

# Corning (Taiwan)

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This case was developed with the cooperation of Corning (Taiwan), solely for educational purposes as a contribution to the Project entitled "Capacity Building for Investment Liberalization and Facilitation" conducted under the auspices of the Asia-Pacific Economic Cooperation (APEC). The case is neither designed nor intended to illustrate the correct or incorrect management of the situation or issues contained in the case.



## Executive Summary

*Corning Display Technologies Taiwan (Corning (Taiwan)), a subsidiary of Corning Inc. USA, was established in 1981 and had become a major supplier of glass substrates for active matrix liquid crystal displays (LCDs) manufacturers in Chinese Taipei. Its investment experience had long been regarded as one of the most successful investment cases in Chinese Taipei. Corning (Taiwan), however, also had to face various challenges during the establishment and post-establishment stages of its factories. Given that Corning (Taiwan)'s investment in Chinese Taipei took place during the transformation period of its investment environment with respect to the development of infrastructure, the maturity of the legal system, etc., this case is highly relevant to other developing economies since it shows how foreign investors and host economies could cooperate with each other in establishing an investment-friendly environment beneficial to both parties.*

*This case begins by introducing the business rationale for the investment of Corning (Taiwan). It then moves on to address the four major challenges it faced (i.e. the protection of intellectual properties, infrastructure, consistency of the legal environment and human resource) and illustrates how these were solved through the cooperation among stakeholders. Finally, the case elaborates on the lessons learned from the investment experience such as the collaboration of public and private sectors to facilitate the investment, the role of science parks in foreign investment, the importance of cooperation between the central and local government, and the painstaking but worthwhile effort to improve intellectual property (IP) protection.*

## Introduction

### *Background and Profile of Corning*

Corning Display Technologies Taiwan (**Corning (Taiwan)**), a subsidiary of Corning Inc. USA, was established in 1981. Corning was engaged in the production of glass substrates for active matrix liquid crystal displays (LCDs), also known as thin film transistor liquid crystal displays (TFT-LCDs). It had established two additional glass substrate plants in Southern and Central Taiwan Science Park to support the high demand of Chinese Taipei's panel makers. As of 2008, the company had already invested more than US\$1 billion in its Chinese Taipei operations.

### *The Business Rationale for the Investment*

**Motivation of Investment.** Corning's decision to invest in Chinese Taipei was triggered by the change in the TFT-LCD industry in the late 1990s when Chinese Taipei became an important TFT-LCD manufacturing center catering to the high demand for glass substrates.

The main business of Corning (Taiwan) during its early investment stage was trade. Corning sold several of its products to Chinese Taipei domestic companies. Corning established its main Asian base for display technologies (one of its four business categories) in Japan in the 1990s since Japan was well-known for its advanced high-level technology and engineers and for having the biggest number of interested buyers. However, this situation changed in the late 1990s when the application of TFT-LCD was extended from office equipment such as

calculators to household equipment such as computers and televisions. The change symbolized the arrival and high demand of the TFT-LCDs era.

In response to this increasing demand, more and more manufacturers joined the industry. Faced with the newly rising, highly competitive technological corporations from Korea, Japanese TFT-LCD manufacturers such as Sharp Corporation, Toshiba Corporation and Mitsubishi Electric Corporation sought to cooperate with Chinese Taipei companies and through joint ventures effected the transfer of technology to these companies. Not surprisingly, the demand for glass substrates in Chinese Taipei increased significantly. As a result, Corning contemplated the establishment of factories in Chinese Taipei to provide better services to its buyers and to reduce cost.

**Phase-by-phase Investment Policy.** The investment policy of Corning was based on a phase-by-phase principle as shown in their investment in Chinese Taipei. First, Corning invested in a low-end glass cutting factory which they later developed into a high-tech melting factory which fully integrated glass substrates manufacture. Second, Corning expanded their scale of investment gradually. The expansion increased the demand for water, electricity, land and other resources from time to time.

**Factors Considered in the Investment Decision-making.** Corning considered several factors in its investment decision-making process. These included intellectual property protection, infrastructure (i.e. power, water, road/transportation, accommodation, education, bond service etc.), legislation, enforcement, consistency of laws and human resources. Science parks presented themselves as the total solution to the difficulties faced by the company. With the assistance of relevant authorities, Corning had successively established cutting and melting factories in both the Southern and the Central Taiwan Science Parks.

