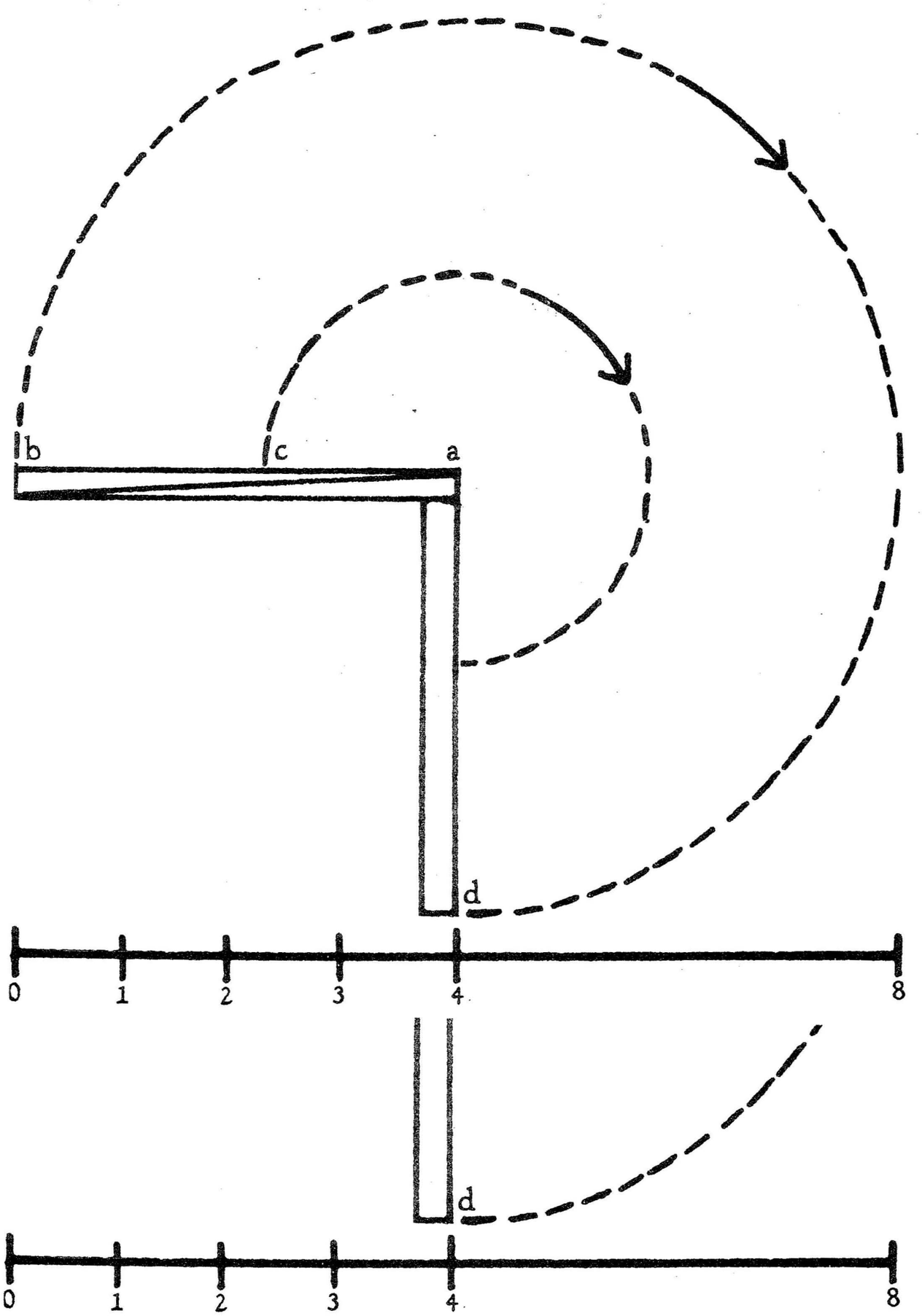
Impact Of Patents And Licences On The Transfer Of Technology

By Albert Brown
Federal Union, Inc.



