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Exploiting Innovative Technology in Offshore Markets: A U.S. Perspective*

*Leonard B. Mackey***

This Paper is directed to approaches for exploiting innovative technology in offshore markets with particular attention to transferring technology by licensing. More particularly, licensing from the United States to developed and developing countries is discussed, together with observations on the legal, and where significant, political environment for transferring technology. This is followed by a brief description of a system for financing and managing development of new technology, an example of successful multinational development and exploitation of innovative technology by licensing.

Attention is directed to western European countries in the European Economic Community ("EEC") because the EEC is a significant market for the United States. The size of the EEC market exceeds that of the United States and it is a market with which the United States carries on a very significant portion of its overseas business. Moreover, the EEC is directing substantial efforts toward achieving by 1992 a unified market with no internal trade barriers. The potential result of these efforts is of concern to businesses outside the EEC. There is concern that those outside the EEC may experience substantial barriers to doing business in the EEC. Licensing may provide an effective means for exploiting technology in the EEC.

Comments will also be directed to licensing in a developing country, and to a few of the challenges and difficulties that may be experienced when licensing into a developing country.

EXPLOITING TECHNOLOGY

Essentially, there are two approaches for exploiting innovative technology in an offshore market. One approach is to embody the technology in products or services and export these products or services to the market. The second approach is to license, transferring the technology, together with intellectual property licenses, to an offshore entity. The entity may be a foreign firm or person, or a joint venture, possibly involving an equity contribution to the joint venture by the licensor. This Paper is directed to licensing.

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What and When to License

The most essential ingredient of a successful licensing program, in addition to a politically and economically receptive environment in the country of the prospective licensee, is the availability of a commercially proven product or service together with a researched and established need in a prospective licensee country for the product or service. Generally, only commercially successful products or services should be considered for licensing.

Ideally, before being licensed a technology should have been fully developed, debugged and successfully marketed as a product or service in the home country of the licensor, with licensing undertaken as an alternative to exporting the product or service to the licensee country. Licensing of uncommercialized technology often amounts to the mere selling of inventive, innovative or engineering "services" at a relatively low price, compared to the price that can and should be realized from licensing a commercially developed product or service embodying the technology.

Whether to License

An exporter of a product or service from the United States can expect its access to a foreign market to be limited or at least made difficult by import duties, failure of its product to meet local standards, lack of knowledge of and access to local channels of distribution and a myriad of tariff and non-tariff barriers to successfully and profitably accessing the market. An offshore licensee should facilitate access to the local market in which it is based since it does not experience tariff barriers. Furthermore, the offshore licensee can be expected to have knowledge of and access to the necessary channels of distribution, in addition to full knowledge of local standards and how to meet these standards.

A thorough discussion of considerations involved in the exploitation of a product or service in an overseas market, whether or not to license, what and when to license and how to license is beyond the scope of this Paper. However, an excellent analysis and checklist appears in the *Licensing Law Handbook*.¹

UNITED STATES LAWS AND REGULATIONS

The environment for transferring technology from the United States in most instances is relatively permissive. Licenses will rarely be required for exports to the free world and the licensing requirements for most of the rest of the world, with the exception of a few specifically embargoed nations, have been substantially eased and streamlined.

Transfer of technology from the United States to an overseas destination is now governed by the Omnibus Trade and Competitiveness Act

¹ ARNOLD, WHITE & DURKEE, LICENSING LAW HANDBOOK, 11-21 (1988).

of 1988 ("1988 Act").² The 1988 Act was preceded by the Export Administration Act of 1979 ("1979 Act"), as amended in 1985.³ Under the 1979 Act, the President could control exports for national security, foreign policy and short supply reasons.

A National Academy of Science panel on National Security Controls reported in 1987 that it found inadequacies in the export control process and recommended reforms. The panel found that the export controls tended to damage the U.S. economy without improving national security. This caused Congress to undertake reform efforts before the normal expiration of the amended 1979 Act, and these reforms are reflected in the 1988 Act.

