

not been fulfilled or obtained, if such is the case.

Transitory Provisions

FIRST. This law shall become effective 60 days after the date of its publication in the Official Gazette of the Federation.

SECOND. Bearer notes representing the capital of enterprises already established in Mexico, owned by the persons, enterprises or units referred to in Article 2nd, should become nominative under the provisions of Article 25th and be registered within a term not exceeding 180 days from the date on which this law becomes effective. To effect such conversion, it is only necessary that the corporation that issued same make a notation of such a fact in the corresponding certificate or in the sheet attached thereto. Registration of such certificates shall have the effect of the authorization referred to in Article 25th.

THIRD. A term of 180 days from the date on which this law becomes effective is granted to the persons under obligations to do so to register such certificates in the National Registry of Foreign Investment.

FOURTH. While the National Commission of Foreign Investments does not in fact prescribe the criteria and terms referred to in Article 19th of this law, the applications in connection with this regulation shall be resolved by the Ministry of Foreign Relations after hearing the opinion of an Advisory Commission integrated by representatives of this same Ministry, that will preside over same, as well as belonging to the Ministries of Interior, Treasury and Public Credit, Industry and Commerce and Tourist Bureau.

FIFTH. All other legal provisions or regulations in conflict with this law are hereby revoked.

THE ROLE OF CONSULTANTS IN THE TECHNOLOGY TRANSFER PROCESS¹

by
Robert Goldscheider*

(Presented in Paris, November 27, 1972, at a meeting on Transfer of Technology to Developing Countries through Subcontracting and Licensing Agreements, with Special Reference to the Automotive Industry)

The accelerating pace of scientific and industrial discovery has created a variety of extreme conditions that both kindle hopes and intensify imbalances in the world economy. The problems of the developing countries have been a preoccupation for more than two decades of some of the best minds and most creative spirits in virtually every country of the world. Yet no international symposium on the subject fails to deplore the ever widening gap between the haves and the have-nots.

When one considers the so-called developing countries, it is virtually impossible to generalize validly because of the variety of problems and conditions. During the past ten years, a very few nations grouped

within this definition have emerged to a relatively self-sustaining economic condition. Nevertheless, this rubric still applies to such diverse countries as Brazil, Nigeria, Zaire, Afghanistan, Iran, India and Thailand, all of whom have vastly contrasting situations, within their own borders, to say nothing of differences in national resources, cultures and aspirations.

If one is to make any sense out of the development process, it is therefore necessary to focus on clearly defined situations. Certain limited generalizations can be made from experience in this field, but any attempts to draw standard conclusions will be suspect and probably invalid. Projects which have been successful in the developing world have usually been specifically tailored to the given situation. They have reflected particular cultural and historical circumstances which can have an enormous influence on the outcome of the effort. Moreover, they have made special provisions — and frequently found substitutes for — various services and institutions which are automatically available in a highly industrialized environment.

The ordering of priorities and appreciation of the factors relevant to the technology transfer process requires experience and a variety of skills. Several added dimensions exist when one is attempting to bridge a relatively wide cultural and industrial gap. Objectivity, in what can become an emotional situation, is also valuable. A qualified consultant can frequently bring many of these elements to the negotiations, and thereby serve as an interface, advisor and even a catalyst in these transactions.

The term "consultant" is frequently not held in high repute in many parts of the world. So-called experts, with questionable professional qualifications, have sometimes created more problems than they were retained to solve. Indeed, virtually anyone can claim the title consultant because there are no formal regulations governing admission to practice or performance, as such. Nevertheless, the title is also used by persons performing a wide variety of useful functions, some of whom are members in good standing of the legal, engineering, medical and scientific professions, but who consider their traditional titles too narrow to encompass the combination of functions and skills required in certain consulting assignments.

Consultants can obviously be retained by the proprietor of the technology, as well as the proposed recipient. Whichever side of the bargaining table on which he sits, however, the objective of the consultant should be to help structure an arrangement with mutual advantages to the parties, since this is the only atmosphere in which one may reasonably anticipate a lasting, meaningful relationship. The considerations discussed herein, unless otherwise noted, are therefore applicable to either role in which the consultant may be cast.

This is often evident at the very outset of negotiations, when the initial contacts are being made between the prospective parties.

