



Debora L. Spar

# Managing International Trade and Investment

C a s e b o o k

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**MANAGING INTERNATIONAL TRADE AND INVESTMENT (Casebook)**

**by Debora L. Spar**

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# **MANAGING INTERNATIONAL TRADE AND INVESTMENT**

## **COURSE OVERVIEW**

Despite the ease with which it is often conducted, doing business across borders is not the same as doing it at home. Rather, it entails a whole new set of managerial challenges: reassessing competitive advantage; evaluating diverse political environments and legal structures; considering the impact of currency fluctuations and trading regimes; and understanding widely disparate cultures and business norms. The purpose of MITI is to build a framework of analysis that enables managers to understand the challenges of international trade and investment and to master the opportunities they represent.

In contrast to many other courses on international business, MITI does not concentrate on the internal administration of the multinational enterprise. It focuses instead on the external environment of trade and investment. Specifically, it explores the interaction between firms and the international economy. It examines how macroeconomic and political forces shape the environment in which firms compete and how firms, in turn, influence the political and economic conditions that surround them. MITI is more about politics than most courses in international business, more about institutions and the legal constructs of trade.

The course consists of four inter-related modules. It begins with a brief series of cases designed to illustrate how the basic elements of competitiveness can shift and alter as firms cross national boundaries. Factors that define a firm's strategy and success in one market may prove illusive or ill-fitting in another. Perceptions of a product's value may vary; so can industrial structures, relations with suppliers, terms of competition, and the interests of would-be customers. To operate successfully in new markets, firms must analyze these changes and respond effectively to them.

The second module expands our level of analysis to the state, examining how national policies shape and constrain the climate for international business. Using a series of company-based cases, we will investigate how firms feel the impact of foreign governments' policies and what tools are available for predicting, or avoiding, or even employing the long arm of government policy. The third module then extends this analysis to the international system, exploring how international arrangements and institutions — such as GATT and NAFTA — can affect industrial structures and change the opportunities for international business. It also considers how more subtle international pressures such as environmental and human rights concerns may shape firm options and strategy.

MITI ends with a capstone module on trade and investment in information-based industries. These industries are amongst the fastest growing segment of international trade. But the trade they entail is new, since the product — information — is invisible and relies heavily on systems of property rights and professional licensing that vary widely across national borders. Using both cases and selected articles, we will consider how firms can best manage these uncertainties to gain a comparative and sustainable advantage in the international marketplace for information-based goods and services.

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**Part I**

**FIRMS IN THE GLOBAL ECONOMY:  
THE FUNDAMENTALS OF TRADE AND INVESTMENT**







## **Lenzing AG: Expanding in Indonesia**

In the mid-1990s, Lenzing AG was quietly going global. The world's largest manufacturer of rayon fiber, Lenzing was an Austrian company that historically had not ventured far from its base, a small company town about 70 kilometers from Salzburg. For decades, the firm had prospered in the comfortable European market for textiles, concentrating its sales on the 60 large spinning and weaving concerns that formed the bulk of its customer base. But in 1978, an unexpected phone call had awakened Lenzing to the possibility of international expansion. The call came from Ashok Birla, an Indian entrepreneur who had struck upon the idea of developing a rayon industry in Indonesia. Without prior experience in either overseas investments or joint ventures, Lenzing's management initially rejected Birla's approach. But eventually, enticed by the prospect of Indonesia's vast and untapped textile market, Lenzing's Chairman agreed to join Birla in an Indonesian joint venture. The resulting firm, South Pacific Viscose (SPV), became Lenzing's first overseas affiliate.

Within several years, SPV had become tremendously profitable, selling rayon fiber to Indonesia's booming textile industry and expanding its revenues by roughly 15% a year. In 1988, Lenzing was so pleased with the Indonesian operation that it decided to create a second production line, boosting the plant's capacity from 32,000 tons a year to 73,000.<sup>1</sup> It also began to invest elsewhere outside of Europe, using the experience gained at SPV to launch a small string of new projects. In 1992, it purchased a third rayon staple plant in Lowland, Tennessee and in 1994 it moved tentatively into China, signing a \$36 million contract with an arm of the Chinese government to construct a new rayon production plant northeast of Beijing. These investments made Lenzing the only rayon company in the world with a truly global presence.