## Challenges Faced by Corning (Taiwan)

Although Corning (Taiwan) had been successful in this industry, the company actually had to face various challenges during the establishment and post-establishment stages of its factories in Chinese Taipei. Foremost among these were four major challenges, namely, the protection of intellectual properties (IP), infrastructure, consistency of legal environment, and human resources. Corning (Taiwan), however, had overcome these challenges with the assistance of the authorities in Chinese Taipei.

### *Protection of Intellectual Properties*

Chinese Taipei had significantly amended its Patent Act,<sup>1</sup> Copyrights Act<sup>2</sup> and Trademark Act<sup>3</sup> in the 2000s to be consistent with the international standards of IP Protection. The Trade Secret Act<sup>4</sup> was promulgated in 1996.

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<sup>1</sup> Patent Act (2003), R.O.C., the Chinese version is *available at* <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1J0070007> and the English version is *available at* <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL011249> (last visited on 3 April 2008).

<sup>2</sup> Copyright Act (2007), R.O.C., the Chinese version is *available at* <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1J0070017> and the English version is *available at* <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL011264> (last visited on 3 April 2008).

<sup>3</sup> Trademark Act (2003), R.O.C., the Chinese version is *available at* <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1J0070001> and the English version is *available at* <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?>

Although the legislation contains all the necessary provisions for IP protection, what really matters to investors is how these provisions are enforced. Whether relevant government agencies have full understanding of the new laws and whether the government has the policy to truly enforce such rules are critical to the effective protection of IP. It is only when actions are taken by administrative and judicial departments to enforce the laws that investors would believe that the laws are effective and feel comfortable to make investment decisions. The same thing happened in Corning's case.

When Corning established a factory in Chinese Taipei in 1999, one of its concerns was IP protection. The manufacturing process of glass substrates was mainly composed of the melting stage and the cutting stage. The core know-how was in the melting stage (the “**Know-how**”) which was protected under the Trade Secret Act. Without seeing much evidence of the enforcement of relevant laws, Corning was concerned that its Know-how might be easily infringed by equipment suppliers and ex-employees and that there were no sufficient and efficient remedies to this problem. Corning thus decided to operate initially only the cutting stage of its business in Chinese Taipei.

During its initial business operation, Corning gradually built up its confidence in the Chinese Taipei environment after observing how Chinese Taipei authorities enforced IP-related laws. Corning was delighted to find out that the necessary laws were implemented and that those who infringed on IP rights were also properly prosecuted. In addition, the legislation and mechanism for implementing the non-competition clause with the employees had already been fully developed.

The above findings persuaded Corning to introduce the glass melting factory in Chinese Taipei and establish its first full manufacturing factory in the Southern Taiwan Science Park in 2003.

**The Non-Competition Clause.** Due to business considerations, companies sometimes elect not to apply for patents but seek protection under the trade secret laws. However, compared to patent rights, the existence and scope of trade secrets are relatively ambiguous. The plaintiff has to prove both the existence of a trade secret and the infringement of such rights. This is a great hurdle that the plaintiff has to overcome.

Non-competition restriction applied to the employees was therefore devised to solve the above-mentioned difficulties that companies faced when asserting their rights. However, the non-competition clause in employment agreements has to address several conflicting rights, such as trade secret, work freedom and labor rights. There is still no consensus on how to harmonize these conflicting rights. As a result, the validity of non-competition clauses is always challenged first in a lawsuit. Given the complexity of the fact-finding and legal interpretation of such cases, the maturity of the jurisprudence in this field plays an important role in the completeness of trade secret protection.

The Trade Secret Act of Chinese Taipei was enforced in 1996. The provisions covered all the main issues of trade secret protection identified by the legislation of economies with highly developed trade secret protection systems. However, due to the heavy burden of proof, companies lacked the incentive to bring a case to court since most believed that they had little chances of winning the case. From mid-1999 to mid-2006, only 45 trade secrets related cases were initiated in the district courts of Chinese Taipei<sup>5</sup> and only five were won by the

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Isid=FL011233 (last visited on 3 April 2008).

