on the death of Giuseppe Varale, the business of the company was carried on by Pietro Sozzi, successor on his mother's side, expanding into a 35,000-square-meter area in the hills of Vernato and acquiring the historic Conceria Strobino. The business continued with success until 1968 when it was downsized and finally closed in 1970. Lorenzo Chiorino joined this tannery at the end of the 1800s as an administrative and technical clerk; he was followed by his brother, Umberto.*

*Another old company, also in Vernato, was Conceria Magliola, which began operations in 1740 and was led in 1820 by Paolo Magliola, a native of Chiavazza, and later by his children and grandchildren until 1954. The book by Alessandro Roccavilla "Biella cent'anni fa" published in 1900 cites that Conceria Nipoti Paolo Magliola had an 8-horsepower steam engine and two hydraulic engines of the same power, as well as 60 tanning tanks. Leather for soles accounted for four-fifths of his production, while the other one-fifth was for uppers, with the speciality, "Buenos Aires leather". A great grandson of Paolo Magliola, Vittorio, left the company and joined up with Leone Bersano at the start of the 1900s to found the Conceria Bersano, also in Vernato, which closed 50 years later.*

*The Conceria Serralunga was also quite an old tannery: back in 1825,*



*1. Conceria Antonio Varale in Biella (circa 1910).*

*2. The Magliola tannery in Biella at the end of the 19th century (Archives of the Fondazione Sella).*

*records document that Pietro Serralunga, a native of Valle San Nicolao who settled in Piazzo in the late 1700s, was a small one-man tanner. His grandson, also called Pietro, founded the eponymous tannery in 1840 on the right bank of the Cervo River, which originally produced shoe, luggage and saddlery leather and soon moved on to industrial articles (transmission belts and "pickers") in 1886. Giovanni Battista, son of Pietro, further improved the quality of the product and was soon achieving a quality on par with the best known English, French and Belgian tanneries. In the last decade of the 1800s, his tannery won prizes and medals in Italian and international exhibitions. The Conceria Serralunga expanded in 1914 and continued its business until the 1980s, when it made the changeover to plastic materials, dedicating itself to the gardening and designer decor sector, catering directly to the final customer.*

*A better idea of which and how many tanneries were in Biella in the early 20th century is supplied by a series of statistics extracted from the census taken in 1873, from the "Guida del Biellese" by Pertusi and Ratti in 1892, the "Guida commerciale-industriale-amministrativa" of 1910, 1915 and 1926, "Il Biellese e le sue massime glorie" of 1938 and "L'industria biellese" by Andrea Coda Bertetto. Putting these scattered statistics in chronological order, we find the following situation:*

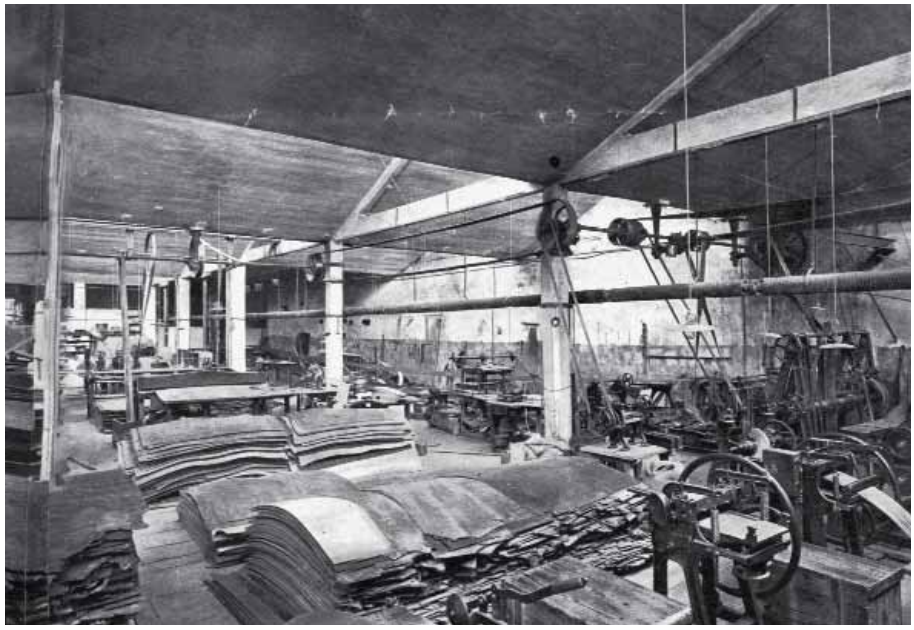
*1820 – Nineteen tanneries are recorded in Biella, mainly small, one-man outfits, except for the Varale, Paolo Magliola and F. Canova tanneries.*