By 1994, Lenzing's Indonesian affiliate was operating so successfully that the company was considering a further expansion, a third line that would increase capacity to 109,000 tons and concentrate on production of the highest-quality rayon fibers. If this line were added, SPV would become one of the largest rayon facilities in the world, second only to Lenzing's Austrian plant. There was much to recommend the expansion: SPV had firmly established relationships with its

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<sup>1</sup> The plant initially produced 17,000 tons a year. A series of design modifications subsequently boosted its capacity to 32,000 tons.

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*Research Associates Lygeia Ricciardi and Laura Bures prepared this case under the supervision of Professor Debora Spar as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.*

downstream customers in Indonesia and an excellent working relationship with its local partner. As the most profitable of Lenzing's several operations, SPV was also located in a country that could well become a powerhouse in the global textile industry. But as the site for a major capital investment, the Indonesian operation also had its drawbacks. First, because rayon production is intimately tied to the downstream production of garments and apparel, expanding in Indonesia effectively entailed a bet that Lenzing's downstream customers would also remain, and indeed concentrate, in Indonesia. This was a good bet in 1994 but, with the emergence of major textile centers in China and India, by no means a sure one. Second, despite being located in one of the world's largest tropical forests, the Indonesian plant had no local access to wood pulp, its most critical and cost-sensitive input. Instead, SPV imported its pulp from Brazil and South Africa, adding considerably to its costs and, potentially at least, putting it at a serious disadvantage vis-a-vis any local competitor that managed to integrate backwards into pulp production. Finally, with the third line, Lenzing would be increasing its exposure in a country that remained politically and economically uncertain. Before investing another \$100 million for a third line, Lenzing's management needed to consider whether the expansion made sense, and if Indonesia was an appropriate base for its growing international business.

### The Rayon Production Process

Rayon, the world's leading "man-made" fiber, was first developed as an inexpensive substitute for silk. For centuries, scientists had tried to duplicate the complex production of silk, which involved unraveling the cocoons of silk worms fed exclusively on mulberry leaves. In the 1920s two English chemists, Charles F. Cross and E.J. Bevan, finally perfected the means to replicate the worms' spinning process. Essentially, their patented "viscose process" took the same raw material—trees—dissolved it chemically, and then spun the dissolved solution into a delicate thread. Though refined somewhat over the subsequent decades, the viscose process is still the core of modern rayon production.

Like the silkworm, the rayon production process relies on the chemical breakdown and realignment of wood fiber. In the first stage, sheets of wood pulp are mixed in a caustic soda solution that dissolves the weaker portion of the wood fiber.<sup>2</sup> The remaining portion is then pressed to wring out the chemicals, shredded into small pieces or "crumbs," aged, and blended with carbon bisulphide to form a spongy mixture called xanthate. The xanthate is then dissolved in a chemical solution to produce the molasses-like liquid that is viscose. In the final stages of the process, the liquid viscose is forced through spinnerets and into an acid bath that gels the liquid into a nearly invisible thread. The threads, or "filaments," are stretched and cut into "staples," and then drained, bleached, washed, and pressed into bales for shipment.<sup>3</sup>

With small changes in the production process, rayon plants can vary the size, brightness, or thickness of the final product. All types of rayon, however, depend on the same essential input: wood pulp. To ensure quality and consistence, they all also require an uninterrupted and unchanging production line. Wherever they are located, therefore, rayon plants share the same basic characteristics. They are technologically complex, operate continuously, and rely on a steady and predictable supply of dissolving grade wood pulp. While workers, both technical and lower-skilled, are involved in each stage of the process, the plants are still basically capital-intensive, with a greenfield facility with 32,000 tons of capacity costing roughly \$100 million to construct in 1995.

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<sup>2</sup> Sodium hydroxide, also known as caustic soda, is a corrosive chemical.

<sup>3</sup> Rayon staples account for roughly 70% of total rayon production. The other 30% is left uncut, and sold as rayon filament. Because the filament produces a rougher texture than rayon staple, it is used primarily in non-garment products such as tire cord.