<sup>4</sup> Trade Secret Act (1996), R.O.C., the Chinese version is available at <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1J0080028> and the English version is available at [http://www.tipo.gov.tw/secret/law\\_secret/law\\_secret\\_2.asp](http://www.tipo.gov.tw/secret/law_secret/law_secret_2.asp) (last visited on 3 April 2008).

<sup>5</sup> Oliver Hung et al., *Quantitative Analysis of the ROC Court Decisions on Trade Secret Infringements and*

plaintiffs. Even so, provisions of the Trade Secret Act were further clarified by the courts. Such clarifications enabled companies to have a better understanding of the nature of trade secrets and the prerequisite measures that they had to adopt before asserting their claim to trade secret protection.

Compared to the unpopularity of the trade secret lawsuits, legal proceedings initiated based on non-competition clauses attracted more attention. During the same period, 113 cases were initiated and 38 of them were won by the plaintiffs. Compensations for damages were granted in 37 cases and permanent injunction was granted in three cases.<sup>6</sup>

With the increase in cases, the courts were able to develop a more sophisticated way of determining how to reach a balance between trade secret protection and labor's freedom to work. The validity of non-competition clause, for example, was determined by the court based on five principles: 1) whether there was legitimate interest of the employer to be protected; 2) whether the original position or duty of the employee was of any significance; 3) whether the restriction imposed on the employee (such as the period and the area of such restriction) was reasonable; 4) whether there was reasonable compensation; and 5) whether the employee violated the duty of good faith.<sup>7</sup> These judgments and principles had two main functions. First, they showed that the laws were actually implemented and the violators would be punished. Second, the five principles provided companies with rules to follow in designing a valid and enforceable non-competition clause.

Furthermore, with the awareness of IP rights, followed by the increase in cases in this field, there was a demand from industries for an IP court composed of judges specializing in IP laws and assisted by technical examination officers. The court was expected to handle IP cases in a way that could best accommodate the needs of technology development and economic development. In response to such requirement, the Intellectual Property Court Organization Act<sup>8</sup> and the Intellectual Property Case Adjudication Act<sup>9</sup> were promulgated in early 2007.

The establishment of the Intellectual Property Court allowed a professional court to hear intellectual property cases exclusively which might as a result, improve the efficiency and effectiveness of the trial. The installation of technical examination officers,<sup>10</sup> who were to provide evaluation, advice and analysis of technical information, was designed to help the judges understand the complicated technology in order to reach a highly informed judgment. Besides, the device of confidentiality preservation order protected both parties from leaking trade secrets during the proceedings.<sup>11</sup> In addition, the motion for preservation of evidence or application for preliminary injunction provided in the Intellectual Property Case

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*Violation of Non-Compete Clauses*, 4 TECH. L. REV. 1, 4 (2007).

<sup>6</sup> *Id.*, at 13.

<sup>7</sup> See Judgment Lao-Shan Tzu No. 39 of the Supreme Court in year of 1997 and Directive (89) Tai-Lao (2) Tzu No. 0036255 of Council of Labor Affairs.

<sup>8</sup> Intellectual Property Court Organization Act (2007), R.O.C., the Chinese version is available at <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1A0010090>, and the English version is available at <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL042719> (last visited on 3 April 2008).

<sup>9</sup> Intellectual Property Case Adjudication Act (2007), R.O.C., the Chinese version is available at <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1A0030215>, and the English version is available at <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL042720> (last visited on 3 April 2008).

<sup>10</sup> See Intellectual Property Court Organization Act, *supra* note 9, §§15-16,

<sup>11</sup> See Intellectual Property Case Adjudication Act, *supra* note 10, §§11-15.

Adjudication Act provided plaintiffs more weapons to protect their interest while going through the procedures at the initial stage of litigation.<sup>12</sup>

The legislation of intellectual property laws was only a starting point; the case laws brought life to it. The serious attitude of the IP authorities and the judgments by the courts had demonstrated the determination of Chinese Taipei to enforce IP protection. Actual enforcement and good communication with potential investors were key to building the confidence of investors in this regard.

The setting up of Corning's melting factory in the Southern Taiwan Science Park at its second investment stage showed the company's affirmative attitude toward the improvement of IP protection and the Chinese Taipei authorities' close coordination with investors.

