

product being made at a lower cost in a foreign country, which may, in turn, result in a closing of plants in the United States and resultant unemployment.

Thus, U.S. companies may be constrained from transferring technology because of the feared reaction of their labor unions. How to solve this specific problem is thus an appropriate question for the international body that will emerge from this Working Group to consider.

Still another problem is the existence of natural contradictions and conflicts, such as, the simultaneous demand from the developing countries for older, more labor-intensive technology and for new, highly developed, capital-intensive technology which can provide exports for the host country that will be competitive in the world markets.

Countries with unemployment problems naturally seek labor-intensive technology, but this technology may be out-of-date and incapable of producing exports that can compete in international markets. On the other hand, the host country may not be capable of assimilating the new high-technology, and its desire to compete in international markets may prove to be an illusion for the time being.

These conflicts and contradictions thus provide fruitful subject matter for discussion through a dialogue under the supervision of the proposed new body.

A further problem that has been raised by U.S. transferors of technology is the classical question of "security of transactions." U.S. companies wish to ensure that the reasonable business expectations of both the transferor and the transferee may be brought to pass.

They are upset with the prospect that the rules of the game may be changed in mid-stream, such as, through the enactment of national laws that force them to revise their contracts without their consent. In other words, if a technology transfer contract is contemplated to be in effect for a reasonable number of years, when it is negotiated, they think it is unfair to change the terms of this contract through national laws before the natural term of the contract expires.

Still a further problem that exists in transfer of technology is that owners, or suppliers, of technology may have difficulty in locating appropriate transferees, or receivers, of technology. Similarly, potential transferees, or receivers, of technology may have difficulty in finding appropriate owners, or suppliers, of technology. There is thus a strong need for an information network that would enable potential transferors and transferees of technology to find each other.

The international body proposed in the working papers of this Conference could investigate appropriate processes and procedures to bring the suppliers and receivers of technology together and to assist them in locating each other in a more effective and efficient fashion.

True, effective, and meaningful technology transfer can only derive from a mutually beneficial cooperation between the owners of technology and their transferees. In the long run, what is mutually beneficial works. A successful technology transfer requires much give-and-take by both the supplier and the receiver, and lots of trust, good faith, hard work, and cooperation on both sides — but the rewards are worth the risk.

As an intermediary in the technology transfer pro-

cess, I am very pleased that this Conference is taking place and that it is proposing the creation of an international body to attack the problems that I have encountered as a representative of the private sector.

In the past we have not had a satisfactory locus where these problems can be aired, expanded upon, understood, and resolved. These problems will now have a place to which they can be taken.

We came here not just to help you to understand what problems we have, but also to ask you to help us to overcome these problems.

In proposing this new international Inter-American body, we seek a dialogue with you that is specific, professional, candid and continuous — remembering that there are many different forms of industry, many different forms of technology transfer, and many different problems for us to attack together in a true spirit of cooperation and mutual benefit.

INTERNATIONAL GROWTH BY "EXPANDING COMPANIES"

by
*Robert P. Whipple**

The political importance to our nation of the export of American technology to generate offshore income and to help our international balance of payments is generally known and accepted. The profit importance of such technical export is the motive which drives or leads American companies of all sizes into international markets.

While the ability of large so-called "multinational companies" to profit through international business activities is inherent in the size and affluence of such companies, smaller rapidly expanding companies, although confronted with opportunities, are beset by problems in engaging in the foreign commercialization of their proprietary technology.

The purpose of this discussion is to explore the various avenues and aids available to an Expanding
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Company to cope with such problems as it commercializes its technology outside of the United States.

An Expanding Company, for the purpose of this article, is considered to be a company of small or medium size which has an extremely rapid growth rate in its local U.S. market because of a proprietary technical position. This technical position may be reflected as a product, a process or a machine which is extremely well accepted in the market. The technology involved probably is in the forefront of the advance of the technical art in its particular field.

Our Expanding Company may be in the sales volume range of from 2 to 100 million dollars — or even more. This company could be a division or a subsidiary of a larger decentralized company. In such decentralized companies, individual divisions or subsidiaries are self-contained operating units except for centralized corporate financial and legal controls. Such autonomous divisions and subsidiaries generate their own market growth primarily through their own research, development and technical advances.