Output varies with the quality of technology and number of lines, but most plants produce roughly 60,000 tons a year. This rayon output, in turn, becomes the raw material for a wide range of industrial and consumer products. About 15% of the world's rayon staple production goes into non-woven products such as bandages and tampons; another 15% is used in the manufacture of home furnishings such as drapery and upholstery; and rayon filament, made from uncut rayon strands, provides material for light bulbs and the inner lining of tires. What drives the rayon industry, however, and accounts for the bulk of its consumption is its use in the garment industry. In the garment trade, rayon serves as a basic input, a raw material fiber that competes with other natural and synthetic fibers such as cotton, wool, nylon, and polyester. Like these other fibers, rayon has certain defining traits that differentiate its usage in fabric and garments. It holds bright colors well and "breathes," traits that make it particularly practical for traveling and casual clothes. In the high-end segment of the garment trade, rayon's adaptability and "luxurious drape," as the industry describes it, also makes it appealing to designers such as Calvin Klein, who once claimed that "Rayon is sexy in a way silk can't be."<sup>4</sup>

Still, for more mundane and extensive uses such as T-shirts and socks, rayon fiber effectively competes in the market with the full range of natural and synthetic fibers. While some buyers demand rayon to suit particular fashion needs, many buy just "fiber," choosing competitively among the various alternatives and taking advantage of changing price differentials. Rayon's ultimate demand, therefore, is determined by one of the world's largest and most important industrial sectors, the textile and apparel industry.

## The Textile Production Pyramid

In structure, the textile industry is comparable to a tremendous pyramid, with fiber manufacturers at the top and producers of a vast array of finished goods stretching across the bottom. Because each of the levels is distinct and complex, no one company spans its entirety. Rather, each is composed of very different sorts of firms and marked by very different patterns of production and competition.

At the pinnacle of the pyramid are the producers of rayon and other fibers such as polyester, nylon, cotton, and wool. Customarily, producers are grouped by fiber into two main categories: natural fibers (wool, cotton and silk) and synthetics. Global production of roughly 40 million tons of fiber is split nearly evenly between these two groups. At the production level, the two fiber groups are radically different: synthetics are produced in large-scale, capital-intensive plants, while natural fibers are produced by clusters of small farmers spread across regions with appropriate geographic and climatic conditions. In terms of sales and marketing, however, the two groups of fibers bear strikingly similar characteristics. In most regions conducive to the production of natural fibers, sales and marketing are handled, not by the farmers themselves, but rather by large collectives that pool production from across the region. With their buying power and marketing clout, these associations usually dominate their particular regional market for natural fibers. On the synthetics side, meanwhile, production tends naturally towards oligopoly. Due to the capital intensity and scale economies of fiber, and particularly rayon, production, the industry is customarily highly concentrated, with just a handful of firms clustered at the top of the textile pyramid. The level and intensity of rivalry among these producers varies widely across regions, with some firms competing much more ferociously than others. In all regions, though, the industry's concentration tends to create a high degree of familiarity among the producers and a relatively stable pattern of competition.

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<sup>4</sup>Quoted in Lenzing presentation.

Demand patterns for all fibers, by contrast, are more volatile, since they fluctuate both with the global and regional demand for garments, and with the garment industry's demand for specific types of fibers. Some producers, such as DuPont (nylon), and some marketing associations, such as Cotton Incorporated, actively attempt to shape demand for their particular fiber by appealing directly to the public. Others, including rayon manufacturers, generally eschew advertising of any sort and instead base their marketing almost entirely on the acquisition and maintenance of relationships with their direct customers.

These customers, spinning mills, form the next tier of the textile pyramid. Much more numerous than fiber producers, they are also smaller in size and capital-intensity, with a typical plant requiring an initial investment of around \$4 million. Using an almost entirely mechanized process, spinners twist and blend the fiber staples to convert them into yarn. Most spinning plants can spin any sort of fiber but require several months to switch from one type to another. Even mixing the same type of fiber from more than one producer is considered unwise, since blended yarn can result in fabric imperfections further down the line. As a result, spinners tend to maintain close relations with a relatively small number of fiber producers, minimizing the costs of switching.