Federal Union, Inc.
1875 Connecticut Ave., N.W.
Washington, D.C. 20009

FEDERAL UNION is an idea, and it is a goal.

The idea is that the citizen has authority over the national government which he and his ancestors created to serve his governmental needs. This idea has been expressed in, for example, the United States and Switzerland, where a whole nation was created from diverse, independent and sovereign states. Further, the citizen can delegate his sovereign authority in such manner as he feels best serves his interests. Thus, the people of one democracy can lift the barriers separating them from others, forming a union with the people of others, while retaining their local identity.

The goal is to advance the human cause through a union of free peoples in a transnational federation. This union will bring new hope and strength to people everywhere as the resulting benefits reach across all boundaries of the world. Such a goal is not wishful thinking: a resolution calling for a convention of democracies to discuss this, among other purposes, was passed by the U.S. Senate in 1975 and 1976, both times being narrowly defeated in the House. A related Marshall Plan resolution is presently before the U.S. Congress.

The organization which channels the idea toward the goal, Federal Union, Inc., was formed in 1939 by readers of Clarence K. Streit's prophetic, trail-blazing book Union Now in which the entire concept is presented. A non-profit, educational membership association, its domestic, youth and international programs are supported by contributions from private individuals and foundations.

Governed by an elected Board of Directors of ages ranging from 22 to 85, Federal Union benefits from the drive and idealism of youth as well as from the experience and wisdom of older members. The 40 active Directors come from 22 States of the Union and include mathematicians and businessmen, legislators and students, financiers, lawyers and educators. Honorary Directors include Ambassadors, Generals, Senators and college presidents. The Youth Program is advised by an elected Youth Advisory Council of 14 members in their twenties from 12 regions of the United States.

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IMPACT OF PATENTS AND LICENSES ON THE TRANSFER OF TECHNOLOGY

BY ALBERT BROWN
FEDERAL UNION, INC.

FOR PRESENTATION AT AN INTERNATIONAL NATO CONFERENCE

ON

TECHNOLOGY TRANSFER IN INDUSTRIALIZED COUNTRIES

7-11 November 1977
Hotel Palacio
Estoril, Portugal

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ABSTRACT

It is generally agreed that the transfer of technology between countries has contributed to their economic growth and development -- to improvement in the public welfare. To bring about such technology transfer it is necessary that inventors and possessors of technology (usually these are not governments) be motivated to share or disclose their innovations. The public disclosure of new knowledge is encouraged through the protection afforded by patent laws and licensing practices, while the production of the resulting improved and less costly goods and services for the marketplace is encouraged by antitrust laws and trade regulations. This protection and regulation, which is aimed at promoting the general public welfare, is a function of government, both internally and, through international conventions, between sovereign nations. Thus, although most technology transfer is within the private sector, it relies on and is regulated by government.

Most current interest in the transfer of technology is focused on less developed countries. Technology transfer to countries without adequate resources of technical manpower, laboratories, supporting industrial supply facilities and a generally developed national infrastructure must surmount a variety of difficult barriers. The problems associated with these barriers cannot be resolved by the stroke of a pen. In contrast, transfer of technology among industrialized countries can take place rapidly and with ease if the man-made barriers of law, procedure and practice can be reduced to a common and equitable base. This paper treats some aspects of the paper barriers to technology transfer among industrialized countries.

The barriers to technology transfer which are of concern here may be considered to arise from patent law and its application, from antitrust law and licensing practice, and from trade regulation. In particular, it is the variations in these from nation to nation which confront the possessor of technology with difficulty, cost and risk. Although governments generally want to use their powers both internally and in concords with other nations to facilitate the flow of technology, they frequently (and probably inadvertently) erect barriers which inhibit many of the very people they were intended to encourage. This study views these barriers -- paper barriers among industrialized countries -- from the standpoint of the possessor of technology. To the extent that cost and risk dissuade possessors from transferring their technology, the flow between industrialized nations is reduced.