*1873 – There were five tanneries in Biella with a developed industrial or small business structure (Varale, F.lli Magliola, Pietro Serralunga, Antonio Strobino and Felice Apostolo), two in Andorno (F.lli Cantono and Corte Luigi and Giacomo) and three in Crevacuore (F.lli Tasca, Giuseppe Serminato and Federico Sandretti). An interesting piece of trivia is that name Crevacuore itself derives from* crava *(goat) and* corium *(leather).*

*1892 – The same ten tanneries were still operating in Biella, Andorno and Crevacuore, with the addition of Francesco Mongini in Brusnengo, Cesare Berardo Boggio in Mosso Santa Maria, Marucchi F.lli fu Pietro and Francesco Patriarca in Masserano, all one-man outfits and probably not recorded in 1793, for a total of fourteen tanneries.*

*1910 – There were seven tanneries operating in Biella, with the addition of Magliola e Blotto and Lorenzo Chiorino. Fratelli Magliola changed its name to "Nipoti di Paolo Magliola".*

*1915 – There were seven tanneries in Biella: Lorenzo Chiorino changed its*



*1. Conceria Umberto Chiorino in Biella (circa 1930).*
*2. Conceria Pietro Serralunga in Biella (circa 1925).*

*name to F.lli Chiorino and Magliola e Blotto changed to Luigi Antonio Magliola. These tanneries employed a total of 450 workers.*

*1928 – Eight tanneries were operating in Biella, with the addition of Conceria Umberto Chiorino, after the split between Lorenzo and his brother. Magliola and Bersano tanneries merged to form the Conceria Bersano. There were still two tanneries in Andorno, while the tanneries previously operating in Brusnengo, Mosso Santa Maria, Masserano and Crevacuore are no longer documented: either they closed or remained small, one-man businesses. The tanneries employed a total of 480 employees.*

*1932-1933 - The number of employees fell to 430 due to the 1929 economic crisis.*

*1937 - There were eight tanneries in Biella with 550 employees in total: Serralunga employed 130, Varale had 100, Lorenzo Chiorino had 95, Luigi Antonio Magliola 85, Umberto Chiorino 70 and Bersano 50.*

*An interesting agreement between the seven tanneries, five from Biella and two from Andorno, was signed on 1 March 1908 "for the purpose of collective protection against the demands of the workers employed in their factories". The problem lay in the fact that a specialized and limited labour market, only 400 employees in total, was upset by the initiative of some leading or qualified employees to leave and go to competitor tanneries, as well as the bad habit of some of the negotiators to hire personnel without working papers and at lower salaries.*

*It would be useful to have an idea of the production dimension of the tanning industry in Italy, in the Piedmont and in Biella at that time. These are the key figures: in the early 20th century, there were 2,000 tanneries in Italy, with 30,000 employees and an average of 15 workers per company. In Piedmont, there were 194 tanneries with 3,016 employees, with an average of 15 workers per company; in the province of Novara, which included Biella, there were 81 companies with 785 employees with an average of 10 employees per company. In Biella, there were 9 tanneries with some 300 employees and an average of 32 employees per company, more than double the national and Piedmont averages.*

*Biella tanneries, having been founded to serve primarily the textile and textile machinery sector, aimed to meet the needs of these nearby industries. This was the period of the hydraulic turbines along the millstreams and rivers, steam engines that drove a single centralized motor. Utility power was transmitted to the various floors of the business by large belts that drove the drive shafts located under the ceiling of every floor and along the entire department. These drive shafts were connect-*