The spinners in turn sell the completed yarns to weaving or knitting mills. On this third tier of the textile pyramid, firms are still more numerous and disparate. Most compete almost exclusively in their local markets and perform a fairly wide range of functions. Some weavers, for example, dye their own material, while others sell only in a "greige," or undyed, form. Often, firms will specialize in specific dyeing, printing, or finishing techniques and target their production to a particular segment of the fashion industry. Even here, though, the relationships between buyer and seller are considerably more fluid than those that prevail at the upper levels of the pyramid. Weavers and dyers sell generally to a wide range of customers and fabric prices are determined in a large, even if still primarily domestic, market.

Finally, at the base of the pyramid are thousands of garment makers, located in virtually every country of the world. Although there are a growing number of giant apparel manufacturers such as Burlington Industries and Springs Industries, the bulk of the industry is composed of small and mobile firms, requiring little more than some sewing machines and a handful of low-skilled workers to enter the industry. In contrast to the capital-intensity of fiber production, garment manufacture is exceedingly labor-intensive and global prices generally follow the trends of prevailing wage rates in the world's lowest-wage labor markets. At the base, vertical relations are also much weaker than they are higher up on the pyramid. Switching costs are low and styles easy to reproduce, giving garment makers little reason to invest in long-term relationships with their fabric suppliers. Instead, most garment firms are very sensitive to price, tend to purchase their fabric on a short-term contractual basis, and generally like to retain the flexibility to buy from a large and fluid base of suppliers.

This bottom tier of the textile pyramid thus bears very little resemblance to the fiber industry at its summit. Whereas fiber production is the province of a small number of capital-intensive firms engaged in stable, long-term trading relationships, garment manufacturing is a chaotic and volatile industry, filled with thousands of small, mobile firms and entrepreneurs. Despite these sharp differences, though, the two industries work essentially in tandem, with garment manufacturers reliant on fiber as their key input and fiber manufacturers selling primarily to the garment trade. The effect of this reliance is to tie all of the seemingly disparate tiers in the textile industry into one and to force them all, eventually, to follow the direction established at the bottom. Thus, as garment makers migrate in response to labor costs and productivity differentials, they compel fabric suppliers to accompany them, or lose out to lower-cost suppliers located near to the new garment center. The fabric producers then induce the yarn producers and so on up the pyramid until even rayon producers, with their huge capital investments and stable trading relationships, ultimately need to locate their production facilities as close as possible to the downstream industry in order to save their



customers time and shipping costs. In the 1990s, this push for proximity was becoming even more critical, as garment makers increasingly employed information technologies to allow their customers immediate shipment and even customer-designed clothing.<sup>5</sup> The advent of mega-chains such as Benetton and Walmart only heightened this pressure, since buyers for those chains demanded the flexibility and speed to re-create high fashion trends for the mass market. They also bought in sufficient quantity and on narrow enough margins to influence the movement of wide swatches of the textile pyramid. If The Limited, for instance, decided to purchase the bulk of its T-shirts in China, the weight of its purchasing power would compel upstream suppliers to the T-shirt trade to shift to China as well, using proximity to provide the T-shirt makers with the speed and price that The Limited demanded.

Traditionally, rayon producers had solved the problem of proximity by serving just a single regional market and locating themselves at the heart of its garment-manufacturing district. Thus, U.S. producers clustered around the textile mills of the Southeast and Lenzing supplied Europe from its Austrian base. As garment makers moved in search of ever-lower wage rates, however, the single-market strategy became correspondingly risky. Once the bottom tiers of the textile pyramid ventured to lower wage countries, fiber producers had to locate themselves close to their newly-global downstream customers.

But making these moves was not always simple. To begin, the very mobility of the garment makers made it difficult to determine in advance where the industry was likely to concentrate. Since the 1960s, the newest producers had clustered in low-cost, labor-intensive countries such as Hong Kong and Korea. Yet the very success of these countries, brought on in large part by textile exports, had also put pressure on labor rates; by the 1990s, even firms from Hong Kong and Korea themselves were beginning to flee to lower-cost countries such as Sri Lanka, Indonesia, and Bangladesh. Just how far this migration would go, and where, if anywhere, it would end, remained unclear.