An experienced consultant to the proprietor of the technology can outline realistic objectives. He can also provide introductions to private individuals and

governmental officials on the other side whom the consultant knows are appropriate.

If retained by the recipient, his client's distrust and even fears of being cheated can be assuaged, because of the security provided by an able advisor. Moreover, the proprietor is usually glad to see a consultant on the other side because this reduces the risk of misunderstanding between the parties and can thus improve chances that the bargain ultimately reached will be honored. If a consultant has the confidence of both parties, either because of past association with them individually, or else by the competence with which he conducts himself during the early stages of negotiations, a useful function is served for all concerned.

Indeed, consultants frequently serve an important function even before the parties commit themselves to the types of transactions contemplated, by conducting feasibility studies. This is a relatively inexpensive way to assess the scope of potential opportunities, as well as their pitfalls. By this technique, the interested parties — on either side — can remain anonymous if they choose during this period of investigation, and can thus avoid criticism if the original inspiration proves to be unrealistic.

What is included in the range of skills which a consultant can bring to the technology transfer process? These might be divided into two categories: those which are common to all licenses or other technology transfers, and those which are particularly important when the recipient is relatively unsophisticated, or located in a less developed economy.

The more general types of knowledge or abilities may be summarized as follows:

(A) *An understanding of the relevant market*

If on the side of the proprietor, this includes a knowledge of where there is a commercially viable need for the given product or process. Also, the consultant should be able to advise which version is most appropriate: the most elegant and advanced, or perhaps certain obsolete models, or possibly a process utilizing a more labor intensive approach, or geared to a lower capacity, than the proprietor utilizes in its home market.

The seeking party should be introduced to persons who not only possess the right kind of technology, but who also have a genuine interest to make the sort of deal envisaged. For instance, if the recipient of the technology has a need for certain raw materials, or if exports of the licensed products are needed or desired, it is obviously important that the proprietor be capable of filling that requirement, or does not have other commitments which would be inconsistent with an export policy from the home territory of the recipient.

If advising the recipient, it is advantageous if the consultant has access to several potential licensors, and even knows candidates from different countries. The element of choice thus provided can help promote a better deal for the client because of competition generated among potential licensors, and also because an opportunity is afforded to select the most appropriate technology.

(B) *An ability to reach decision makers*

The level at which a company is initially contacted can be crucial, not only to the speed with which negotiations progress, but as to the outcome itself. If one's ideas are introduced to another company at a relatively junior level (which can include people with lofty staff titles such as Chief Patent Counsel, or a Vice-Presidency without line or financial responsibility), the concept must "swim upstream", and is frequently defeated because the project was initiated by the wrong person. If, however, the imagination of the person having the power of decision is stimulated, the necessary detail work will be performed promptly, since instructions to do so will have come from above.

Of course, this skill on the part of the consultant, which can result from technique and personality as much as from a wide circle of acquaintances, is valuable in reaching other persons who can play a role in the contemplated transaction. Bankers and other sources of financial assistance, as well as government officials whose approval of the transaction may be necessary or desirable, must frequently also be contacted during the course of negotiations.

(C) *Knowledge of "the tools of the trade"*

There are literally dozens of strategies and legal forms that can be employed in the technology transfer process. The adroit selection of the approach can be basic to the ultimate success of the transaction. Thus:

- simple selling, distributorship, assembly or re-packaging operations might be appropriate, particularly at the outset of a relationship;
- leasing of machinery, and keying remuneration to the output of the equipment instead of merely taking a profit on the selling price, may yield a higher return in some situations;
- an option to take a license, or an arrangement to treat an initial payment as pre-paid royalties, to be credited as sales accrue, might soften terms sufficiently to permit a deal to progress;
- various types of joint ventures, management contracts or other prerogatives relating to the name of the enterprise or describing types of transactions requiring prior approval by the proprietor of the technology can be provided; and
- procedures for training personnel of the recipient, or turnkey contracts for the erection of production facilities can be specified.

It is axiomatic that the consultant understand the advantages and limitations of the industrial property rights — patents, proprietary know-how and trademarks — involved, as well as means to protect such rights against infringements by third parties, attacks by others alleging infringement by one's client, or breaches of undertakings to maintain the proprietary information in question as confidential.