Consequently, this discussion is directed to the Expanding Company as either a division of a larger decentralized company or a smaller company in itself. Typical of all Expanding Companies is better-than-average profits usually based on dramatic sales growth in a limited geographic market because of a proprietary technical position. In the Expanding Company executive and administrative personnel usually are spread very thin over the operations of the company. Such personnel are not able, because of lack of experience and lack of time, to plan, organize and implement a foreign growth program.

Limitations in administrative staff and in executive talent often occur because the company has outgrown its management training program. Further, it has not yet generated the cash flow and the investment to make it possible to expand its staff to encompass the larger international growth programs which it would like to try.

How does the Expanding Company make profits abroad on technology? Of course, the technology must be used by someone in a foreign country to make and sell products. Someone must put the technology into practice. That someone may be a foreign agent or rep selling an imported product, a foreign licensee or a joint venture partner. To get that "someone" to sell in the foreign country, he first must be sold the technology by the Expanding Company. The business mode of the technology sale to him may be an agency agreement, a license, or a joint venture. Selling the agency, selling the license, or selling the joint venture partner is selling technology.

One thing must not be overlooked — selling a license may be *selling* technology, but it is not *marketing* technology any more than *selling* a bar of soap is *marketing* a bar of soap.

The elements of *marketing* technology (as the elements of marketing soap) include many other activities and functions which lead to and support the actual sale. Expanding Companies often are not equipped to undertake activities and perform functions to support the international marketing of technology. Also, often such companies do not have the international contacts for a successful technical marketing program.

Let's examine the structure for foreign technical expansion.

ELEMENTS OF INTERNATIONAL TECHNICAL EXPANSION

The basis of International Technology Marketing are simply the functions of (1) Planning, (2) Organizing, (3) Selling and (4) Servicing a program of international scope through one of several business modes.

The *planning* phase is an examination of resources comprising business analysis with primary emphasis on completing a pro forma profit plan. The examination and analysis results in the selection of the business mode. The *organizing* phase is the gathering and formalizing of the many pieces of information necessary to successfully sell the program — whether the sale be of a license, or a joint venture or to management for investment abroad. The servicing step is reflected in the transfer of technology to the licensee, the transfer in the same way in a joint venture or the servicing from the United States of a sister or subsidiary international company established by investment and based on the technology of the U.S. parent.

Technology Marketing can be accomplished by an Expanding Company by four different business modes. The first business mode would be export by the Expanding Company of products for sale through established foreign agents. In the export mode, the products are manufactured in the United States and sold abroad using the technology of the U.S. Expanding Company. The technology, in effect, is commercialized by the sale abroad although production takes place in the United States.

The second business mode is licensing foreign companies under the technology of the Expanding U.S. Company. This is a classical mode which can involve both patented and unpatented technology, know-how, trade secrets and trademarks. Licensing often is supported by engineering, technical assistance, market assistance and continuing research and development.

The third business mode which accomplishes the international growth objective of the Expanding Company is the joint venture. This mode has been particularly popular in Japan because Japan's investment policies, until recently, had limited outsider equity ownership to not over 50% of a company.

In following the joint venture approach, the U.S. Expanding Company will search for a venture partner who will accept technology for equity in a jointly owned company. On the other hand, the Expanding Company may contribute capital for equity and license the joint venture under its technology. Although there are several approaches to joint ventures, the prime factor in the joint venture mode of internationally commercializing technology is the use of the technology directly, or indirectly through license, to gain an equity position in a foreign venture. The fourth Technology Marketing business mode is direct investment by the Expanding Company in foreign operations. By direct investment, the Expanding Company will buy or invest in manufacturing facilities and probably in distribution and marketing. Possibly, the Expanding Company will invest only in manufacturing and make a marketing agree-

ment with a local foreign resident company. Or, on the other hand, the Expanding Company might set up a marketing program in a foreign country and license a foreign company under its technology to manufacture products for it to market. Direct investment carries a heavier financial and management commitment than do the other modes of Technology Commercialization. Consequently, the business risk is greater.

To summarize, an Expanding Company may achieve Technology Commercialization abroad through the business modes of export, licensing, joint venture and direct investment, or combination of these modes.

