



Universität St. Gallen

Strategic Alliances at Clariant

The Tianjin Joint Venture in China

Case study

Reference no 307-396-1

This case was written by Professor Dr Christoph Lechner and Nicola B Gesing, University of St Gallen. It is intended to be used as the basis for class discussion rather than to illustrate either effective or ineffective handling of a management situation. The case was made possible by the co-operation of Clariant.

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Strategic Alliances at Clariant: The Tianjin Joint Venture in China

Teaching Case

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Introduction

It was a cloudy afternoon in November 2006, when Pieter Hermens, Head of Region Special Markets at Clariant's Pigments & Additives Division, looked out of the window from his office in Basel. The weather reminded him of the rainy days in Tianjin (China), where everything had started in 1996. Pieter had worked there for many years as the CEO of a joint venture between Clariant and its Chinese partner. He had been involved in evaluating the case for entering the China market, searching for and selecting an appropriate partner, negotiating the deal, starting operations, and, later, transforming the scope and scale of the joint venture. As one of the first production partnerships that Clariant started in China, Tianjin had emerged as the plant with the lowest manufacturing costs that Clariant, so far, had managed under its corporate umbrella. Looking back, Pieter felt content about the current – situation, despite all the delays and setbacks that had been encountered. However, new challenges were ahead and

Clariant had to find a way to overcome them. How, exactly, was the big question that crossed Pieter's mind.

Clariant and its Organic Pigments Business

Clariant, a leading specialty chemical firm operating on five continents, employs approximately 21,500 people and generates a turnover of roughly 8.2 billion CHF. Headquartered in Muttenz (near Basel, Switzerland), its structure is built around four worldwide operating divisions: Textile, Leather & Paper Chemicals, Functional Chemicals, Masterbatches, and Pigments & Additives.

Starting in the late 1980s, the Textile, Leather & Paper Chemicals Division had gone through a difficult period. Its main clients from the textile industry had shifted their production to countries with lower labor costs than Europe or North America could offer. Especially in China and India, new competitors built up large capacities for the production of textile dyes, which threatened European producers such as Clariant. Reacting to this challenge, European producers attempted to slash costs, reduce expenditures for innovation, and streamline their operations. However, these efforts were insufficient and the situation worsened, as no effective mechanisms for the protection of intellectual property existed. As a consequence, low-cost producers in China and India copied dyestuff technology and offered their products at much lower prices. The resulting overcapacity destroyed the price structure worldwide and slashed the profit margins of European producers.

Due to this experience, Clariant was afraid at the beginning of the 1990s of history repeating itself. It was not clear if the organic pigments industry might follow the same "devastating path that dyestuff had taken," as one manager remarked. A short view of the market for organic pigments in 1990 revealed that Chinese and Indian competitors had not been able to make any significant footprint in the industry so far. The world market volume was \$3.8 billion (US), with Clariant having a share of more than 20%, followed by BASF (Germany) with 19%, Ciba (Switzerland) with 17%, and DIC/SUN (Japan) with 16%. Other firms' shares were negligible.

The pigments that Clariant produced were used in a variety of applications. The largest part (60%) was as lacquers for the automobile industry and inks for printing machinery; 19% were used as coatings in paint colors, and 12% to color plastics. Additives were used to increase the resistance to light of prints or colored plastics. Three main chemical classes were differentiated according to the color spectrum: Azo pigments (reds, oranges, and

yellows), Phthalocyanines (blues and greens), and Quinacridones (violets, reds, and oranges). Clariant's core business was in Azo pigments, while other firms, such as BASF, focused on Phthalo pigments. Customers appreciated the consistently high-level quality of Clariant's pigments.

Clariant hoped that the evolution of the organic pigments business would differ from the evolution of dyestuff due to several aspects. First, while dyestuff physical characteristics are very simple, producing organic pigments requires complex advanced technological skills and capabilities that cannot be easily copied. Second, European firms had initially underestimated the competition in dyestuff and reacted too slowly; now, firms paid close attention to and reacted swiftly to the first signs of changing market conditions. Third, while Asian dyestuff manufacturers had benefited from shifts in the textile industry and a growing number of local consumers, the business clients of organic pigments (e.g., automotive companies), so far, had not shifted any significant operations to low-cost countries in Asia. Thus, the situation appeared to be favorable.

Clariant initiated a strategic objective of calculating and comparing production costs of pigments across all its worldwide plants. Pieter was assigned to oversee this project and, over several months, visited all pigment facilities and closely inspected their production processes. This was not an easy task, as the clear identification of cost drivers and the calculation of various costs positions was impeded by the "backward integration" of most chemical firms. Starting with a few basic raw materials, many chemical products could be produced along a coherent sequential process. Consequently, no one product was produced by one single plant; plants operated as networks, allowing for the production of multiple products. Synergies, joint utilization of fixed costs, cross-subsidization, and the in-sourcing of pre-pigment components complicated the calculation. In order to sort out these subtle, but important, linkages, Pieter compared Clariant's cost positions with published and/or estimated figures of current and potential competitors. As a result, he discovered that competitors from Asia (especially China) were already operating on much lower cost structures and might slowly maneuver themselves into a position where they could challenge Western producers.