### *Infrastructure*

In making investment decisions, Corning was primarily concerned with the sufficiency of infrastructure, land, electricity, water, road (transportation) and relevant services. Hsinchiu Science Park was the most developed science park with well-equipped facilities in Chinese Taipei. However, it was fully occupied at the time Corning (Taiwan) decided to establish a glass-cutting factory.

Fortunately, the Southern Taiwan Science Park provided a timely solution to this problem for two reasons. First, most of the TFT-LCD companies were located in the Southern Taiwan Science Park. Among them were the Chi Mei Optoelectronics Corporation (the second largest TFT-LCD manufacturer in Chinese Taipei) and HannStar Display Corporation. Furthermore, since it was designed to be an opto-electronics specialized area, the Southern Taiwan Science Park attracted companies dealing with liquid crystal and alignment layer, polarizer, color filter, photomasks, backlight module and LCM module, which were either the downstream or upstream industry of glass substrate. Therefore, by establishing the cutting factory in the Southern Taiwan Science Park, Corning (Taiwan) would enjoy the advantage of industry clustering and proximity to its customers. Second, the Southern Taiwan Science Park was ready to operate at that time.

Notwithstanding the above-mentioned advantages, Corning (Taiwan) faced difficulties, including a shortage of land, steel and electricity, during the establishment and the expansion stages. Corning resorted to the relevant departments such as the Ministry of Economic Affairs and Southern Taiwan Science Park Administration for assistance. Working as coordinator, the authorities invited the Taiwan Power Company, China Steel Corporation and other companies to come up with a solution. With their help, problems were immediately solved. The coordination by the Science Park Administration with stakeholders and the government's full support contributed to this expeditious solution.

However, just providing instant responses to the requests or needs of respective investor is not sufficient to establish a satisfactory investment environment. An educated, visionary pre-planning for science parks is also essential to address the infrastructure concerns of investors as well. This need is more pronounced in the expansion stage of investment.

Although the Southern Taiwan Science Park Administration played an important role in solving the lack of infrastructure faced by Corning (Taiwan), it had an inherent limitation in the assistance it could provide to solve the problems occurring during the expansion stage. The insufficiency of electricity faced by Corning (Taiwan) in the expansion stage was solved

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<sup>12</sup> See *id.* §18, (2007), R.O.C.

by negotiating with the Taiwan Power Company. But there was no solution to the lack of land and the heavy traffic, which could have been prevented by more sophisticated planning of the science parks.

### *Consistency of Legal Environment*

Tax incentive provided under the Statute for Upgrading Industries of Chinese Taipei, by which Corning (Taiwan) enjoyed a five-year tax holiday, was a great incentive to the company's investment in Chinese Taipei. Corning's and other international enterprises' investments were evaluated based on a 10 to 20 years basis with phase-by-phase investment.

The key to effect the preferential tax treatments is the consistency of the legal environment. If the government randomly changes policy, the confidence and the interests of the investors would be severely impaired.

In order to upgrade industries and enhance economic development, tax preferential treatments were offered to newly emerging, important and strategic industries under the Statute for Upgrading Industries. Pursuant to Article 9 of the Statute for Upgrading Industries,<sup>13</sup> companies satisfying the criteria as newly-emerging industry were exempted from business income tax for five successive years from the start of product sales or service provision. The same benefit was accorded to subsequent expansion of such companies. The Statute for Upgrading Industries also provided flexibility for shareholders of such companies to enjoy tax preferential treatment in the form of shareholders' personal income tax deduction. This benefit was a great incentive to Corning's investment decision in Chinese Taipei. The company elected to invest in Chinese Taipei and enjoy the five-year tax holiday premium.

However in 2006 the Chinese Taipei authorities introduced a new tax regulatory reform. Prior to the enforcement of the new regulation, investors including Corning (Taiwan) raised great concerns about the impact of the new regulation on the tax holiday enjoyed by investors. Taking into consideration the need to protect foreign investments, the authorities coordinated with relevant investors such as the American Chamber of Commerce, the Association of European Chambers of Commerce and other representatives from industries, Legislative Yuan, and other sectors to come up with a solution to protect these interests. A transition clause was later provided in the final legislation in an attempt to achieve a balance of interests among the stakeholders.