*ed to dozens of cast iron pulleys, one for every machine to power: looms, self-acting, wrapping mills, washing, fulling mills, dyeing and finishing machines. Every machine had a leather belt that was moved using a belt mover from the eccentric pulley to the fixed pulley to start it.*

*For Biella tanneries, there were kilometres of belts to produce, starting from the finest portion of cattle hides, the back, which was deprived of the bellies, shoulders and legs, reducing it to a rectangular shape, the "butt". Belts to produce and sell, competing with English production, whose quality was originally considered unmatched by the users. But we know what stuff Biella people are made of and what ideas they have: so Lorenzo, to stay in the Chiorino family, when he established his own business, worked during the day and studied at night to perfect the chrome tanning technique which was replacing the tannin vegetable tanned belts. As soon as possible, he recommended his son Fulvio to enrol in the Tanning Institute in London after graduating from accounting from the Bona school and later in tanning chemistry at the National Institute for the Leather Industry in Turin.*

*The textile industry did not require only belts, it also needed accessories for looms (lug straps for the sword of the shuttle, bumpers and buffers to stop their alternating movement, harness straps to move the heddles), for the wool combing machines (combing aprons), for the worsted spinning mills (rubbing aprons and cots), for the woollen spinning mills (condenser rubbers and condenser tapes).*

*With these needs and continuing technical advancements, the Biella tanning industry was stimulated to grow, invest in research, upgrade, and look for other sectors that had similar demands and could provide revenues during periods of crisis in the textile industry. Therefore, it expanded its production sectors, opened to exports, took advantage of the best characteristics of the hides and leather until it obtained the finest results that this natural material could offer. Fifty years of growth and progress in quality and quantity in the Biella tanning industry, in which Conceria Lorenzo Chiorino played an important role, got through two world wars overcoming the crisis in 1929 and other difficult moments.*

*In 1950, the situation of the Italian tanneries was as follows: 720 businesses (down from the 2,000 operating fifty years early) with 17,000 employees (down from the 30,000 in 1900) with an average of 25 employees per company, much higher in the North in which there were very important industries and lower in central and southern Italy where the two most known tanneries, Santa Croce sull'Arno in Tuscany and Solofra in Campania, much of the processing was assigned to small outsourcers.*

*In Piedmont in 1950, there were 81 businesses, six of which in Biella with 600 employees with an average of 100 employees per tannery, four times the national average. All were equipped for leather tanning for industrial uses and formed an island in the panorama of the Italian tanning industry. An appraisal made of the leather production sector in Biella, in 1950, reveals 400,000 kilos of leather for transmission belts and 575,000 kilos of leather for industrial uses, 80% was allocated to production of Italian and international textile industry accessories. In the thirty years between 1920 and 1950, Biella tanneries maintained their dimensions and production. The decline, slow but inexorable, began after 1950 with introduction of rubber and plastic materials in the area of industrial articles. In 1961, total employees in Biella tanneries decreased from 600 in 1950 to 320.*

*The chemical industry, research for new materials during and after World War II, synthetic rubber, and petroleum-based plastic materials, gradually took over the application spaces of industrial leather. Pickers in buffalo skin for looms were produced in high-density polyethylene; bump stops and leather picking sticks in chrome-tanned leather were replaced by rubberized canvas; the rubbing apron in nitrile rubber with canvas reinforcements took the place of vegetable-tanned leather. Several Biella tanneries closed; only two tanneries understood how to meet the challenges posed by the new materials and totally changed their production, machinery, and systems, and retrained the labour force. Conceria Chiorino was one of these two and today it celebrates the hundredth anniversary of its foundation.*

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Guido Corbetta is Professor AIdAF-Alberto Falck of Strategic Management in Family Business at Bocconi University and director of the Entrepreneurship and Entrepreneur Research Centre (EntER).

Michele D'Alessandro, PhD in Economic and Social History at the Bocconi University, is Jean Monnet Fellow at the European University Institute of Fiesole.