Adding to the uncertainty was the impending demise of the Multi-Fiber Arrangement (MFA), set to expire in 2004. Since 1974, the MFA had essentially regulated all international trade in textiles and apparel, providing a framework by which individual states could impose country-specific quotas on imported textiles.<sup>6</sup> The MFA was a vast and unwieldy system which served primarily to protect expensive producers in the industrialized world from their lower-cost competitors. But, as messy and inefficient as it was, the MFA had at least created a certain stability and predictability in the industry, since the quotas in effect determined the size and direction of trade flows. Once the quotas were removed, no one really knew which firms and countries would prove most competitive in a truly free market. Moreover, no one in the industry could really be sure that the international marketplace would remain free for long, since domestic lobbies around the world might well succeed in raising new, possibly more onerous, barriers to imports.

For rayon producers, uncertainty in the bottom tiers of the pyramid created a particularly expensive quandary. To remain competitive in a global textile market, they had to follow the garment makers. But, because rayon production demands such extensive up-front investments in training and relationship-building as well as in plant and equipment, producers like Lenzing had to determine in advance where the international textile industry was likely to concentrate. With the elimination of the MFA, they also had to assess how trade patterns were likely to evolve and whether that evolution would occur primarily in an open or regulated marketplace.

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<sup>5</sup>See Janice H. Hammond, "Quick Response in the Apparel Industry," Harvard Business School Note No. 690-038.

<sup>6</sup>For more information on the structure of the Multi-Fiber Arrangement, see David B. Yoffie and Jane Kenney Austin, "Textiles and the Multi-Fiber Arrangement," Harvard Business School Case No. 383-164.

Finally, the rayon producers also needed to balance these downstream pressures against their own input constraints, and particularly their dependence on a predictable and nearby source of pulp. For rayon producers, pulp is the single most important input, dominating the production process and effectively setting the price of rayon fiber. Each ton of rayon demands a ton of wood pulp; there are no close substitutes and no known means of reducing the ratio of pulp to fiber.<sup>7</sup> There is also no easy way for rayon producers to control either the price or supply of this key input, since the rayon industry is but a tiny player in the global pulp market. The vast bulk of pulp, around 98%, goes into the production of various forms of paper. Dwarfed by comparison, rayon production accounts for just 2% of consumption and requires the highest quality pulp: bleached, "dissolving grade" pulp made from hardwoods, such as acacia or eucalyptus, or softwoods, such as northern pine. Because the process that makes pulp for rayon is technically similar to that which makes pulp for high-end paper users, most mills that sell to the rayon industry also produce paper-grade pulp, switching from one to another to meet demand conditions. As a result of this switching, rayon producers find themselves at the mercy of the paper market, since it is this market that determines the availability and price of dissolving grade pulp. As demand for paper increases, so too does the price of pulp, regardless of conditions in the textile industry. Rayon producers thus act almost purely as price-takers, captive to the highly volatile and cyclical paper market. To remain profitable throughout these inevitable cycles, they need to pass along increases in pulp prices to their own downstream customers. Beyond a certain point, however, price increases become unfeasible, since consumers will simply substitute wool, or cotton, or polyester if rayon becomes too expensive. All that the rayon producers can do to minimize this substitution is to build long-term relations with their spinning and weaving customers, relying on the strength of these relationships and the consistent quality of their fiber to pull them through periods of high pulp prices. They also try whenever possible to locate near the source of their wood pulp, thereby reducing the transportation costs which can account for 5 to 10% of total pulp costs.

A company like Lenzing, therefore, was constantly torn between two competing geographical pulls: the need to follow its customers and the need to remain close to its supply base. Getting the balance right was critical, since miscalculations could leave the company vulnerable on either the supply or the sales side of its operations. Given the up-front investment amounts in the rayon industry, mistakes were also exceedingly expensive.