The international system for the protection of industrial property — first formalized by the Paris Convention of 1883, provides recognized lines of communication whereby bodies of technology can be effectively transferred. Perhaps the closest analogy to this apparatus is the system of musical notation, whereby a violinist in Australia can easily read and play a Strauss Waltz, or a composition by any of the Beatles

was rapidly played or sung in virtually every country of the world.

Patents are a recognized means to define the extent of an invention and to afford the inventor an opportunity to be rewarded in return for disclosure. In certain situations (e.g. a unique and useful configuration of an article that may be manufactured by normal injection molding techniques) patents are virtually indispensable if the inventor wishes to prevent others from copying the invention. Filing, prosecution and maintenance of patents can be a very expensive exercise, however, and a wise consultant should be able to tailor a patenting program to markets of realistic commercial interest.

More frequently than not, the confidential know-how made available to a recipient has much more intrinsic value than a license to work one or more patents. It should nevertheless be recognized that the existence of patents can lend a certain "official dignity" to a licensing transaction and can be helpful to both parties in discouraging competition and also in obtaining needed governmental approvals to agreements that have been reached between the parties.

One test of a consultant's skill is the manner in which he can influence the rapid and effective transfer of the relevant know-how between the parties. This type of information takes many forms, the relative importance of which differs from case to case. In this connection, some considerations are as follows:

- It is frequently useful to have the proprietor prepare one or more manuals to be provided together with needed engineering drawings. Such manuals should comment on design approaches, identify various job responsibilities and explain, in sufficient detail, each stage or feature of the technology. Such manuals might usefully be prepared in several versions, intended for employees or executives of the recipient working at different levels. This technique can also prevent relatively junior employees from obtaining ready access to the entire body of know-how.
- Procedures should be outlined for rapid and thorough training of key personnel of the recipient. This should include arrangements for such persons to visit the headquarters and installations of the proprietor, as well as for visits for reasonable periods to the recipient to provide on site training. These exchanges should be carefully planned and appropriate teaching materials should be prepared in advance.
- If new manufacturing facilities are involved, the proprietor should have an active role in construction and start-up, with a view to getting production going with a minimum of delay. In some circumstances it is highly desirable for the proprietor to have responsibility to erect a plant on a turnkey basis, for a contract price and with an agreed delivery date. This not only can insure the efficiency of the transfer, but can make the transaction more attractive to the proprietor if part of the savings to the recipient realized from this approach are included as profit to the

proprietor in the turnkey price.

- Machinery for solving promptly special problems that may arise during the course of the relationship should be established. However carefully one may organize operations, the differences in the environments of the parties — or frequently events beyond their control — can affect operations. The speed, skill and flexibility with which these situations are handled can be crucial to success and the maintenance of good will between the parties.
- Regular lines of communication between the parties should be established from the outset of the relationship. This enables the proprietor to exercise effective quality controls. Improvements and additional information relating to the technology can also be exchanged in this way. These contacts also contribute to the growth of general understanding between the parties, an asset frequently more valuable than many items on the balance sheet.

Know-how is not limited to the manufacturing process. There are usually important lessons to be learned in the areas of marketing, taxation, and finance. An enlightened consultant will therefore be careful to see that these areas are not neglected. Some points to be considered here are:

- design of packaging, pricing strategies and identification of the relevant markets;
- methods of selecting and training sales personnel, and furnishing them with appropriate promotional literature and advertising support;
- familiarity with tax laws and regulations affecting both the proprietor and the recipient;
- understanding available credit institutions, monetary and foreign exchange regulations as well as government incentives.

Related to marketing, but also a distinct line of communication between the parties, is the use of trademarks belonging to the proprietor. The principal importance of trademarks lies in the area of consumer products, but here they may eventually become the most valuable factor in the relationship — as, for instance, in the case of bottling contracts of several cola and other non-alcoholic beverages. In the realm of services, the same would be true of a franchisee of a HERTZ or AVIS car rental service.

The use of trademarks (including service marks) involves a responsibility to maintain the quality and integrity of the products or services to consumers. Use of its trademarks can have advantages to a proprietor, since this tends to spread its reputation, provided such use creates the desired commercial image. A recipient can also receive advantages from being associated with a mark having a good international reputation, even if the mark is not yet known in the recipient's territory. This should be balanced against the fact that a recipient, in the role of a trademark licensee, becomes increasingly dependent on the proprietor, whose mark becomes more valuable with use and sales promotion over a period of time, even though it may solely be the licensee performing these activities.