Based upon these findings, discussions started at Clariant. Some argued there was no need for building up production in the Chinese market. Profit margins were still good, and the capacities of Chinese competitors limited. Also, the lack of intellectual property protection spoke against any significant investment. Others, however, argued that entering the Chinese market as a producer of organic pigments might be an interesting, attractive growth opportunity. Clariant was already acting within the Chinese market. It was selling, but not

producing, pigments in China and had established a sales organization that possessed insight into and knowledge of the Chinese market. With the support of this sales organization, Clariant could enter a fast-growing market as an experienced pigments producer and perhaps establish itself as a dominant industry player. Facing these issues, Clariant had to make some far-reaching decisions. Should it move more of its business to China? Should it engage in a strategic alliance or go it alone? Which partner might be a better fit under which conditions?

The Case for China

At the beginning of the 1990s, the Chinese pigments market was underdeveloped and technologically about 40-50 years behind the standards of the Western Hemisphere, according to industry specialists. After the dissolution of the German IG Farben conglomerate by the Allies in 1945, expertise was transported to China and the first manufacturers emerged in 1950. By 1995, about 150 small firms manufactured different kinds of pigments. Their total capacity amounted to less than 20,000 metric tons (mt), insignificant compared to the 270,000 mt produced worldwide. Quality was low and well behind Western standards. Thus, it was no surprise that China's pigments producers were not well respected by the international markets.

Also, there was a significant lack of proper intra-Chinese infrastructure for the transfer of industrial goods. After the Cultural Revolution, Deng Xiaoping, who emerged as the de-facto leader of China after 1976, tried to foster economic growth by establishing Special Economic Zones (SEZ) in 1980 (see Figure 1 in the Appendix). In these SEZs, the corporate tax rate was set at 15%, compared to 30% in other regions. Coastal Open Cities (COC), with Economic and Technical Development Zones (ETDZ), were also designated. Extending from the Yangtze River Delta, Pearl River Delta, Xiamen-Zhangzhou-Quanzhou Triangle in south Fujian, Shandong Peninsula, Liaodong Peninsula, Hebei, and Guangxi, they formed an open coastal belt. The COCs were authorized to grant foreign-funded projects in a city-wide area. The corporate tax rate in the COCs was 24% and 15% in each ETDZ. Especially, attracting foreign investments to introduce foreign capital, technology, management expertise, and export channels were the focus of Deng Xiaoping's policy. China's Joint Venture Law of 1979 was an important part of this approach. For foreign firms, the establishment of business in China was only possible through joint ventures with local firms. Foreign partners were permitted a stake ranging from a minimum of 25% up to 100%. (see

Figure 2 in the Appendix). In 1990, foreign investment was at 18% in the SEZs, around 20% in the COCs, and at 26% in the ETDZs.

Due to these changes, some experts saw strong growth potential in the overall Chinese economy. In 1995, GDP had already increased tenfold in a 15-year period and was expected to grow tenfold again by 2020. After thorough discussions, Clariant decided to participate in and benefit from this growth. The market potential for specialty chemicals was considered impressive. While the European chemical market was expected to grow by 1-2%, the growth of the Chinese market was forecasted at around 10% (see Figure 3 in the Appendix). For Clariant, China should become a base for exporting to the world market. Clariant was aiming to double sales and corresponding asset base in Asia to 20% of the group total over the proceeding five years.

Finding the Right Partner (1994)

Pieter Hermen's task was to find an appropriate joint venture partner (preferably one that already had some fundamental understanding of the chemical industry and possessed substantial production capacity) and to negotiate all relevant contracts. The selection of an appropriate partner in a country the size of the European Union was a daunting challenge. Some support was provided by the Chinese "Chemical Bureaus," institutions which offered contact data of potential Chinese partner firms. Also, Pieter could draw on the experience of colleagues from Clariant's sales organization. Clive Nielsen, who had been working in Hong Kong for several years and was familiar with the market, helped devise a rough shortlist. After lengthy discussions and research, it was decided to concentrate on two firms: the Shanghai Dyestuff Corporation No. 9 and the Chemical Factory Tianjin No. 8. Pieter contacted both of them and outlined his ideas for a joint endeavor.

The Shanghai Dyestuff Corporation No. 9 (SDC), was located in Shanghai, the most active and prosperous region of China at that time. Shanghai, as an industrial region, was well equipped and aligned to the demands of Western firms. As a result, labor costs were higher than in other regions. SDC already had experience with dyes production and wanted to improve their pigments production. It was well established on the local market and had good contacts to local suppliers. In addition to producing Copper Phthalocyanines pigments, SDC desired a partner that not only could contribute expertise on Azo and Phthalo pigments

production, but also was willing to transfer state-of-the-art technology to China. In order to produce complex pigments products with high margins, SDC proposed the construction of a new greenfield plant. A feasibility study showed a payback time of about five years.