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The paper discusses the nature of technology and its transfer, and the nature of some of the paper barriers. A brief review of the history of international activities related to technology transfer showing the intent expressed by current international actions argues for both the importance of technology transfer and the need to encourage its flow. Finally it is suggested that even if the variations in legislation, procedure and practice between industrialized nations were smoothed out, the very existence of sovereign nations would still present a barrier to the possessor of technology. So long as each sovereign nation must be dealt with individually, the process, the costs, the negotiations and the risks will have to be repeated from country to country.

ACKNOWLEDGEMENT

The author wishes to acknowledge the support of Federal Union, Inc. in all aspects of preparation of this paper. Since many of the points stressed in the paper are parallel to the goals sought by Federal Union, Inc., the author is appreciative of many productive discussions and the assistance of the Federal Union staff, particularly Edward Barbier, student assistant from Yale University, whose research was invaluable. Most importantly, the author freely made use of many concepts expressed in Freedom Against Itself by C. K. Streit, founder of Federal Union, Inc.

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CONTENTS

1. INTRODUCTION

Overview

Although the transfer of technology has played a significant role in human activity throughout history, it is only in the current decade that there has been a burgeoning worldwide interest. Three quite different directions of technology transfer have simultaneously claimed attention -- from the western democracies to communist countries (East-West); from industrialized countries to less developed countries (North-South); and among industrialized democracies. The East-West and the North-South technology transfer issues have generated far more noticeable discussion and interest, but the activity among industrialized democracies, which has accounted for over 90% of the world's technology transfer in the past, has been increasing very rapidly in this decade.

This paper is concerned with the transfer of technology among industrialized countries. Its premise is that although technology transfer does indeed occur and is growing, it would be considerably greater if not held back by factors generally inherent in regulation by individual sovereign nations.

Although the industrial democracies have basically common agreement on the need for, and the use of, patent laws, antitrust laws, and trade regulations, the simple fact that each sovereign nation must promulgate its own set of laws, regulations and procedures has raised barriers -- paper barriers --

inherent in regulation by individual sovereign nations.

Although the industrial democracies have basically common agreement on the need for, and the use of, patent laws, antitrust laws, and trade regulations, the simple fact that each sovereign nation must promulgate its own set of laws, regulations and procedures has raised barriers -- paper barriers --

to technology transfer. The proof that these barriers exist is seen in the increased activity through international conventions dealing with industrial property. These conventions themselves can be viewed as seeking to smooth the path for technology transfer by lowering barriers which have been erected as an inadvertent consequence of the fact that each country produces its own set of legislation and procedures, each having variations on a common theme.

What is Technology?

Technology itself may be broadly defined as knowledge of how to make use of factors of production to produce goods and services for which there is an economic demand. The creation of technology, its broad disclosure and its working, will benefit all of its recipients. While technology can produce benefits, it is equally true that there are costs associated with the creation, disclosure and working of technology.

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A recent U.S. Chamber of Commerce task force investigating technology transfer* could not find a satisfactory definition but did describe "...the combination of skills and rights em-braced within the concept of technology. Technology involves patents, designs and technical data; it also includes the abi-

and to maintain efficient operations and uniform quality." And still further, "Technology is property, in that it costs money to create, produces revenue for its owners, and in some forms can be bought and sold." And even further, "Whatever form it takes in particular instances, technology transfer is learning; it requires voluntary participation by both transferor and transferee, it requires time, and it requires a receptive environment."

The technology itself can range from simple mechanical devices or complex electronics, through trade secrets and process know-how, to techniques for production management and organization. Technology is clearly more than simple drawings of inventions or formulae.

Why is Technology Transferred?