The rationale to initiate this tax reform was based on fairness. Tax exemption provisions were incorporated in the Income Tax Act and other special acts such as the aforementioned Statute for Upgrading Industries. However, the abusive use of tax exemption resulted in a large tax revenue loss by the government and the over-concentration of the application of tax exemption in high revenue industries or high income workers. In response to the unfairness and duplication of tax exemption, the Ministry of Finance (**MOF**) initiated the tax reform to resolve the problems.

During the tax regulatory reform process, the Chinese Taipei authorities made considerable effort to gather the opinions of experts and stakeholders when the new laws were drafted. A research group of tax experts from the College of Law, Department of Accounting and other

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<sup>13</sup> See Statute for Upgrading Industries, §9 (2008), R.O.C., the Chinese version is available at <http://law.moj.gov.tw/Scripts/newsdetail.asp?no=1J0040016>, and the English version (only updated until 2003) is available at <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL011175> (last visited on 3 April, 2008).



colleges of the National Taiwan University were engaged by the MOF to explore the feasibility of establishing alternative minimum tax treatment in Chinese Taipei. In addition, other research groups composed of economic experts were engaged to conduct research on the impact of tax reform on income distribution and the impact of alternative minimum tax on macro-income and prices of commodities.

After obtaining a positive conclusion that the introduction of alternative minimum tax treatment would improve the uneven distribution of income of nationals without obvious impact on the prices of commodities and would promote private investment and consumption beneficial to the growth of GDP in the long-term, the MOF took the next step to establish the Tax Policy and Legal Consulting Commission of MOF. The MOF invited scholars, experts, accounting firms, law firms, foreign investment association and representatives of the Industrial Technology Research Institute of Taiwan to serve as commissioners and to provide their professional comments on different aspects such as the legislating technique, the appropriate tax rate and whether add-on or alternative minimum tax was better.

The MOF also communicated with, among others, the representatives from different industries, foreign investors and banks to understand their concerns and develop the alternatives. The Tax Reform and Citizen Common Consensus Conference was held and attended by nationals, while four other forums were held in the southern, northern and middle part of Chinese Taipei to gather the recommendations from the public. Meanwhile, six of the biggest industrial and commercial associations, including the General Chamber of Commerce, National Association of Industry and Commerce, National Federation of Industry, Electric and Electronic Manufactures Association, National Association of Small and Medium Enterprises, Taiwan Federation of Industry and some other foreign investors, proposed a number of recommendations concerning the implementation of alternative minimum tax during the Commission of Second Economic Development Consulting.

The core concept of the legislation on the Income Basic Tax Act<sup>14</sup> was to establish an income tax system under which individuals and corporations made basic contribution to national finance. Income exempted from the tax levy under existing legislation, including but not limited to the Statute for Upgrading Industries, Income Tax Act, Encouragement of Private Participation in Infrastructure, were added back when calculating the basic tax amount.<sup>15</sup>

To protect the investors' interest in the tax holidays they enjoyed under the existing laws, a transition clause was added to the final version of the Income Basic Tax Act. Pursuant to the Income Basic Tax Act, the five-year tax holidays could still be enjoyed by:

- a) those who have obtained the tax exemption approval by MOF prior to the effective day of the Income Basic Tax Act (the “**Effective Date**”);
- b) those who have completed the investment plan and obtain the tax exemption approval by MOF within one year after the Effective Date;
- c) those who have obtained the approval of investment plan issued by authorities in charge and have started the construction of investment prior to the Effective Date without changing the investment plan; and

<sup>14</sup> Income Basic Tax Act, §1 (2005), R.O.C., the Chinese version is available at <http://law.moj.gov.tw/Scripts/NewsDetail.asp?no=1G0340115&FL>, and the English version is available at <http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL037988> (last visited on 3 April 2008).

<sup>15</sup> See *id.* §7.

- d) those who have obtained the approval of the investment plan issued by authorities in charge and started the construction of investment within one year after the Effective Date, and completes the investment plan within three years after the approval was issued without changing the investment plan.<sup>16</sup>

With this transition clause, the interests of companies who had completed or obtained approval of their investment plan or had obtained tax exemption approvals were protected. Companies who were only contemplating the investment without obtaining approval or without making actual investment might reconsider whether or not to invest based on the new legislation.