Regardless of the business mode selected, the objective of the Expanding Company is always the same — to use available resources in a planned and organized manner to maximize profits by the foreign use of its proprietary technology.

Having set its foreign growth objectives, what problems are faced by the Expanding Company in attaining its objectives? What are the problems in and what are the approaches to foreign growth?

Problems faced by an Expanding Company are many but the usual constraints are limited management time available for the foreign growth program, limited experience in international operations, limited business contacts abroad to aid in finding partners and limited financial resources for foreign investment because of total financial commitment to rapidly expanding U.S. growth.

Limited management attention occurs because important management time necessarily is drained in U.S. expanding growth. In particular a start-up company, the original management team who introduced the product or technology in the U.S. market continues to operate the Expanding Company. The company itself is not in a position, because of limited finances or limited time, to build a broader management team able to cover "all the bases" for U.S. growth as well as do the necessary planning for an international program.

Management teams of even mature companies often concentrate so heavily on the rapid growth in the United States that they cannot devote adequate time to thorough planning and implementation of an international technology marketing program. As a result, the company misses profit opportunities.

In addition to management time, management experience often is limited in an Expanding Company. International business requires management with some international experience. International finance, the selection of partners for joint ventures, license negotiation, marketing programs, foreign laws, foreign customs and usages all require knowledge and background not usually found in the management of an Expanding Company. Consequently, the managements of the Expanding Companies must draw on experienced outside support to aid in expediting international technology marketing.

Further, international contacts usually have not been developed by the management of Expanding Companies. Expanding Companies usually have not done business through foreign banks, they have not dealt with foreign lawyers, they have not negotiated a significant number of foreign license agreements or foreign joint venture agreements. This should not be considered cri-

ticism of an Expanding Company's management. It merely is a fact of life. Consequently, the farsighted management of an Expanding Company must take advantage of services rendered by banks, consultants and other services able to help them develop foreign contacts for the commercialization of international technology.

The last constraint on foreign growth by the Expanding Company, of course, is limited financial resources. Expanding Companies usually absorb large and expanding amounts of working capital. They have expanding fixed capital requirements and heavy commitments to R&D and growing market distribution programs, particularly if they are in the vanguard of their technical field. Limited financial resources added to uncertainty as to selection of courses of action cause Expanding Companies to postpone foreign technology marketing. Quite often an Expanding Company's management does not realize that lack of funds is not a detriment to a licensing program, even though such lack may preclude an export program, a joint venture program or direct investment in foreign operations.

With limited management attention — with limited foreign contacts, with almost total commitment of existing financial resources — many Expanding Companies tend to postpone foreign expansion. They slide past the optimum time for making arrangements with foreign partners to commercialize the technology which has made them expand so rapidly in the United States.

The best time to move internationally is when sales momentum is in a dramatic upward slope. When sales are in this growth posture the technology has the impact and the "market freshness" to attract foreign licenses or joint venture partners. Consequently, sound management requires a careful look at the timing of the foreign entry to take advantage of these attributes.

What specifically must be done by an Expanding Company to enter into international technology marketing? The steps are simple — however, they must be undertaken with thought and followed with a great deal of management commitment.

Briefly, the Expanding Company should (i) analyze its resources, (ii) set objectives, (iii) plan its project, (iv) organize for action, (v) assign responsibilities, (vi) move into the foreign arena to sell its program and (vii) follow through with sufficient administration.

The first step taken by an Expanding Company would be to form a project team. This team would be headed by a key management executive and comprise an experienced international licensing executive, a patent attorney, a practical financial man and a marketing man.

The team first would meet and outline its plan of action. It would set its objectives. Next it would evaluate its resources — financial, technical management, marketing, manufacturing, research and development. The last key analysis step would be to set up a pro forma profit plan for each of the various modes of international expansion. From these plans the best course of action would be selected.

Having evaluated its resources, having looked at alternative profit plans, having selected its course of action the project team recommends to management one of the business modes of export, licensing, joint venture

or direct investment. In examining the various countries of the world, the project team might decide that in one geographic block of countries, it would be possible to joint venture. In yet a third group of countries direct investment might be more appropriate. In any event, we may assume that the project team now has recommended a course of action which has been approved by management. The team now has authority to carry out its plan for foreign expansion. Ideally, the project carries through the entire program because it is most familiar with all of the facts and figures.