There are, in essence, two reasons for the transfer of technology:

1. The inventor or possessor of technology wishes to recover the costs of his creative work and to make a profit by reaching a broader market.
2. Governments recognize that new and improved technology can bring improved or less costly goods and services to the marketplace, and thus benefit the general public.

The two reasons cited above, while, of course, basic to the nature of technology, are often carried to further ramifications. For industrialized countries, technology transfer can be viewed as a significant factor in a nation's balance of

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payments. For less developed countries (LDC's), technology transfer is viewed as a way to achieve economic goals and to catch up with developed nations. Many economists and others concerned with international affairs see it as a means for achieving economic stability and growth. Some nations encourage a two-way flow of technology to increase their stature in world affairs. On the other hand, some western democracies view a flow of technology to communist countries as providing a potential enemy with economic and even military weapons.

Whatever the reasons for transfer, there are always the same two interested parties -- the inventors or possessors of technology, and the governments which can regulate and assist its inflow and outflow.

The above reasons for technology transfer deal with purpose. There are other reasons which deal with mechanism, and it is under this heading that the two principal actors are brought together.

The inventor, one principal actor, is encouraged to invest in research and development (R & D) and to bring its fruit to market through a patent -- a mechanism used by the inventor for an exclusive right for a limited time -- which is granted by

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the government. He benefits from the prospect of gaining a

The government, the other principal actor, uses the mechanism of a patent to encourage investment in R & D and in production of improved goods and services in the public interest. The patent facilitates disclosure (informing the public of new technological developments). Second, the government seeks to prevent abuse of the patents and license agreements through the mechanisms of antitrust law and trade regulations, so that inventions are worked and find their way to the marketplace, again in the public interest.

How is Technology Transferred?

Whether the technology is protected by a patent or by keeping the know-how secret, the principal mechanism for transfer is a license -- the consent by the licensor to a licensee to perform certain acts which are covered by an exclusive right or consent to the use of know-how. A patent attorney, Marcus B. Finnegan, made the following pertinent comment on these mechanisms*: "The patent system is meant to encourage such transfer of knowledge. The diffusion of knowledge and the transfer of technology are encouraged when private incentives can be channeled into socially useful endeavors, but when private perceptions and incentives change, efforts will be channeled elsewhere. Instead of seeking patents, inventors may resort to more trade secrets, which can be protected through state contract and tort law. Where trade secrets are relied

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upon, there is less technology transfer, because prospective licensees have little knowledge of the existence or extent of the technology involved. Nor are those who would build upon state-of-the-art concepts apprised of what the state-of-the-art is, since there is no general disclosure to the public."

It should be clear, however, that license agreements are transfer mechanisms reached through negotiation. Generally de facto transfer of technology requires willing and knowledgeable people on both sides.

Who Transfers Technology?

It can be instructive at times to spend a moment on the obvious. By definition, new technology must be created -- must be a product or process previously unknown. There are generally costs associated with the gestation period -- the costs of years of education, of operating research facilities, and of many fruitless attempts before the creation of a new and viable technological development. At the time of its creation the new technology is known only to those few people who were involved in its creation. Now consider the obvious.

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Technology transfer cannot even begin without the agreement

This paper views the technology transfer process primarily from the standpoint of the possessor of the technology and considers the factors which influence his decision to share it.

How Does it Look to the Possessor of Technology?

The possessor of technology views the problem of having his invention worked in his own country with considerable anxiety even though he is at home with the language and customs and can get ready access to regulations and procedures. His anxiety concerns decisions he must make, each having a different cost and risk. A patent couples protection with disclosure, but he still must have the resources to combat infringement. On the other hand, secrecy can severely limit his market. Joint venture and licensing arrangements are costly and time-consuming -- and have their own risks -- even at home. However, all this is nothing compared with the anxiety generated by a decision that his technology should be transferred to ten foreign industrialized countries. The only relief from this anxiety may be the realization that his resources are too small for transnational transfer.