It was against this backdrop that Lenzing's management considered the proposed line expansion at South Pacific Viscose. Before investing an additional \$100 million in the plant, they needed to consider how the complex dynamics of the rayon market were liable to play out in Indonesia and whether, over the long run, an expanded facility at SPV represented the best possible use of their capital.

## South Pacific Viscose

**The decision to invest** By 1994, SPV had grown so successful that it was difficult for anyone at Lenzing to recall just how risky the operation had seemed at the outset or how radically it had altered the company's traditional modes of business. Prior to 1978, Lenzing had focused almost exclusively on the European market. From its Austrian facility, Lenzing catered to the fashion industry clustered around France and Italy and profited from a post-war surge in demand for synthetic fabrics. Because demand was strong and rayon fiber so bulky to transport, Lenzing saw little reason to expand its operations beyond Europe. Instead, it nurtured relations with its established customer base and

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<sup>7</sup>In some markets, cotton linter pulp is used as a substitute for wood pulp, but since it produces a much lower-quality fiber, most producers will not consider it as a viable alternative.

dedicated the company's resources to perfecting the technology and efficiency of rayon production. All non-European business was handled by a small network of private agents, who purchased occasional lots of Lenzing fiber to sell to buyers in Asia and the Middle East. To leverage its technological edge, Lenzing also sold rayon-making machinery to companies around the world.

It was Europe, though, that stayed the focus of Lenzing's operations and Europe that provided the base for the company's growth. Unlike its local competitors, Lenzing had the distinct advantage of backwards integration; indeed the rayon facility had been developed in the 1930s to make use of an existing pulp mill at Lenzing. Thus, even when pulp prices in Europe rose, Lenzing was protected by its internal source of supply; and when segments of the European garment industry fell prey to emerging low-wage competition, Lenzing was able to protect its customers by supplying them with the highest quality fibers at a competitive price. As of the late 1970s, Lenzing was well-entrenched and well-positioned, with no intention of changing its business operations or its primarily European focus.

Then came Birla's call, forcing Lenzing's management to at least consider the possibility of an overseas expansion. At the outset, Indonesia seemed a highly improbable target. In 1978, the country was poor and isolated, with a government that remained hostile to foreign business activity and sharply regulated all foreign investment in the country. The domestic economy was firmly under the authoritarian control of President Suharto, who had created a series of industrial monopolies and bestowed them (and purportedly much of their revenues) upon his friends and relatives. Tariff barriers were high, foreign exchange restricted and the entire economy subject to a barrage of regulation—hardly an attractive spot for foreign investment.

Yet, Lenzing's Chairman at the time, Dr. Hans Winter, had grown increasingly intrigued by the prospect of investing in Indonesia's fledgling rayon industry. For a country like Indonesia, rayon made sense: it was cheap, it was light and, unlike cotton or wool, rayon did not depend on natural conditions unsuited to Indonesia's tropical climate. Moreover, if Indonesia could develop a domestic rayon industry, it could break its traditional reliance on imported cotton and clothe its 140 million people without having to draw upon its heavily-protected foreign reserves. With its vast pool of low-wage labor, Indonesia might even be able to develop an export trade in rayon or some of its downstream products. Recognizing this potential, the Indonesians had already begun to encourage investment in rayon production, relaxing some restrictions on foreign investments and hinting that the industry would likely receive long-term protection from foreign competition. With these inducements in mind, plus the sheer size of the untapped Indonesian market, Lenzing eventually decided to join Birla in an Indonesian joint venture and the two partners each took 42.5% of the newly-created South Pacific Viscose. Because Indonesian law required a local partner, the remaining 15% of SPV's stock was split between Ali Noor Luddin, a local entrepreneur, and PT Pura Golden Lion, a subsidiary of Indonesia's most influential business conglomerate, the Salim Group.<sup>8</sup>

**The plant at Purwakarta** From the start, SPV was a risk and a challenge. The partners decided to locate the new plant in Purwakarta, a remote town in Western Java that offered a plentiful source of water, a nearby electrical company, and government tax breaks for development. Situated halfway between Java and Bandung, it was within a day's drive of 80% of Indonesia's spinning, weaving, and garment manufacturing companies. It was also in the middle of a jungle, with no roads, buildings, or other infrastructure. For many months, SPV's main office consisted of an umbrella and a table; even after an extensive housing colony was built, it had to be surrounded by a ditch with acid to keep the jungle's animals from wandering in.