The result of the 1988 Act is a very substantial reduction in the licensing requirements and a streamlining of procedures for the export or re-export of most U.S. technical data. However, technology and products having military significance remain controlled by the International Traffic in Arms Regulations.⁴

Under the 1988 Act, a company or person wishing to export or re-export U.S. technical data anywhere in the world needs to review the U.S. Department of Commerce Export Administration Regulations to determine whether an export license is required. If the data is controlled for a particular destination, the exporter or licensor must apply for and receive an export license. Thus, the transfer of goods, provision of services and transfer of technology from the United States to the free world is essentially without restriction unless the goods, services or technology are of potential military significance.

Background on the U.S. regulation of trade in both the free world and in the east and west is analyzed in a paper by John Ellicott, *Competitive Impact of U.S. Export Control Regulations*.⁵ Moreover, an excellent guide to the export controls dictated by the 1988 Act appears in a U.S. Chamber of Commerce publication, *The Omnibus Trade and Competitiveness Act of 1988, A Straight Forward Guide to Its Impact on U.S. and Foreign Business*.⁶

LOCAL LAWS AND REGULATIONS

A significant aspect of technology transfer and licensing into an offshore market is the laws and regulations of the government which directly affects licensing agreements in the market, particularly the terms and conditions which such laws and regulations consider permissible.

These laws and regulations are often complex and subject to local

² Pub. L. No. 100-418, 102 Stat. 1107 (1988).

³ Pub. L. No. 69-72 (codified as amended at 50 U.S.C. §§ 2401-20 Supp. 1987).

⁴ International Traffic in Arms Regulations (ITAR), 22 C.F.R. § 120 (1988).

⁵ 14 CAN.-U.S. L.J. 63 (1988).

⁶ U.S. CHAMBER OF COMMERCE, *THE OMNIBUS TRADE AND COMPETITIVENESS ACT OF 1988* (1988).

interpretation, modification and application. Accordingly, there is no substitute for professional review of a proposed licensing arrangement in an offshore market, including review of applicable laws and regulations at the time the technology transfer is contemplated.

THE EUROPEAN ECONOMIC COMMUNITY

A major market is the European Economic Community, often referred to as the Common Market, which was established in early 1958 pursuant to the Treaty of Rome ("Treaty") which was signed on March 25, 1957.⁷ The EEC is composed of the following twelve member countries: Belgium, Denmark, France, Germany, Greece, Holland, Ireland, Italy, Luxembourg, the United Kingdom, Spain and Portugal.

The EEC can be viewed as similar to the United States in that each member country is like a state in the United States. It is the intent of the Treaty that there be no barriers to commerce, e.g., a free flow of goods among the member countries — as between states in the United States. This absence of barriers to trade among the member countries has not yet been effected, but a significant effort is being expended to achieve this result by the end of 1992.

This "free flow" of goods and services among the member countries is treated in articles 9 and 10 and in articles 30-35 of the Treaty. However, unlike the United States, each country has its own patent system. The existence of and accommodation of the patent system in each country is reflected in article 36 of the Treaty which permits *inter alia* restrictions on movements of goods based on the protection of industrial property, e.g., a patent.

The EEC has an antitrust law.⁸ The most pertinent provision relating to technology transfer is article 85 of the Treaty. Enforcement of the EEC Competition Rules rests primarily with the European Commission ("Commission"), the executive branch of the European Community.