Chemical Factory Tianjin No. 8 (No. 8), was located in Tianjin, a city of eight million inhabitants, roughly two hours from Beijing and close to the coast. The region of Tianjin lagged about 15 years behind Beijing in development; thus, labor costs were relatively low. No. 8, a former state-owned plant, was a subordinate company of the Huanghua Bohai Chemical Group. With its pigments production, No. 8 enjoyed a good reputation in the local market. However, neither the state nor Bohai Group provided appropriate support to No. 8. As a result, production capacity was almost nonexistent due to old and decrepit machinery. No. 8 was nearly bankrupted and was looking for a foreign investor willing to contribute technical expertise and financial support to foster a joint business. It offered its already operating production site consisting of three buildings and promised the contribution of utilities such as steam, gas, and energy necessary for the production of pigments. Also, state officials had granted No. 8 the official right to transfer and use allocated property in a potential joint venture with a multinational corporation. A rough feasibility and profitability calculation showed a payback period of less than five years.

After several rounds of meetings with the representatives of SDC and No. 8, Pieter and his colleagues concluded that No. 8 might better fit their interests. As Pieter remarked:

"I wanted to start on a low level and expand later on. First see, how things develop. It was also important for me that we do not take a greenfield approach. I favored starting our operations in an already existing facility in which we could benefit from available water, steam, power, and other utilities. If you start with a greenfield plant, all of these utilities are not there and you need to invest much more."

This decision was supported by the fact that SDC had started parallel negotiation with BASF, to the dismay of Clariant.

Negotiations with No. 8 (1995)

In December 1994, Clariant and No. 8 signed a Memorandum of Understanding (MoU) stating that both parties were willing to start negotiations and would treat all

exchanged information as confidential. Clariant's negotiation team consisted of Pieter, Walter Kühn, and Clive Nielsen. Walter, an assistant to a board member, had joined Clariant in 1984. As a chemist, he had worked in organic chemistry and the dyestuff sector. Previously, he had been responsible for production in an Indonesian plant. His role was to oversee all technical aspects. Clive had extensive, in-depth knowledge of the Asian markets. As a marketing expert for the region, he was responsible for the product portfolio and sales. In addition, a professional translator, a Chinese consulting firm (Asia Link), and Clariant's attorneys assisted the team with legal, administrative, and cultural issues.

Pieter, Walter, and Clive carefully prepared each round of negotiations. As Walter remarked:

"We wanted to invest as little as possible – in means of cash. Additionally, we were aiming at taking the majority stake in the joint venture in order to be in the driver's seat. Further, we favored a limited variety of products, which were mainly targeted at the local market but also for export."

Over a period of 14 months, the team flew monthly to Tianjin and negotiated with representatives of No. 8. The Chinese team of eight people behaved reservedly and, apparently, acted strictly on the basis of their hierarchical levels in the organization. During these negotiations, a number of issues emerged:

- The first topic centered around the financial quantification of each party's tangible and intangible contributions. Having inspected the production site which No. 8 offered as its main asset, Walter was unpleasantly surprised. The three buildings all required extensive renovation. This realization was troubling, as No. 8 had offered this asset to the joint venture for a very high price.
- The infrastructure, with its resources of power, steam, ice, and water, was in poor condition as well. Power sources were unreliable, the water supply was non-functioning, and the equipment was barely adequate for the planned production purposes. In addition, No. 8 demanded quite high prices for these utilities.
- Environmental issues were next. Clariant was keen to maintain quality levels in congruence with its other sites around the globe. As an internationally well-known chemical corporation, Clariant adhered to strict environmental policies in each of its markets. No. 8, however, could not understand investing in facilities that did not generate additional profit and actually consumed money.

- No. 8 preferred a fast and high payout ratio of future dividends from the joint venture. Conversely, Clariant wanted to reinvest any profits within the joint venture in order to allow for expansion and growth.
- The product portfolio was another issue. No. 8 was interested in a broad and high-margin product set. It also asked for substantial technology transfer. One explanation for this could be found in the interest of the Bohai Group, the owner of No. 8, that produced raw materials for pigments. Thus, No. 8 favored a product portfolio in which most raw materials had to be acquired from Bohai Group. Clariant, however, argued for a rather simple product portfolio that could be targeted to the local market and, eventually, for limited export activities. For exportation to be successful, Clariant demanded certain quality standards across these products. Unfortunately, tests revealed that the Bohai Group was not able to offer high-quality components. Within the Clariant group resistance arose, as Clariant Germany feared becoming obsolete in this process.
- Other issues were related to sales. No. 8 wanted to use the already existing sales organization of the Bohai Group. Clearly, commission and bonus payments would be necessary to get access to this sales channel. However, Clariant preferred using its own sales organization for the joint venture with the perspective to expand to foreign markets.
- Management positions proved to be a difficult challenge. Both parties agreed to staff the following areas: Finance and Accounting, Sales Administration, Production, Procurement, Administration and Service, and Personnel (HR). Discussion centered on the use of expatriates from Clariant, local citizens, or managers from the Bohai Group.
- Finally, and quite contentious, was the question of the number of employees needed by the new joint venture. No. 8 had about 900 people on its payroll. Clariant's determination that only about 140 people were necessary was strongly rejected by No. 8. Demanding the dismissal of such a large amount of staff was considered unacceptable and offensive. Asia Link warned of a breakdown of the whole negotiation exercise and the loss of all invested energy and effort.