From the Corning (Taiwan) case, it can be seen that complete preparatory work, good communication with stakeholders and flexibility to adopt transitional measures are the key factors in attaining this win-win result. The communication channel between the government and the investors has to be established and maintained. This way, a relationship based on trust may be developed and both parties may promptly raise and respond to any new issues.

The Center of Economic Deregulation and Innovation (**CEDI**) was established under the Council for Economic Planning and Development, Executive Yuan in 2000. One of its main tasks was to eliminate investment obstacles and analyze and coordinate economic and financial regulations. Functioning as the contact point between the investors and the government agencies in order to develop a friendly investment environment, CEDI received the recommendations of business associations and relayed these to concerned authorities. It also coordinated with different departments of government to further address the concerns of the business associations. CEDI then provided the business associations the appropriate feedback and consolidated responses to their concerns.

The Association of European Chambers of Commerce and Industry and the American Chamber of Commerce came up with proposals on some investment-related initiatives and expressed their concerns on the investment environment of Chinese Taipei each year. In the 2007-2008 "Suggestions from Association of European Chambers of Commerce and Industry," the deregulation of the service industry, tax exemption and investment promotion were cited as important issues which were valued by the government. In 2006-2007, tax exemption was cited as an issue as well. After receiving these suggestions, the MOF responded to the concerns in detail. In addition to communication via letters, the MOF also arranged meetings to facilitate the dialogue between the investors and government authorities.

The participation of these associations ensured that investors' concerns were presented in an organized way to the government. Likewise, it provided the government a chance to communicate with stakeholders to clarify the misunderstanding or to adjust their measures accordingly. Such a mechanism had played an important role in providing a favorable investment climate in the economy. The crucial elements to its success had been the maturity of the organization and the attitude of the government.

### *Human Resource*

Corning (Taiwan) had a big demand for human resource during the different investment stages of setting up and operating its factory.

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<sup>16</sup> See *id.* §16.

In the initial stage, many foreign technicians were needed to install the equipment since they were more experienced and familiar with the machines Corning used. However, Corning encountered some problems with the inspection and issuance of working visas to these foreign technicians due to Chinese Taipei's relatively strict regulation on the hiring of foreign technicians. The Council of Labor Affairs, Executive Yuan of Chinese Taipei provided various forms of assistance in this regard. However, as mentioned above, the policy of Corning was to invest phase-by-phase. The same workers who were tapped by Corning for equipment installation were also needed when the factory expanded from time to time. Hence, the short-term visa issued to the workers did not satisfy the need of Corning.

This issue involving foreign workers is, to some extent, particular to international enterprises with multinational teams and might have been new to the authorities. Relevant authorities, when issuing visa, may take this into consideration.

In the operation stage, Corning (Taiwan) had to recruit thousands of domestic engineers and technicians immediately, given the requirement of speed in the high-tech industry. Corning (Taiwan) successfully hired the engineers and technicians through the career fairs held all over Chinese Taipei, coordination with schools and the assistance of relevant authorities. Corning's success in recruiting high-quality labor in such a short period of time was attributed to the phasing-out of traditional industries in Chinese Taipei which left a sizeable pool of experienced workers who were ready to work with the company. With appropriate training, these workers were more than capable of doing the job in the high-tech industry.

This experience is applicable to those economies where the traditional industry is phased out. The high quality of human resources always plays an important role in attracting investment.

In addition to continuously implementing policies pursuing high-quality education to develop the optoelectronics industries, a project named "Two Trillion & Two Stars" was introduced in 2002. This project aimed to fully support the development of the semiconductor, image display, biotech and digital industries. Specialized offices were established to make the strategic plan for industry development. Concerned authorities, including the Industrial Development Bureau of Ministry of Economic Affairs and the National Science Council and Council of Labor Affairs, conducted research and projected the demand and supply of high-tech human resources regularly. Based on the information they had, the different departments then worked together to design and provide professional training to the workers to meet the needs of industries. Cooperation with universities and professional schools was another important option. With these training courses, which were tailored to the needs of industries, it was easy for companies to find qualified workers.

To attract foreign engineers that Corning needed to work in Chinese Taipei, the government improved the living conditions in the Southern Taiwan Science Park to a large degree, particularly its traffic management system, leisure facility, educational institution and the green environment.