Article 85(1) of the Treaty prohibits all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between member countries and which have as their object or effect the prevention, restriction or distortion of competition within the EEC. Article 85(2) renders agreements or decisions, prohibited pursuant to article 85(1), null and void. However, article 85(3) introduces a "rule of reason" whereby the prohibitions of article 85(1) may be declared inapplicable by the Commission when an agree-

⁷ Treaty of Rome (EEC), Mar. 25, 1957, arts. 9, 10, 30-36, 85, 86, 298 U.N.T.S. 11, *reprinted in* 1 Common Mkt. Rep. (CCH) ¶¶ 200-399, 2000-2199; EEC Council: Regulation No. 17: First Regulation Implementing articles 85 and 86 of the Treaty, 13 O. J. EUR. COMM. 204 (1962), *reprinted in* Common Mkt. Rep. ¶¶ 2400-2660, 2698-2726; EEC: Regulation No. 27 of the Commission: First Regulation Implementing Council Regulation No. 17 of 6 February 1962, 35 O.J. EUR. COMM. 1118 (1962), *reprinted in* Common Mkt. Rep. ¶¶ 2651-61, 2821, 2823-25.

⁸ I. VAN BAEL & J. BELLIS, COMPETITION LAW OF THE EEC (1988).

ment, decision or concerted practice prohibited by the terms of article 85(1) contributes to the improvement of the production of goods or to the promotion of technical or economic progress, while reserving to users an equitable share in the profit resulting therefrom.

The implementation of article 85 is covered by Regulation 17. Regulation 17 provides *inter alia* the procedures for obtaining Commission exemption (negative clearance) with respect to an agreement or undertaking, and for fines for violation of article 85.

Block Exemptions

Pursuant to the terms of the Treaty of Rome and Regulation 17, formal Commission clearance of many contemplated business arrangements is required to avoid risk of significant fines and possible injunctions. This imposes on businesses, prospective licensees and the Commission staff an almost impossible burden.

To meet this burden, Regulation No. 19/65/EEC⁹ was enacted. This regulation empowers the Commission to apply article 85(3) of the Treaty of Rome by special regulation to certain categories of agreements and concerted practices falling within the scope of article 85(1). Pursuant to Regulation 19/65/EEC, a series of "block exemption" regulations have been enacted, against which a proposed business plan or license agreement can be compared to determine whether it is necessary to seek formal negative clearance from the Commission.

Among the block exemptions relating to commerce are exemptions relating to exclusive distributor agreements,¹⁰ exclusive purchase agreements,¹¹ specialization agreements,¹² joint R&D and joint exploitation of R&D results,¹³ patent license agreements¹⁴ and know-how license agreements.¹⁵

⁹ See Regulation No. 19/65/EEC of the Council on Application of Article 85(3) of the Treaty to Certain Categories of Agreements and Concerted Practices, 36 O.J. EUR. COMM. 533 (1965).

¹⁰ Commission Regulation (EEC) No. 1983/83 of 22 June 1983 on the Application of Article 85(3) of the Treaty to Categories of Exclusive Distribution Agreements, 26 O.J. EUR. COMM. (No. L 173) 1 (1983).

¹¹ Commission Regulation (EEC) No. 1984/83 of 22 June 1983 on the Application of Article 85(3) of the Treaty to Categories of Exclusive Purchasing Agreements, 26 O.J. EUR. COMM. (No. L 173) 5 (1983).

¹² Commission Regulation (EEC) No. 417/85 of 19 December 1984 on the Application of Article 85(3) of the Treaty to Categories of Specialization Agreements, 28 O.J. EUR. COMM. (No. L 53) 1 (1985).

¹³ Commission Regulation (EEC) No. 418/85 of 19 December 1984 on the Application of Article 85(3) of the Treaty to Categories of Research and Development Agreements, 28 O.J. EUR. COMM. (No. L 53) 5 (1985).

¹⁴ Commission Regulation (EEC) No. 2349/84 of 23 July 1984 on the Application of Article 85(3) of the Treaty to Certain Categories of Patent Licensing Agreements, 27 O.J. EUR. COMM. (No. L 219) 15 (1984).

¹⁵ Commission Regulation (EEC) No. 556/89 of 30 November 1988 on the Application of Article 85(3) of the Treaty to Certain Categories of Know-How Licensing Agreements, 32 O.J. EUR. COMM. (No. L 61) 1 (1989).