Signing the Contract (1996)

After lengthy discussion and compromises from both sides, No. 8 and Clariant were able to reach consensus on the most important issues.

- Clariant was able to increase the financial value of intangible assets in terms of production and business expertise. It argued successfully that these elements were much more valuable than No. 8 had imagined. In doing so, the relative value of the facilities that No. 8 contributed was decreased.
- Negotiations about the product portfolio and about prices for production utilities were driven by differences about quality and costs of necessary raw materials. A compromise was struck that balanced Clariant's desire for a rather simple product portfolio with the desire of No. 8 to quickly lead the joint venture into a position of positive cash flow and high dividend payments. If the quality and specification of the pigments was acceptable, Clariant Germany would buy a significant amount of the joint ventures' production output. This quite "secure" outlook on payout convinced No. 8 to abandon its demand of a high-margin and complex product portfolio.
- Clariant was keen to put its people into most key management positions (see Figure 4 in the Appendix). Pieter took the position of CEO, Walter was the General Manager, and the Deputy came from No. 8. The heads of Finance and Accounting (F&A), Sales Administration, and Production were also from Clariant, with Deputies from No. 8. The departments of Procurement, Administration and Service, and Personnel were staffed with managers from No. 8. These departments were the most strongly connected to the local populace and, thus, were best equipped to defuse potential cultural clashes. Also, Clariant wanted to minimize the number of expatriates to avoid the impression of a take-over.
- The partners agreed to not establish a new sales organization for the joint venture, but to allow the already established Clariant sales force to sell these products.
- The issue of the number of employees required for the joint venture demanded a high degree of cultural sensitivity from both sides. Asia Link played a key role in this process. It mediated between both parties by explaining each partner's cultural and economic constraints. In the end, No. 8 agreed to decrease the number of employees and Clariant agreed on high severance payments for terminated staff.
- Clariant became the joint venture's majority partner (60:40). It promised to contribute \$4.7 million (US), while No. 8 invested \$3.2 million (US) as equity. Eight million dollars (US) was financed as debt by banks and suppliers. Clariant's objective was to maintain the leadership position and to set No. 8's incentives high enough to force its commitment to support the common project. Overall, the joint venture contained an investment of about \$16 million (US). It was expected that the renovation of buildings and production

facilities would require about \$4.2 million (US), workshops and machinery \$4.0 million (US), and wastewater treatment about \$1 million (US). Current assets were allocated at \$6.7 million (US). In September 1996, the joint venture contract was officially signed and business licenses were granted by state officials.

At about the same time, BASF concluded its negotiations with SDC and signed a contract for a greenfield plant in Shanghai. BASF strove for a fully self-sufficient site and was willing to import key, highly automated equipment from Germany. To enable the use of its sophisticated technology, BASF brought numerous Chinese staff to Germany for intensive training and sent many expatriates to Shanghai. It also transferred products from less profitable sites to the new joint venture. The objective was to achieve a production output of around 7,000 mt Azo and Phthalo pigments.

Starting Operations: The Clariant-Tianjin Joint Venture (1997-98)

Having signed the contract and received the business licenses, operations could begin. First, the production site had to be reconditioned. As No. 8 was almost bankrupt, the joint venture pre-financed the overhaul of the steam, water, and wastewater infrastructure. Roughly 30 employees were hired for cleaning and maintenance duties. Walls were ripped down to re-design and enlarge the factory halls. Pieter asked for support from Clariant Germany, which sent several construction experts knowledgeable about the specifications of pigments factories. Based upon their guidelines, local suppliers could prepare and install customized machinery and perform modifications to ovens and boilers. Workshops for yellow and red pigments were constructed. Pieter emphasized the need of foreign experts in this phase:

“We need engineers who are able to assess exactly which machinery needs to be replaced and which might still function. Does this boiler still meet our company requirements? What kind of steel has been used for this construction? How long will this steel last if we use it in our planned production process? How about the existing pipe work? Ok, it is not the quality which we are used to, but it can function and if it needs to be replaced in three years, fine, we will replace it in three years – but always locally. We always purchase locally wherever possible.”

When the first delivery of salt acid arrived, Walter noticed that the drivers that handled the outflow through the tubes were wearing sandals and short trousers. Operational safety seemed to be a topic which the employees of No. 8 were not familiar with. Clariant wanted to

provide a safe working environment and enforced the use of its security directives. Pieter and Walter had to order appropriate clothing for their employees: helmets, jackets, trousers, shoes, gas masks, security glasses, and so on. A local sewing company created clothing based on drawings by Walter, who remembered similar outfits worn by workers in Indonesia and Germany.