This is also an area in which it is important to be aware of various legal technicalities. These relate to labelling, marking requirements and the recordation of the existence of the trademark licenses in certain countries. Failure to observe the various legal requirements could endanger the continued validity of the marks in question. The informed counsel of a consultant at the outset of a relationship can outline the ramifications of a trademark license, and thereby avoid problems later on.

Apart from the various contributions, discussed above, which a qualified consultant, generally, can make to the technology transfer process, there are other abilities or facilities which are particularly important when the recipient is located in a developing country. These factors are intended to help penetrate barriers between the parties which result from long standing historical or social conditions. Without these extra dimensions of expertise or understanding, it is submitted that a consultant's effectiveness in the described situations is severely handicapped.

Reference is made to the following:

(D) *Understanding sources of finance*

There are numerous international and governmental institutions, some working in collaboration with private banking institutions, that can help finance various aspects of the contemplated transactions. Some of these programs are directed to particular industries, or certain problems such as the purchase of production machinery. Others are intended to supply a portion of the needed working capital on easier terms than are available through normal banking channels. Various types of insurance against expropriation and other political hazards, designed to encourage activities in developing countries, are also available.

Certain intergovernmental organizations, including OECD in Paris which helps co-ordinate the bi-lateral programs of the principal industrial countries, the European Development Fund of the European Communities, and the Regional Development Banks can also provide important help to efforts to bring new technology to various developing countries.

It is understood that many existing financing programs intended for the developing countries are less than fully subscribed, because some potential users are unaware of their availability. Know-how and ingenuity in locating, applying for and obtaining such assistance can thus be a valuable contribution by a consultant.

(E) *Familiarity with the United Nations System*

In most of the developing countries, particularly the smaller nations, the Resident Representative of the United Nations Development Program is in the unique position of knowing both the top government leaders as well as the most significant private businessmen in such country. Representatives of the specialized agencies — WHO in medical situations, FAO with regard to agribusiness, forestry and fisheries, and particularly ILO, by virtue of its tripartite structure with industry, as well as trade union and government representation — are also often useful sources of contacts and background information.

The help that can be afforded this type of transaction by international civil servants sometimes exceeds whatever formal contribution they may be able to make. The fact that these people are employed by world-wide organizations, in which the developing as well as the advanced countries are members, often surrounds such representatives with an aura of objectivity and trust. They therefore serve frequently as go-betweens to help all parties, and thus serve a valuable communication function. This can greatly supplement the consultant's efforts to promote an effective dialogue between the prospective parties.

(F) *Knowledge of contrasting cultures and economic conditions*

Assuming that a consultant, regardless of his role, is not a citizen of the developing country in which the recipient resides, the consultant should nevertheless have a real interest in such country. An indifferent or superior attitude by the consultant, or unfamiliarity with local customs and protocol, can immediately destroy the consultant's credibility, and hence effectiveness.

This is a situation where it is indispensable to do one's "homework". This requirement, it is submitted, goes well beyond a dutiful attempt to absorb certain economic or demographic statistics. For a variety of very understandable reasons, the acquisition of new technology assumes importance to developing countries much greater than that of a mere commercial transaction. Social implications are frequently influential and the government is usually actively involved. This is not an atmosphere in which ignorance is appreciated.

Thus, a consultant to parties on either side of these transactions should make a conscientious effort to understand the history, cultural heritage, social institutions and political realities in the recipient's country. Language skills are also helpful, but not necessarily indispensable. Since the needed degree of sophistication has frequently been sorely lacking in many negotiating exercises in recent years, it is all the more appreciated when it exists. If representing the proprietor, it also behooves the consultant to educate his client in this important area. And the attitudes manifested must be genuine, because they will be carefully scrutinized.

Although more difficult to define than any of the other attributes described herein, this element of broad understanding is perhaps the most valuable asset of all that a consultant can bring to the technology transfer process. The "communications gap" between parties in advanced and developing countries is often even wider than technological disparities. It involves the element of pride as well as much unfortunate history. This creates skepticism, tensions and unnecessary difficulties. The removal of these elements, frequently by "unofficial" chats away from the bargaining table, can create the constructive attitude needed for any agreement.