Block Exemption—Patent License Agreements and Know-How License Agreements

The block exemption regulation for patent license agreements and the block exemption regulation for know-how license agreements are of particular interest when licensing an entity in the EEC. If an agreement meets the "requirements" of the block exemption, notice to the Commission and formal Commission "approval" (negative clearance) of the agreement pursuant to 85(3) is not required to avoid the risk of the agreement being declared null and void, and of a fine pursuant to Regulation 17.

These two regulations are similarly structured, but differ in detail since the nature of a patent or industrial property right differs from that of proprietary industrial know-how. However, the regulations overlap and a mixed patent and know-how agreement requires careful analysis to determine which regulation to apply in determining whether formal negative clearance needs to be obtained.

The principal focus of each of these block exemption regulations is on specified license agreement provisions. There is a "white list" of provisions, i.e. provisions which can be included in a license agreement without violating article 85(1). Each of the regulations lists license provisions falling within a "black list," i.e. provisions which will preclude application of the regulation. However, the existence of a "black list" provision in an agreement, while precluding application of the block exemption regulation, does not necessarily preclude eventual Commission approval of an agreement under 85(3) upon application for negative clearance pursuant to Regulation 17.

In addition to the regulations imposed by the EEC, each of the countries has its own patent system, technical standards and local regulations which have to be dealt with in order to pursue a business. Thus, the EEC, as viewed in the United States, is a highly regulated business environment with complex rules and regulations. The EEC Competition Law was conceived with considerable guidance from U.S. antitrust and regulatory officials at a time of relatively vigorous antitrust enforcement in the United States and Commission regulations reflect this guidance.

However, the recent adoption of the various block exemption regulations, which reflect business and practical realities, indicates an easing of the more restrictive regulations imposed on business in earlier times.

The foregoing comments are advanced with the caveat that the EEC regulations on patent license agreements and know-how agreements are complex and many provisions have yet to be interpreted by Commission or International Court of Justice decisions.

Some of the much publicized "1992 plans" for the EEC call for common technical standards, a single patent system, no tariff barriers among member states and eventually a common currency. However, tariff and non-tariff barriers may be erected against outsiders, and this

may make licensing technology more attractive than exporting products or services to these countries.

DEVELOPING COUNTRIES

Developing countries have in many instances established laws and regulations which strictly regulate technology transfer and do little to encourage the import of technology.

An aspect of the philosophy of some developing countries is that technology is the common patrimony of mankind; it should be given away or available at nominal cost. With this philosophy, a multinational company is viewed as having received full benefit from exploiting a technology in its home market before licensing the technology in a developing country. Therefore, any licensing royalty income is pure profit, and if significant, exploitative.

From industry's viewpoint, technology is property developed to provide products and services at a profit. Without profit, there are no funds to stay in business, conduct research or develop and bring to market new products and services. Moreover, most research results are of little or no value, therefore the few instances of successful research must see a profitable return.

For example, the laws and regulations of Brazil are generally viewed by the industry in developed countries as too restrictive, emphasizing control and regulation and often forcing an unacceptable burden on any prospective transfer of technology into Brazil. The regulations and laws are often so burdensome that an enterprise in a developed country will decide that the prospects for a mutually profitable technology transfer are so slight that it is not worth trying to facilitate a technology transfer into Brazil.

Why should an enterprise in a developed country enter into a licensing and business deal when: 1) it cannot realize a return equivalent to that which it would earn on a developed country to developed country licensing arrangement; 2) confidential treatment of proprietary technology is not assured; 3) earnings from investment in the developing country or licensing fees cannot easily be repatriated; and 4) export restrictions cannot be imposed on a licensed enterprise in a country even when the absence of such restrictions would impinge on rights already granted by the licensor to a licensee in another country.

Moreover, regulations relating to software are enforced by severe penalties.¹⁶ For instance, the penalty for importing, displaying and keeping in storage for commercial purposes, software of foreign origin which is not recorded with the Special Secretariat for Informaties ("SCI"), is imprisonment for a term of one to four years and a fine.