As General Manager of the joint venture, Walter was incessantly busy in order to keep things moving. His deputy from No. 8 behaved rather passively. It became apparent that the joint venture needed regulations about work shifts, holidays, and overtime. As the Personnel department apparently lacked the skills to devise such systems, they came to the managers of Clariant, who proposed a system that was adapted to Chinese needs and implemented.

In May 1997, the production of powder pigments finally began and reached its preliminary output and quality objectives. Less progress was made, however, in terms of strengthening the local business in China because too much time had elapsed. During the three-year period spent choosing a site and starting production, local Chinese firms had emerged as respectable competitors. This, in turn, decreased Clariant's potential to extend their sales in China. Even worse, the Chinese producers were active not only in the local market, but started to export their products aggressively. Because they acted indirectly through sales conglomerates, the identification of single firms was nearly impossible. Due to this non-transparent market structure, Clariant had difficulty gathering information about the competitive environment and confronting its new rivals directly.

The joint venture had to be re-negotiated. To fully realize Tianjin's pigments production capacity, Clariant suggested changing the production output in terms of local versus export business. The originally intended relation of local sales to exports (70% to 30%) had to be adjusted.

"Once you made an investment, when the plant starts to produce, you should be able to produce as much as possible. Otherwise you are in the liquidity trap. Consequently, you must make sure that things are running and products are sold. And we as Clariant, which produces tons of organic pigments around the world, have the opportunity to shift capacities in different production sites. Let's produce a few tons less in Germany and replace this capacity by pigments from Tianjin – on the one hand motivated by economical reasons, on the other hand to motivate our joint venture partner."

Following the new logic, the major part of the pigments output was sold to Clariant Germany, which ultimately sold these pigments on the global market. In addition to the integration of the joint venture pigments production in Clariant's global sourcing facility,

another change was introduced involving an extension along the value chain. Clive Nielsen expected added value by offering "preparations" (powder pigments in a sublimated condition) on the local market. Clariant could use its competence in dispersing, which is the micro-milling of pigments. These are then combined with water and other chemical components. The more thoroughly the powder pigments are dispersed, the fewer are needed in later preparations or in other future products. Appropriate dispersing can save up to 20% of the amount of powder pigments needed. The production of preparations is less water-consuming and demands less space than powder pigments production and, therefore, appeared to be a suitable strategy. By 1999, the joint venture produced more than 2,000 mt and ran at about 81% of its full capacity. Three years after signing the joint venture contract, the first positive EBIT was reached. The joint venture received its Quality System Certificate (ISO 9002) and in 2000, capacity was running at about 97%, with a production output of approximately 2,500 mt. Contrary to previous expectations, the Tianjin joint venture had become an important export plant with the lowest manufacturing costs compared to all other Clariant production plants. Pieter was proud of their achievement.

"We have followed one common goal: building a successful company which both partners can benefit from. And I think each of us bit the bullet. We really tried not to benefit from the misfortunes of the other but to find a way to an acceptable solution for both partners. We focused our energy on a joint venture that mutually generates value."

Changes & Adaptations (1998-2000)

Business conditions, however, did not remain stable. The industry was in a state of flux. Globally, demand remained flat in Europe and North America, but kept growing in Asia. New pigments producers entered the market and gradually improved their products. They expanded in the Western Hemisphere and gained more visibility in the marketplace. Traditional Azo pigments got commoditized and China emerged as the major source of raw materials for pigments production. Clariant was forced to concentrate on the joint venture in Tianjin. Dr. Ulrich Ott, Senior Vice President, Product Management, of Clariant's Pigments & Additives Division, remembers the situation:

"Due to the increased competitive pressure from the Chinese, not only locally but also in the Western Hemisphere, in one or the other product group that we were producing, we had extreme production cost disadvantages compared to the Chinese. Even if you are able to produce in Germany using highly automated processes with few personnel

but high environmental restrictions, production costs remain high, even if the productivity standard is high. And we knew in those days that something needed to happen. We needed to optimize our production.”

Several questions emerged: Should Clariant (partially) exit the traditional Azo business and avoid suffering from these market developments? Should it focus its efforts on further cost and efficiency improvements in order to withstand price reductions? Should it expand its joint venture or increasingly source-in additional capacity from local producers?

The Situation Today: New Challenges Ahead (2001-2006)

In August 2000, Clariant approved the expansion of production capacity by 2,700 mt, more than doubling its capabilities of 1998. Also, as trust had emerged between the two partners, Clariant decided to increase the technology transfer. Dr. Ott explains the move:

“To a limited degree, we wanted to increase productivity by introducing a certain amount of automation into the production process. At this point, a level of trust had been established and we were convinced that operations in this place could be continued without intervening factors which would demand an exit. As a consequence, we expanded the production site... and we transferred basic technology which supported the process but was still below the technological sophistication of what we use in operations in Germany.”

By September 2001, the capacity expansion project was completed and operational levels rose. Deliberately, the product portfolio remained simple and cost leadership was the objective. Over the following months, this approach proved to be successful. The market rapidly absorbed the increased capacity of powder pigments and preparations; the new capacity (about 6,500 mt) was fully realized in 2004 (see Figure 5 in the Appendix).