Conclusion

The many elements and difficulties of the technology transfer process are magnified when the

recipient is located in a developing country. The stakes are heightened further because the needs of the recipient frequently transcend mere commercial considerations. Several disciplines are needed — involving a variety of technical and cultural skills — to forge meaningful relationships. The fact that each project has many virtually unique features that prevent generalization adds to the scope of the problem.

There thus exists an exciting challenge, requiring the application of all available resources. Consultants can play an important role in this process and this is becoming increasingly recognized. The professional opportunity is sufficiently rewarding, in the broadest sense, to attract worthy and creative practitioners.

**About the Speaker: Robert Goldscheider is a member of the Industrial Property Rights Group, international licensing consultants.*

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"GET THAT TECHNOLOGY MOVING"

*Talk by E. G. Fronko**
to the National Association of Manufacturers
March 7, 1973

Technology has been taking a sound drubbing in the past few years. It would seem that everything that is wrong with America today is due to technology. It's technology that has polluted our air — technology that has polluted our waterways. New technologies have supposedly generated energy intensive industries causing an energy crisis, and of course, that new fangled invention the automobile is smothering our large metropolitan areas. I often wonder what the environmentalists would be saying today if the automobile had never been invented and we were faced with the mounting problems generated by 90 million horses being on our streets.

But maybe everything isn't quite that bad. In spite of Government cutbacks in R & D funding, in spite of the apparent lack of enthusiastic interest in science and technology by demoting the position in the administration, there are some encouraging signs. More and more people are recognizing that technology *will* be required to solve our energy crisis — albeit this is a short term crisis. The 1972 water pollution control act recognizes the need for technology when "it calls for the total elimination of effluent by mandating the best available technology". A recent article in BUSINESS WEEK suggests that part of the technological crisis is due not to the *lack* of technology but to our *failure* to use technology *we already had*. BUSINESS WEEK pointed out that one-third of all Americans (including the residents of Manhattan) have no primary sewage treatment — even though the technology has been available for decades. Similarly some utilities have not installed stack controls even though precipitators were invented nearly fifty years ago.

There were two announcements recently that merit the term breakthrough. Alcoa announced building a

new aluminum smelting process that would use 30% less energy and eliminate fluoride emissions. Anaconda unveiled a chemical process for Leaching copper from ore without creating any sulphur oxides — the bane of traditional copper smelting. Although I don't know when the technology was "discovered" that permitted these advancements by Alcoa and Anaconda, I would hazard a guess that it was at least five to ten years ago.

How many other technologies are lurking in the wings? How many more technologies have already been discovered that have not been put to useful effort and are not being pursued? After a year of trying to find ways to stimulate R & D and find ways to apply the results effectively, one Nat. Bur. of Stds. official says "at first, we felt the solutions had to do with developing new technologies, but now we know the problems have more to do with market and distribution mechanisms than with hardware."

I am not suggesting that we stop our support of basic R & D. Stanford University Vice President, William F. Miller, said recently "lack of strong support of basic science will lead to an intellectual recession which in turn will retard technology and economic growth."

We must continue a strong effort to support basic science, and develop our future technologies.

However, even as we explore secondary and tertiary oil recovery means to help solve the energy crisis, perhaps it is time to re-evaluate the vast warehouse of technology generated during the past 20 years of extensive R & D effort. Have new discoveries been made which now make earlier discoveries valuable? Are there useful technologies already developed which can help solve the country's social & economic objectives?

Of equal importance to industry, however, is whether these untapped resources can generate *additional profit* dollars for our companies in addition to the contribution that can be made to the curing of social ills.

The General Electric Company has an intensive program — started in 1965 — with the objective of gaining greater utilization from GE generated technology. Greater utilization *within* the General Electric Company, but equally important — great application of selected technologies — used and under utilized technologies *outside* the Company.

Within the General Electric Company we have some 36,000 professional engineers and scientists working on a broad range of technical disciplines including chemistry, metallurgy, electronics, etc. This technical creative power generates over 1,000 new patents each year. The patent represents only the visible creativity — supporting it is the know-how and technical expertise which gives patents a greater opportunity for profitable utilization.

My task, as Manager of the Technology Marketing Operation, during the last six years has been to find ways to more profitably utilize these resources.

Our first priority, of course, is to determine if the General Electric Company can turn these assets into viable General Electric businesses. However, my main focus is to find the technologies which the Company