There are many instances of regulation overkill in developing coun-

¹⁶ Daniel, *Realities of Licensing in Brazil*, LES NOUVELLES 71 (June 1988).

tries. This is perceived as counter-productive to a country's interest. Technology transfer needs to be facilitated, not merely regulated and controlled by national laws and regulations.

Efforts are under way in many developing countries to mitigate the chilling effect of regulations on licensing while retaining those regulations and controls necessary to meet national objectives. This is encouraging and to be applauded.

MANAGING AND FINANCING DEVELOPMENT OF TECHNOLOGY

Need

A multinational company with subsidiary companies in different countries needs a system for managing and funding the research and development needed to be and remain competitive. In many countries, the business product lines are too small to support the necessary research by an expenditure of a percentage of the sales of a product in the country. Moreover, research must be managed and coordinated to ensure the effective use of manpower and funds and to minimize overlaps and gaps.

Intra-Company Agreements

Meeting these needs can be accomplished with a system of intracompany agreements called General Relations Agreements ("GRA").

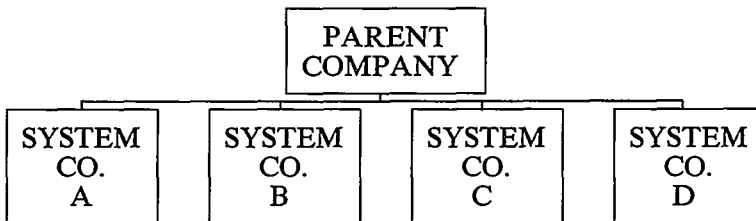


Figure 1

The parent company has a GRA with each company *A*, *B*, *C* and *D*, which are each located in a different country. These GRAs provide:

- 1) Funding of worldwide research and development activities through research and development assessment. This assessment is the same in each line of business for all companies.
- 2) Assessments paid into a General Development Fund which is administered and distributed by the parent company to its subsidiaries to enable them to conduct research and development of mutual interest, business line by business line. Assessment contributions to the General Development Fund are the same for each line of business in all subsidiaries. The rates vary by business from a fraction of a percent of sales in a commodity type business, to in excess of 5% of sales, in a business with high-cost research and development requirements, e.g., telecommunications.

- 3) Controlled royalty-free two-way flow of technical information and intellectual property rights from the parent company to all subsidiaries engaged in the same product lines. For example, the GRA provides that Company *A* shall have the royalty-free right to obtain and use any technical information pertinent to its business which is developed by the parent company or by companies *B*, *C* and *D*. Similarly, the GRA provides that the parent company and the other companies shall have royalty-free rights to obtain and use any pertinent technical information developed by *A*. The only cost to a company receiving technical information is to reimburse the company providing the information for its out-of-pocket transfer costs.

All subsidiaries participate with the parent company in deciding on the location to carry out research and development, what research and development will be undertaken and the level of funding.

Taxes

The research and development assessment is treated by the parent company and each subsidiary as a business expense, and thus, is sheltered from tax. There have been challenges from some country administrations that the assessment should be treated, and taxed, as a royalty payment or as a disguised distribution of profits. However, these challenges have been met, and a GRA system of managed and funded research accepted when the speculative nature of the use of the assessment was explained. That is, the assessment payments are for research and development not yet conducted, the results of which are unknown and in most instances unpredictable. Moreover, this system of funding has been recognized by the Organization for Economic Cooperation and Development in its 1979 report on transfer pricing.¹⁷

Benefits

The benefits for each business, in each subsidiary company, are significant. In return for a contribution of a relatively low percentage of the sales of each business, the results of research and development in each central laboratory, as well as the results of research and development at each subsidiary company, are available to all the companies for their use as needed for their businesses. This is available without further cost, beyond the out-of-pocket cost of transferring the technology. Thus, each company's R&D investment is effectively multiplied many times.