The Comptroller General of the Patents Office in London* found a literary analogy to describe the situation faced by a possessor of technology: "Now like W. S. Gilbert's unfortunate billiard's player who, you will remember, was condemned to play on a cloth untrue, with a twisted cue and elliptical billiard
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balls; and, one might add, with someone shaking the table and changing the rules in the middle of the game. Almost nothing will stay still, or can be taken for granted." He went on to point out the changing or uncertain status of both domestic and international regulations and agreements concerning intellectual property and related trade regulations.

A recent article in les Nouvelles* suggests what the reaction of possessors of technology might be when they look at the situation they face: "If there are no certainties in the law of antitrust as applied to licensing of intellectual property, 'not any completely safe harbors,' would it surprise anybody that licensing diminishes -- to the detriment of competition? Or would it surprise that investment in intellectual property thereafter diminishes; because when it is not licensed, the returns on those investments also diminish? Would it surprise that progress in the useful arts stagnated to great public detriment?"

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sessors of technology. They must at least reflect barriers he

Premise of this Paper

There is a growing awareness of and importance to effective transfer of technology. Most of the current interest is focused on less developed countries (LDC's). While there is little doubt that the transfer of technology to LDC's can improve their abilities to help themselves, there are very real limitations to be surmounted before technology transfer can be effective. Technology transfer to countries without adequate resources of technically trained manpower, laboratories, supporting industrial supply facilities, and a generally developed national infrastructure must surmount a variety of difficult barriers. The problems associated with these barriers cannot be resolved by a stroke of the pen. Only careful planning and considerable effort over an extensive time period can provide the internal climate needed to nurture the technology which has been transferred.

In contrast, industrialized countries have the suitable climate already established. Technology transfer can take place rapidly and with ease if only the man-made barriers of law, procedure and practice can be reduced to a common and equitable base. The technology transfer barriers among industrialized nations are thus matters of administration, procedure and cost -- barriers not purposely erected but a consequence of national sovereignty; barriers of paper, since only paperwork and agreement are required to surmount them; barriers which industrialized nations are now seeking to reduce because

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they impede technology transfer.

Technology is indeed being transferred today -- and in greater quantity than ever before. The United States receipts for the transfer of technology, including royalties and related management and services fees, amounted to over $4 billion last year, an increase from something over $2 billion in 1970. And if a possessor of technology selects a particular foreign country to which he wishes to make a transfer, there are known procedures which can be completed. Nevertheless, this paper speaks for all those instances in which possessors do not attempt to transfer their technology because they cannot afford the costs in money and time, because of the difficulties in understanding and following regulations and procedures, and because there remains uncertainty in even the most careful attention to regulation and precedent.

The premise stated here is that there are a large number of inventors or possessors of technology who would like to see the fruits of their efforts cross national boundaries, but who refrain for fear that the costs -- in money, time, effort and risk -- will exceed the potential gain. In spite of the general agreement among nations and in spite of the interna-

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The premise stated here is that there are a large number of inventors or possessors of technology who would like to see the fruits of their efforts cross national boundaries, but who refrain for fear that the costs -- in money, time, effort and risk -- will exceed the potential gain. In spite of the general agreement among nations and in spite of the interna-

tional intellectual property conventions to which industrial nations are signatories, each country presents the possessor

and administrative burdens. Finally, if difficulties arise, each country has its own particular judicial system -- so that a decision in one country neither resolves nor sets precedent for a similar difficulty in another country.

In summary, the premise of this paper is that the flow of technology among industrialized nations is significantly reduced -- to their detriment -- because of the inhibiting effects of "paper barriers" on possessors of technology. These paper barriers which are erected to satisfy national sovereignty thus have the effect of thwarting potential improvements in public welfare.