Unfortunately, market conditions deteriorated rapidly. The largest client segment of organic pigments, the ink industry, started to decline around 2002. Consumer behavior also changed in the automotive business, as people preferred silver and black cars to the brightly colored cars. Thus, the demand for pigments in this color spectrum decreased. Additionally, raw material prices rose dramatically, mainly caused by rising petroleum prices. Consequently, organic pigments producers shifted their global operations increasingly to India and China (see Figure 6 in the Appendix).

By 2003, the Chinese production of organic pigments amounted to 80,000 mt, one third of the world's total. Overcapacities emerged and put strong pressure on margins (see

Figure 7 in the Appendix). Azo and Phthalo pigments suffered most, while high performance pigments escaped this price erosion. Clariant closed its Azo pigments production site in Knapsack, Germany and shifted production to China. There, new competitors dominated the market. The largest three, with a Chinese market share of 50% total, were Chanzhou North American Pigment, which mainly produced Azo pigments (25,000 mt); Hangzho Baihe, which produced Azo and high performance pigments (15,000 mt); and Rudong Zhenxin, which also produced Azo pigments. Globally, Clariant was able to defend its leadership position. With a total global market value of \$5.0 billion (US), Clariant held 22%, DIC/SUN 20%, and Ciba 18%. Meanwhile, BASF dropped to 10% (compare Figure 8 in the Appendix).

What will the future bring for the joint venture in Tianjin? Several questions need to be answered. The first is related to the factory site, originally built in an industrial area. Over the years, thousands of private citizens have moved closer to this area and, as a result, it is now highly residential. The joint venture is one of the last to continue operations in this area. It is not clear how long the municipal authorities are going to allow the joint venture to remain at this location. Second, labor costs have increased significantly and put pressure on profit margins. Third, water shortages, power failures, and power interruptions have become more frequent. This is a nightmare, since chemical factories need tremendous amounts of constant and controllable flows of energy. Thus, managers at Clariant consider their options. Should Clariant stick with its partner, No. 8, and transfer plant operations to another location in China that offers better possibilities for operations and expansion? Should it search for a different partner in China? Or perhaps enter a less developed market, such as Vietnam?

Some internal statements shed light on ideas for future steps:

- *“I think the problem with the power failures will be under control in 1-2 years. We should stick with our partner and maintain the joint venture.”*
- *“At the other end of town we have another joint venture which produces dyestuff. Can we move the pigments production to this production site? And what happens with our partner in this case? Should we stick with No. 8 or buy out their stake?”*
- *“Should we look for a partner with expertise in pigments production? What we consider in this respect is the competitive aspect: Is there a Chinese competitor who can act as an independent player in the market against us? Is there a possibility to generate a win-win situation with a competitor?”*
- *“I think we did consider all important aspects to enable production in this setting. In our pigments production site in Frankfurt, Germany, our plant also is located close to a residential area. In the Tianjin plant, we followed the same*

security and environmental restrictions which we follow all around the globe in our production plants. This might have caused financial hardships for our competitors... 'but we eat this pill because it is Clariant Culture'... In our view there is no problem, but the question is whether the municipal authorities decide to eliminate chemical production in this area and negate the agreement with the joint venture. We can never be sure about the sustainability of our efforts in the joint venture."

- *"Are we still producing in the most cost-efficient place or are there other countries which offer better conditions? Answering this question is not done just by considering the primary costs of power, water and so on. An important consideration is whether we will be able to get appropriately qualified staff."*

Appendix

SEZ	Guangdong Province: Shenzhen, Zhuhai and Shantou Fujian Province: Xiamen Hainan Province (whole province) Shanghai: Pudong New Area Special Economic Zone
COC with ETDZ	Dalian, Qinhuangdao, Tianjin, Yantai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhianjing, Beihai, Yangtze River Delta, Pearl River Delta, Xiamen-Zhangzhou-Quanzhou Triangle in south Fujian, Shandong Peninsula, Liaodong Peninsula, Hebei, Guangxi