The project team next will organize the technology package by preparing specifications, equipment lists, manuals and all other kinds of information necessary to introduce the technology systematically to the candidate business partner abroad — whether by license, joint venture or direct investment.

The "organization" step also includes the preparation of draft legal documents such as an option agreement, a license agreement, perhaps a confidential letter agreement which — after execution — would give the proposed candidate licensee or joint venture partner an opportunity to look into the technology package in depth but in confidence prior to signing an option arrangement.

One of the most important parts of the "organization" step is the preparation of the packages of documents explaining the technology. In the usual marketing function, these would be considered aids to promotion and advertising — perhaps the same terms should apply to these tools for marketing technology.

Movies or slides may be prepared in order to demonstrate the various facets of the technology of the use of the technology involved. Brochures or write-ups of the technology are prepared. These may be left after meetings or may be mailed to the candidate licensee or joint venture partner. The manuals, i.e. production manual, purchasing manual, quality control manual, maintenance manual, staffing charts and the like are not only useful in promotion but also are necessary in the transfer of the technology to the licensee, joint venture partner or in setting up the foreign plant in a direct investment company.

Having organized the program for the commercialization of technology abroad, the project teams next step is to identify and to qualify candidate foreign partners for the Expanding Company.

Of course, the type of partner selected will vary according to whether the program calls for exporting products, licensing, forming a joint venture company with a foreign partner, or direct investment in Expanding Company's own foreign manufacturing and marketing.

Qualifying partners is done by selecting companies in each respective country in the line of business to which the technology under consideration pertains. This selection can be done through banks, national export-import federations abroad, through the U.S. Department of Commerce and by use of experienced, international businessmen having well-established friends and associates abroad.

The next step is the "action" step. Here the project team is involved in negotiating and executing agreements. The project team approaches the proposed partner (depending on the plan of action) to negotiate a

license, to set him up as a sales representative, to enter into a joint venture arrangement or to hire him as a manager for foreign operations.

As to negotiations, the first meeting should take place in the foreign country. This gives Expanding Company's management an opportunity to see the proposed licensee on his home ground. His manufacturing operation, the quality of his personnel and the general environment in which he operates can be observed.

After a number of meetings and numerous exchanges or correspondence, hopefully an agreement will be entered into. The agreement may be a license agreement, either exclusive or nonexclusive. The agreement may be to form a joint-venture company, in which event it may become necessary for Expanding Company to acquire funds and to invest in equity. On the other hand, the result of the project team study might have led Expanding Company into the purchase of land, the building of a factory, the installation of manufacturing equipment and the marketing of products, i.e. foreign investment. In any event, the "action" step is completed and Expanding Company is ready to commence business.

Each of the "action" steps — whether it be executing an agency agreement, signing a license or joint venture agreement or investing in operations requires follow-up by Expanding Company. Such follow-up is termed "administration" of the agreements.

In the case of the license agreement, administration would involve the transfer of the technology from Expanding Companies to the licensee through manuals, drawings, introduction to suppliers and the like. Administration of the transfer of technology also may involve technical assistance by Expanding Company's personnel, visitation to Expanding Company's plant by licensee's personnel, financial monitoring of the royalty income and the continual monitoring of improvements both into Expanding Company and from Expanding Company to its licensee.

Steps of "administrative" should be as well prepared in advance as the steps of organization by the project. Failure of the "administrative" steps quite often leads to abandonment of the international technology commercialization program. Licensees become disillusioned with licensors, joint venture partners become uneasy with each other because of failure to perform on either side. Subsidiary foreign operating companies suffer from lack of technical support from the parent company. Clearly, careful and continuing administration is of the utmost importance. Many, many foreign programs fail because of the lack of follow through.

The ingenuity of man will continue the expanding growth of technology. The United States is developing technology by leaps and bounds. However, where it used to be the world leader in technology, now the U.S. is challenged by other countries such as Japan, Germany and France. The good of the nation, as well as, the good of the average U.S. company lies in timely profitable expansion of technology use abroad. Rapidly growing or Expanding Companies must plan carefully and act vigorously to take advantage of its opportunities.