2. PAPER BARRIERS

Defining Paper Barriers

The term "paper barriers" is used to indicate those barriers to the transfer of technology arising from regulatory, administrative and procedural factors which, when repeated with variations from country to country, may cause a possessor of technology to refrain from transfer. The impedances posed by paper barriers involve time, cost, difficulties of accomplishing procedural tasks, negotiation of licenses subject to government approval and, finally, uncertainty of the eventual outcome of patent applications or licensing agreements. Paper barriers are so termed because they could be reduced (through paperwork) only by government-sponsored hearings, agreements and action. The term is applied to the nature of the transfer impedance among industrialized countries to contrast with the more formidable difficulties of transfer to LDC's. As mentioned earlier in this paper, no amount of reduction in administrative, procedural or paperwork factors can generate an easy or rapid

are so termed because they could be reduced (through paperwork) only by government-sponsored hearings, agreements and action. The term is applied to the nature of the transfer impedance among industrialized countries to contrast with the more formidable difficulties of transfer to LDC's. As mentioned earlier in this paper, no amount of reduction in administrative, procedural or paperwork factors can generate an easy or rapid

flow of technology to countries lacking suitably trained personnel and other appropriate infrastructure.

The following subsections characterize some of the obstacles to technology transfer between countries.

Differences in Patent Laws and Procedures

Usually the task of getting ready for technology transfer begins with a possessor of technology seeking the protection of a patent. As stated earlier, industrialized countries have met in international conventions and reached broad general agreement on policy and practice with regard to patents. An objective is to ensure that foreigners can apply for, receive, enforce patent rights, and be treated under the patent laws without discrimination as though they were citizens. Nevertheless, in spite of agreement as signatories to the conventions, each country has enacted its own interpretation into law and procedure. The variations, even among industrialized countries, are enough to make each one an individual problem worthy of hiring experts for detailed guidance.

The Foreign Business Practices Division of the U.S. Department of Commerce's Bureau of International Economic Policy and Research has published a booklet* for exporters, investors and licensors containing general guidance and information for possessors of technology among others who desire to invest abroad. One article in the booklet, entitled

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"World Patent Laws Reviewed"*, points out variations among nations. Considering industrialized nations only, the following differences in patent laws and procedures are cited:

> The period of patent validity varies from 15 to 20 years and may or may not have renewable rights. In some cases patents are renewable for a further fixed period if inadequately remunerated. The decision is, of course, made by the country involved.
>
> Another variable aspect is provisional protection and the period of its availability. In most cases, prior publication, public use or disclosure in various forms are considered prejudicial, but again, the specific conditions vary from country to country.
>
> A major obstacle in obtaining a patent is the novelty examination. Some industrialized countries have it -- some do not. The examination will vary by country (and even by examiners) in type, in thoroughness and in the time it takes to complete. Further, full examinations may be deferred for different periods up to seven years, after which time, if no examination

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Many industrialized countries prescribe an opposition period which varies in length from country to country; however, some countries have none.

The same is true for compulsory licensing (which is described further below).

The possibility of, and conditions for patent grant revocation vary from country to country.

Finally, not all items have the same patent eligibility in every country -- a notable example being pharmaceuticals.

All of the above are mentioned in brief, but somewhat greater detail, in the U.S. Department of Commerce guidance document. That document further notes that, "Those interested in protecting their industrial property rights abroad should secure the services of legal counsel for advice and assistance on the specific procedures to be followed in the countries in which they desire to do business."

It may be instructive to provide a few more comments on compulsory licensing (almost every nation allows it) and patent revocation. According to the 1972 patents and licensing report of the OECD Committee of Experts on Restrictive Business Practices, most patent legislation in Member OECD Countries can invoke compulsory licensing and revocation of patents to prevent violations of the exclusive right conferred by a patent. The objective of these provisions is "to ensure that foreign inventors holding national patents do not fail to work them on national territory, thereby impeding the development

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of national industry, or attempt to prevent importation into the national territory of articles similar to the patented article but manufactured abroad by other producers".[1] The basis for these laws in most industrialized nations stems from Article 5A (3) and (4) of the 1883 Convention of the Paris Union for the protection of industrial property, along with subsequent conferences for revision of the Convention. Article 5A (3) and (4) suggests that compulsory licenses should be issued for "failure to work or insufficient working" of a patent after a period of four years from date of application or three years from date of grant.[2] Revocation can be prescribed in cases where the grant of compulsory licenses cannot prevent restrictive business practices. As a rule, revocations should not be enforced until two years after the granting of the first compulsory license.