Figure 1: Location of SEZs and COCs, 1990

Source: Chemical Week, August 25, 1993

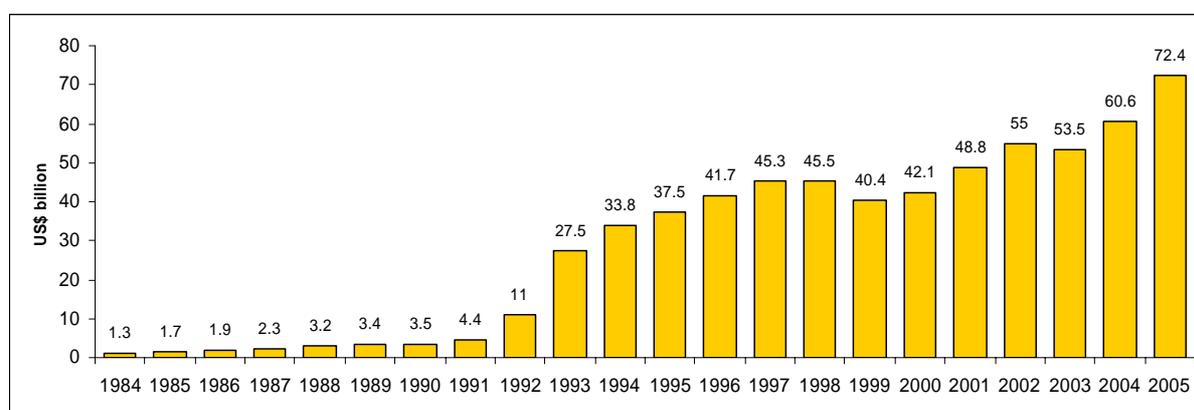


Figure 2: Utilized foreign direct investment (FDI) inflows to China in US\$ billion, 1984-2005

Source: Ministry of Commerce of the People's Republic of China.

	Europe (EU-25)	China
Population	446.343 Million	1.185 Billion
GDP	EUR 6.950 Billion	EUR 572.772 Million
GDP Growth	1.4%	10.5%