Since each member of the GRA system actively participates in the planning and performance of research and development efforts for its own businesses, the results of these efforts directly relate to each subsidiary's individual interests. Moreover, the conduct by a subsidiary com-

¹⁷ *Transfer Pricing and Multinational Enterprises*, Report of the OECD Committee on Fiscal Affairs 102-124 (1979).

pany of General Development Funded research significantly enhances the company's assimilation of technology obtained from other participants in the GRA system, as well as its own technological development.

Therefore, the pooled research increases the efficiency of the use of research and development funds and personnel. The GRA System has proven to be an effective intra-company vehicle for financing and managing research and development in a multinational multi-product corporation.

EXPLOITING RESULTING TECHNOLOGY

An example of pooled research and development by a multinational company was the conception and development of a next generation distributed control digital telephone switching system. The initial conception and development of the system and the related basic software took place in the United States; commercial embodiments were then developed in U.S., Belgian and German laboratories. The first production of a commercial system was in a Belgian factory. The system was initially marketed in Western Europe.

Objective

The intent was to manufacture and sell this equipment to telephone administrators throughout the world. A potential customer country was the Peoples Republic of China ("PRC") which had identified telecommunications as critical to the industrial development of the PRC. A subsidiary of the multinational company actively sought to participate in the PRC telecommunications endeavor by supplying the PRC with its digital telephone switching equipment.

The Licensing Decision

An essential element of the PRC programs involving critical technologies was for the PRC to become as self-sufficient as possible in these technologies. Accordingly, a condition imposed by the PRC for buying the equipment was that the supplier also had to agree to assist PRC personnel to become competent to manufacture the digital telephone switching equipment. Therefore, in order to gain access to the PRC market, the telephone switching equipment licensor agreed to participate in the formation of a joint venture manufacturing company ("JVC") and to transfer technology to the JVC and license it. Thus, the motivation for licensing an entity in the PRC rather than merely selling equipment was that licensing was the only way to enter the PRC market.

The principal motivations of the PRC for entering into this joint venture and licensing arrangement included rapidly gaining self-sufficiency in a new technology and the preservation of foreign currency. In addition, there were corollary benefits to the self-sufficiency which included strengthening and broadening the scientific and technological

base of the PRC, training engineers and technicians in new technologies, facilitating the assimilation of modern management, manufacturing and quality control techniques, creating new employment and development opportunities and upgrading support industries to provide the JVC with parts and services.

The Deal

The overall agreement reached between the licensor, a western European company, and the Peoples Republic of China called for establishment of a Chinese JVC, initial delivery of a substantial number of lines of completely manufactured digital telephone switching equipment, transfer of technology and grant of licenses necessary for the Chinese JVC to manufacture the digital telephone switching equipment, the supply, during an initial period following start-up of manufacture, of critical piece parts and components for the manufacture of the equipment, and the training of Chinese personnel to manage and operate the JVC.

Laws and Regulations

Among the requirements to be met in the formation of the joint venture and the transfer of sophisticated U.S. and European technology to the JVC were the many approvals required by various government agencies.

PRC Controls and Regulations

In order to encourage and facilitate the formation of joint ventures, the transfer of technology and the protection of industrial property, the PRC has enacted laws and issued regulations which provide the legal and regulatory framework for such activities.¹⁸ A significant amount of time and effort was expended meeting the requirements of these laws and regulations, and persuading the PRC authorities that such requirements had been met.

¹⁸ The most pertinent laws and regulations in effect at the time this contract was negotiated were:

- * The Law of the Peoples Republic of China on Joint Ventures Using Chinese and Foreign Investment — Dated July 1, 1979.
- * Income Tax Law of the Peoples Republic of China Concerning Joint Ventures with Chinese and Foreign Investment — Dated September 10, 1980.
- * The Income Tax Treaty Between the United States of America and the Peoples Republic of China.
- * Regulations for the Implementation of the Law of the Peoples Republic of China on Joint Ventures — Dated September 20, 1983.
- * The Patent Law of the Peoples Republic of China — Dated March 12, 1984 (Effective April 1, 1985).
- * The October 11, 1986 Provisions of the States Council of the Peoples Republic of China for the Encouragement of Foreign Investment.