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<sup>8</sup>Salim is the single most important business entity in Indonesia, with earnings amounting to roughly 5% of the country's GDP.

Despite the physical hardships, construction proceeded quickly, and SPV's first rayon line came on stream in 1982 with an annual capacity of 17,000 tons. During the next few years, the plant's engineers raised production to 32,000 tons. By this point, however, relations between Birla and Lenzing had deteriorated as Lenzing's management grew increasingly concerned about Birla's ability to manage SPV. During a 1983 liquidity crunch, the partners agreed that, in exchange for refinancing assistance, Lenzing would formally assume managerial responsibility for SPV. Daily control over the plant's operations passed to Leopold Fermüller, the Austrian-born technical director who had spearheaded SPV's creation. In the plant's early days, Fermüller had become famous for his hands-on exploits -- clearing lizards from the machinery and diving into flooded rivers to repair corroded pipes. In 1983, he became SPV's President Director. In return for its new oversight responsibilities, Lenzing was to receive a 4.7% commission based on SPV's total turnover.

The new arrangement proved a windfall for Lenzing as rayon consumption in Indonesia skyrocketed in the mid-1980s. Under President Suharto's "New Order" regime, Indonesia's economy finally improved, achieving GDP growth rates of roughly 7% in the 1980s and substantially decreasing the percentage of people living below the poverty line.<sup>9</sup> As these people began to consume, the demand for clothing exploded, as did the corresponding demand for fiber, and particularly rayon. From a base of 45,000 tons in 1984, Indonesian rayon demand grew to 82,000 tons by 1990. SPV and its local competitor, PT Indo Bharat Rayon, were unable to keep up with local demand. To address this imbalance and leverage what was by the late 1980s an extremely profitable investment, Lenzing decided in 1988 to construct a second rayon line at SPV. Although Lenzing management was initially concerned about reports of impending political turmoil in Indonesia, they ultimately decided to go ahead with the \$92 million expansion which increased yearly production at SPV to 73,000 tons. When the second line began production in 1992, its new President Director, Ram Goyal exclaimed, "Everything is looking green: shareholders are happy, management is pleased, and we are proud of doing something in the country."

**The third line** Even with this expanded capacity, SPV found itself unable to meet Indonesia's continuing demand for rayon. Because of the difficulties of investing in Indonesia, only one other firm, Indo Bharat, had entered the rayon market since 1983. Located just down the road in Purwakarta, Indo Bharat had an annual capacity of 21,900 tons, just over SPV's initial capacity of 17,000. With SPV's second line in place, the two new firms together still produced only around 100,000 tons, considerably under Indonesia's 1992 consumption of 132,000 tons. Tariff levels of roughly 20% only heightened the imbalance, effectively eliminating any threat of import competition and assuring SPV and Indo Bharat of a virtually captive market.<sup>10</sup> Meanwhile, the downstream textile industry in Indonesia continued to grow, with yarn-spinning capacity already the largest in ASEAN and expected to account for a full 50% of ASEAN's total by 1997. In 1993, SPV's sales increased by 18%.

Faced with such propitious market conditions, Lenzing's management began to examine the possibility of a third expansion at SPV, adding a new, cutting-edge production line that would push the plant's total capacity to 109,000 tons. Unlike the existing lines, the new line would also produce a particularly high-quality rayon fiber that had not yet been introduced into the Indonesian market. Although Fermüller had since left SPV to join Lenzing's Management Board in Austria, he remained intimately connected to SPV and strongly supportive of its expansion. In the summer of 1993, he formally proposed the third line to Lenzing's Chairman and CEO, Dr. Heinrich Stepniczka.

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<sup>9</sup>In 1970, 60% of Indonesians lived in official poverty. By 1994, that figure had been reduced to 14%. See *Financial Post*, August 17, 1994.

<sup>10</sup>Twenty percent is the average and unweighted tariff level for 1992.