Figure 3: Comparison of Europe and China in 1995

Source: Eurostat and www.chinability.com

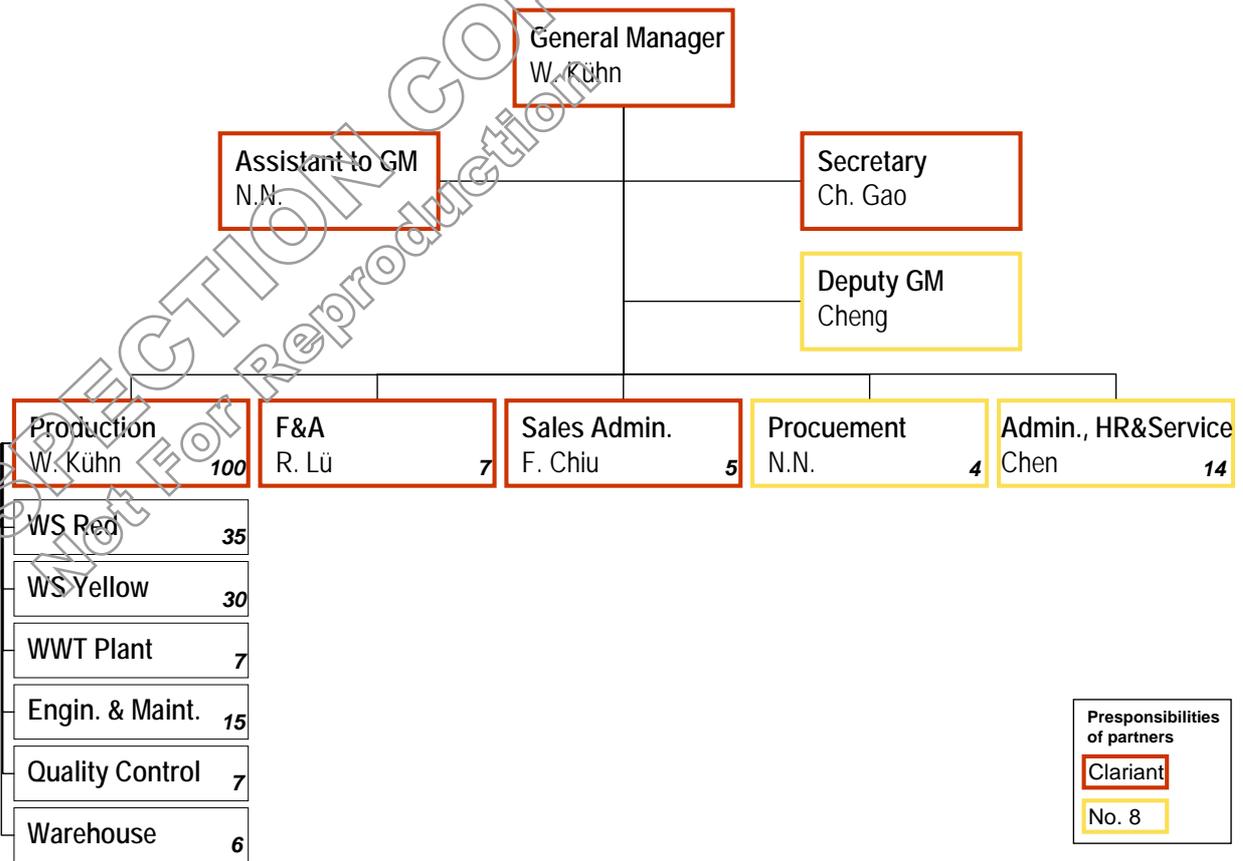


Figure 4: Organizational chart of the joint venture
Source: Clariant

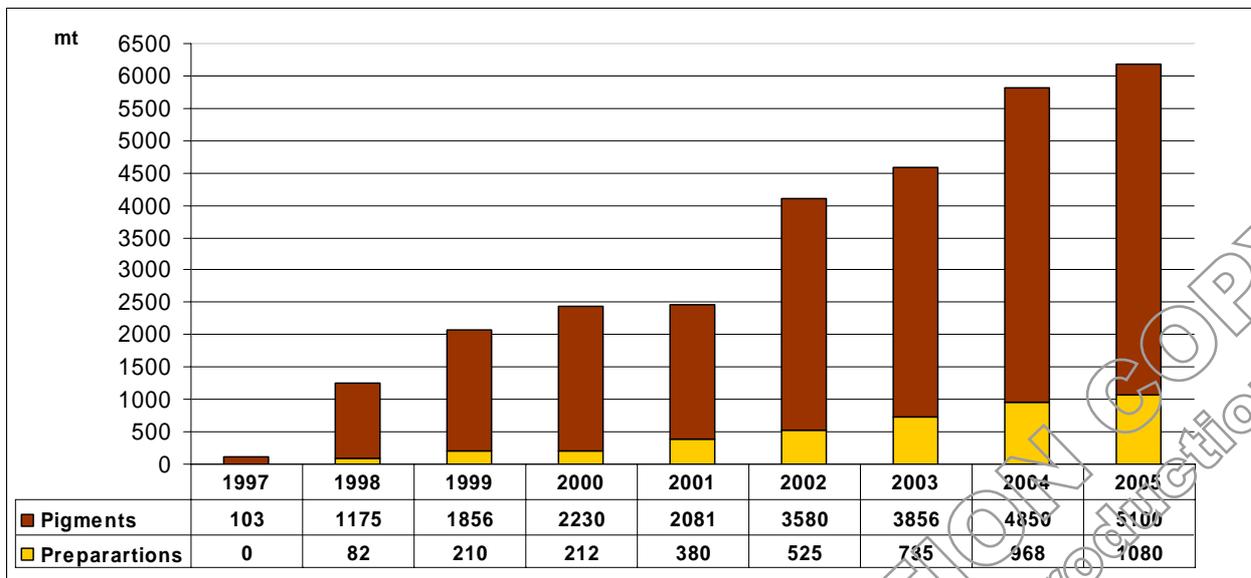


Figure 5: Production Output Clariant (Tianjin) Pigments 1997-2004
Source: Clariant



Figure 6: Shift of pigment plants world wide: A Comparison of 1993 and 2003
 Source: Ink World Magazine, May 2003: 48

	1998	1999	2000	2001	2002
Capacity	270	275	280	285	288
Consumption	210	218	227	211	213
Overcapacity	60	57	53	74	75

Figure 7: Global Capacity Utilization of organic pigments.
 Source: Ink World Magazine, May 2003: 48

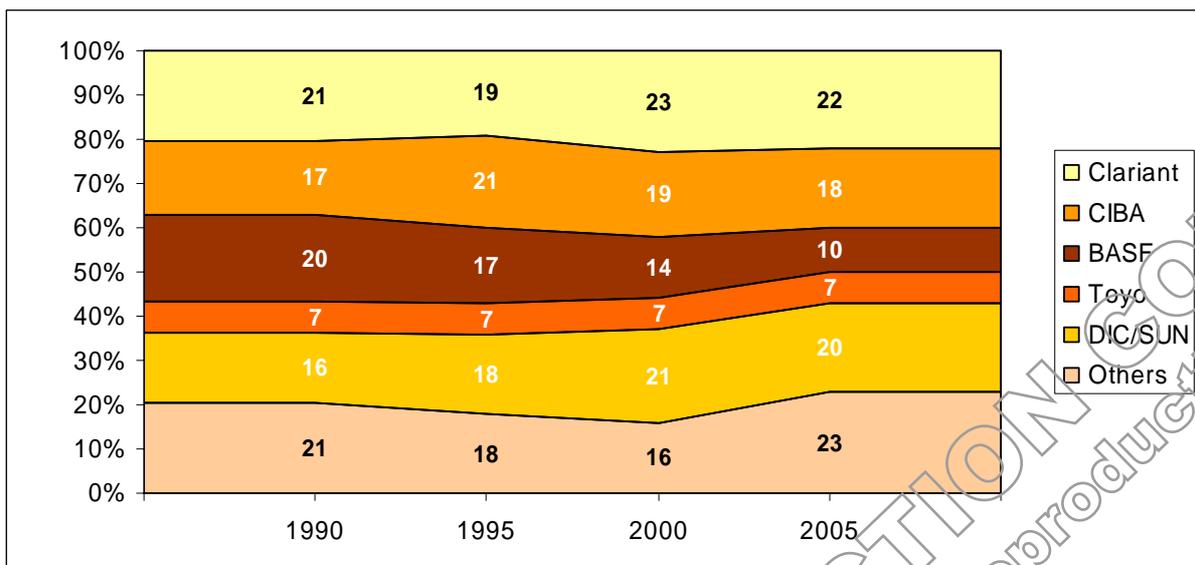


Figure 8: Market Share of Organic Pigment Producers 1990-2005
 Source: Clariant