For an update, see Pierce, *The Legal Regime for Technology Imports in the Peoples Republic of China*, 7 EUR. INTELL. PROP. REP. 206-215 (1988).

Licensors and Related Government Regulations

Since most of the technology to be transferred to the JVC originated in the United States, Belgium and Germany, approval by COCOM and the U.S. government was required. Due to the advanced state of the art of the critical technology embodied in the licensed system, a substantial amount of time and effort was expended in reaching agreement with U.S. Government authorities on conditions that would have to be imposed on the licensee JVC in order to obtain U.S. government approval for the transfer of critical technology, and negotiating acceptance of these conditions by the Chinese government authorities.

Some of the significant features of the License Agreement were the following:

Guarantees

The essence of the License Agreement with the JVC was to transfer to the JVC Licensee all technology, know-how, technical assistance and management training necessary to manufacture digital telephone switching equipment having the same quality, capacity and characteristics as the equipment produced by Licensor. The Chinese authorities insisted that the Licensor give a guarantee along the following lines:

Licensor guarantees that the Contract Equipment [digital telephone switching equipment] manufactured by the Licensee shall have the same quality, capacity and characteristics as the one produced by Licensor, provided the conditions [of the License Agreement] are complied with by the Licensee and provided further that the Licensee meets Licensor's standards of quality, and strictly complies with the process sheets, manufacturing, installation, testing and maintenance standards and methods as used by Licensor.

From the viewpoint of the JVC Licensee, this was a reasonable requirement. From the viewpoint of the Licensor, it involved considerable risk, particularly in view of the lack, at the time the Agreement was signed, of the necessary factory building, machinery, infrastructures and skilled and trained personnel. The major portion of the technology fee payable to the Licensor was, in effect, held hostage to this guarantee. The guarantee was given, the risk undertaken and ultimately the guarantee was met.

Documentation

In order to transfer the technology and know-how used by the Licensor in its factories, a special organized documentation system was established to assure that the Licensee would be provided with a complete package of hardware and software documentation relating to the production, design, assembly, operation, installation, testing and maintenance of the licensed equipment used by the Licensor to produce the equipment in its own factory.

Training

In order to assure that the JVC achieved the required production standards, JVC personnel were enrolled in long-term training programs, most of which were conducted in the Licensor's home factory. These personnel were trained in manufacturing, engineering, installation and maintenance. Selection of educated, educable and motivated Licensee trainees was crucial to assure the effectiveness of the training programs and to realize the objective of the JVC. The success to date of the venture attests to the effectiveness of the selection process and the training program.

Licenses

An exclusive license was granted to make, use and sell the licensed equipment in the PRC. No export rights were granted. However, it was agreed that export rights could be granted as decided by the JVC Board of Directors on a case-by-case basis. This was the best result that could be achieved in view of the general requirement that there be no restriction on exports.

Compensation

The agreement provided for payment of royalties in U.S. dollars computed as a percentage of sales of licensed digital telephone switching equipment during the term of the Agreement. When the agreed "ceiling" dollar amount of royalties has been paid, the license is paid in full.

Anticipated and Realized Results

The JVC assimilated technology at a more rapid pace than initially planned, and this was manifested by the JVC factory reaching its production capacity objective more than six months ahead of schedule. The assembly, test, maintenance and customer design capability has been fully realized.

Thus, from the viewpoint of the PRC, it has assimilated and now has available in the PRC the benefits of highly sophisticated technology developed at great cost by the Licensor together with skills and know-how for manufacturing sophisticated telecommunications equipment. From the viewpoint of the Licensor, it has gained access to the PRC market through the licensing of its technology and is realizing royalty income and a share of the joint venture profits.

This has been an overview of a few aspects of exploiting innovative technology in offshore markets by licensing, with brief visits to the European Common Market, to a developing country and to the People's Republic of China.

In selected instances licensing is an effective vehicle for exploiting innovative technology in offshore markets.