To improve the transportation system, connecting roads to adjacent regions were completed. The Tainan Station of High Speed Rail was only fifteen minutes away from the Southern Taiwan Science Park, which made it easy to travel all over Chinese Taipei.

Three different theme parks designed to make the Southern Taiwan Science Park a more pleasant environment to work in were established, namely, the sports park, the ecological park and the historical museum. The sports park, covering more than six hectares, was projected to be fully open in 2008. The ecological park originated from a flood-control plan involving the building of ten flood-control ponds. To make the best use of the ponds, the plan was expanded to include an ecological park. The sophisticated combination of flood-prevention facilities and the ecological park provided children a chance to enjoy nature and

learn about the ecological world. The historical museum came about because the site of the Southern Taiwan Science Park was full of fossil. To strike a balance between the protection of a historical site and the development of a science park, the companies and the government worked together to build the museum to properly preserve the fossils. The above examples demonstrate Chinese Taipei's ability to better develop and increase the value of its resources.

A good educational institution was needed to attract foreign workers to stay in the Southern Taiwan Science Park. To address this, the National Nanke International Experimental High School, merging the original Nanke elementary and junior high school, was established in 2006. The establishment of the school was designed to attract foreign workers. English, Japanese and Chinese were taught in the school. With the convenience of its geographic location and specially designed courses, the school aimed to inspire the interests of students in the field of science, arts, literature and others. Judging from the success of the experience of the National Experimental High School at Hsinchu Science Park, it would not be difficult to predict that the National Nanke International Experimental High School would soon become another successful story that would also serve as an incentive for foreign and domestic workers to stay in the Southern Taiwan Science Park.

## **Lessons Learned**

### *Factors Affecting Investment Decision-making: Public/Private Sector Collaboration*

The investment experience of Corning (Taiwan) points out that both the public sector and the private sector play important roles in attracting foreign investment. As mentioned, the authorities of Chinese Taipei provided a friendly investment environment, including IP protection, infrastructure, tax incentives and assistance in labor recruitment. While the basic requirements of investment were easily satisfied by the government, it was, however, the private sector which made Chinese Taipei a conducive and highly attractive environment for investments.

The private sector functioned as the catalyst that facilitated the investment of Corning in Chinese Taipei for two reasons.

First, Corning (Taiwan) was encouraged to expand its investment in Chinese Taipei because of the increasing demand for glass substrates coming from Chinese Taipei TFT-LCD manufacturing companies, which were clustered in the Southern Taiwan Science Park. By establishing the cutting factory, Corning (Taiwan) would be able to enjoy the advantage of industry clusters and geographic proximity to its customers.

Second, the investment of Corning in Chinese Taipei was carried out phase-by-phase, from a low-end cutting factory to a high-tech melting factory. While establishing the cutting factory, the authorities raised some concerns on whether the cutting factory in terms of its technology level was eligible to locate in the science park. Considering the importance of the role Corning (Taiwan) played in the TFT-LCD industry supply chain, some of its client companies, which were also major TFT-LCD manufacturing companies in Chinese Taipei such as AU Optronics Corporation and Chi Mei Optoelectronics Corporation, successfully convinced the relevant authorities to permit Corning's (Taiwan) to establish a cutting factory in the Southern Taiwan Science Park. This first step of Corning's (Taiwan) investment was very important to the subsequent investments. Through its exploratory investment in Chinese Taipei, Corning (Taiwan) and the host government had a chance to know each other better and cooperate further.

This case highlights the importance of understanding how the public and the private sector cooperated with each other to provide an attractive investment environment. Although Chinese Taipei did not provide a perfect investment environment in the preliminary stage of Corning's investment, both the public and private sector of Chinese Taipei responded efficiently to satisfy the needs of the investor from time to time, which brought about the win-win result for both Corning (Taiwan) and the Chinese Taipei TFT-LCD industry.

### *Science Parks and Foreign Investment*

This case illustrates the positive effects of science parks and how they serve as an answer to the difficulties that an incoming investor might face.

For a long time, Chinese Taipei had been studying the positive effects of science parks. The Southern Taiwan Science Park, where TFT-LCD companies were clustered, provided industry cluster advantage for relevant enterprises. As a science park, it made available land, electricity, water, transportation, accommodation and educational facilities for investing enterprises. Hence, it satisfied almost all the infrastructure requirements of investors. More importantly, land, which was usually expensive and which the enterprise would prefer to rent rather than to buy, was offered for lease in the science park, which significantly reduced the investment cost.

However, one should keep in mind that the investment might expand in the very near future and the need for water, electricity, land, etc., will increase on a great scale following such expansion. Thus, a comprehensive and visionary plan must be developed before the establishment of the science park and must be amended from time to time. The relevant authorities should accept the application of investment based on the planned accommodation of the science park. In this way, science parks could be more efficiently and systematically utilized and be more responsive to the new needs of investors in the event of future expansion.

### *Cooperation between Central and Local Government*

From the experience of Corning (Taiwan), it was apparent that the central authorities of Chinese Taipei were very service-oriented in helping resolve the difficulties investors faced. On the contrary, the local government to some extent failed to follow the policy of the central government and sometimes implemented measures that had adverse effect on the investment.

An example of the inconsistency of the policy between the central and local government was what occurred in the Central Taiwan Science Park. The establishment of the science park was determined by the central government and implemented with the assistance of the local government. Although urban planning was subject to its authority, the local government failed to consider the existing science park in making urban planning decisions. For instance, the Taichung City government had recently decided to permit a retirement home to be set up near the Central Taiwan Science Park. This in effect substantially raised the standards of noise and air pollution in the area. This kind of change was not expected by the investors and had resulted in an increase of cost on their part.

The success of investment depends on the support and assistance of the local and central government. To establish a friendly investment environment, the cooperation and communication between the local and central government is essential.

### *Painstaking Process but Fruitful Result on the Improvement of IP Protection*

Though there seems to be complete and effective legislation and enforcement of IP laws in Chinese Taipei at present, the process of attaining this stage had not been easy in any way.

Chinese Taipei's vigorous legislation of IP laws in the 2000s was undertaken under great pressure from foreign governments and businesses, which urged Chinese Taipei to strengthen the protection of IP rights. Hence, a series of measures was undertaken by the authorities of Chinese Taipei in response to their demand. In addition to the significant amendment of IP laws, an IPR-specific task force was established to combat piracy. Regular training programs were provided to judges and prosecutors on IP rights matters. All these efforts were aimed to improve IP protection in Chinese Taipei in a short time.

However, the intensive and aggressive legislation accomplished in a short time was followed by protests initiated by different groups. When a negotiation conference or a legislative assembly regarding IP-related issues was held, drastic protests frequently took place in front of the Legislative Yuan, the Bureau of Foreign Trade and other government agencies. How to introduce the international standard on IP protection into the new legislation in a way that would accommodate the needs of domestic industry and society was the most difficult task for the legislators. Much was done to communicate with stakeholders and educate the public. Finally the appropriate bills were passed successfully.

Although the progress was painful, the outcome had been fruitful. The persistent attitude of Chinese Taipei authorities to establish a legal system for IP protection that was consistent with international standards had built up the confidence of investors in Chinese Taipei and successfully attracted foreign investment. But the story had not ended yet. With the development of technology, more and more new issues confronted the authorities of Chinese Taipei. Their continuous support towards the protection of IP rights would be essential to establishing a friendly and conducive environment for investment.

## **Conclusion**

The investment process of Corning (Taiwan), though seemingly hydra-headed at first, ends with fruitful results. The four major challenges faced by Corning (Taiwan), namely, the protection of IP, infrastructure, consistency of legal environment and human resources, were resolved efficiently with the aid of both public and private sectors of Chinese Taipei.

Consistent communication among related stakeholders is a key factor in promoting investment inasmuch as investment is a continuous activity. There will always be emerging issues to be taken care of and there is always a possibility of investment expansion. With good communication, authorities are able to address the concerns and the needs of investors in a precise and timely manner. At the same time, the investors are able to understand better the investment area and are willing to make further investments. Differences are resolved gradually and the investment relationships are tightened up. The well-established communication channel between Corning (Taiwan) and the authorities of Chinese Taipei is expected to play an important role in the investment of Corning (Taiwan) in the future and make Chinese Taipei a more investment-friendly environment.