In comparing the legislation of various Member Countries, the OECD notes that industrialized nations harbor different views on compulsory licensing and the revocation of patents. Each country has interpreted the Paris Convention to suit its particular views:

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> Those nations with legal systems based on English

Canada, primarily invoke compulsory licensing and revocations to prevent abuse of the patent grant.

Other countries, however, grant compulsory licenses not only for patent abuses and failure to work or exploit the invention, but also to assist in achieving other current objectives of the country. For example, France grants compulsory licenses in the interests of economic development, and in the past, the Federal Republic of Germany has required compulsory licensing to improve the trade balance and to increase the supply of urgently needed raw materials.

The Scandinavian countries, on the other hand, have abolished revocation of patents and permit compulsory licensing only when normal commercial procedure cannot effect a remedy or when the invention is extremely vital to public interest (which, again, is determined by each national government).

A still different approach is used by the United States, which has no statutory provisions for compulsory licensing or revocation of patents as outlined in Article 5A (3) and (4); instead, patents are subject to U.S. antitrust laws and can be licensed or revoked by the courts.

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industrialized countries in spite of their general agreement on the purpose and nature of patent systems. (The spectrum of variation within LDC's is much greater and, of course, policy positions will vary from those commonly accepted by industrialized nations.) These variations among industrialized countries make transfer difficult for the possesser of technology. Yet, much of the difficulty and expense would remain even without variations -- the difficulty and expense of repeating the identical process in each industrialized country.

Differences in Antitrust Laws and Trade Regulations

Although the United States was an early user of antitrust law (the Sherman Act of 1890, the Clayton Act of 1914 and the Federal Trade Commission Act of 1914) and remains vigorous in antitrust enforcement, there is still uncertainty about its specific application. This situation was discussed through a quote in an earlier section of this paper. Industrialized countries in Europe have tended to use the Sherman Act as a model but there are variations in legislation as well as enforcement procedures.

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Industrialized countries in Europe have very recently

coordinated with the first and will create a unitary patent for Common Market member countries. These activities serve to explain why patent procedures, along with antitrust laws, are in a state of flux in Europe. The past few years have seen considerable publication and discussion. For example, a new draft on Block Exemption Regulations for Patent License Agreements was sent to EEC member governments in November 1976. It has drawn considerable fire, and will have a hard road before a final draft can become law.

The use of a single European Court of Justice can be a major step in simplifying life for the possessor of technology, but at the moment he must still deal with each nation's judicial system. Further, the European Court of Justice is too new to have established much precedent. One expert[1/] writing on the protection of knowledge in Europe felt that the problems were unresolved and that the draft regulations by the EEC Commission were a failure. Another writer in the same journal[2/] expressed the view: "Balance is tilting toward controls rather than protecting real property or proprietary value." The possessor of technology thus sees confusion as to what is or is not permissible in know-how agreements that impose restrictions on licensors and licensees.

1/ Protection of Know-How by Amédée Turner in les Nouvelles, Vol XII No. 3, Sept. 1977.

2/ Role of Intellectual Property Rights by John Methven, les Nouvelles, Vol XII no. 3, Sept. 1977.

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An Increasing Government Role in Technology Transfer

As has been described earlier in this paper, there has always been a government role in granting patents, in anti-trust law, in trade regulations, in restrictive business practices and in working out international conventions (such as the Paris Union) to make transnational activities more possible. Until quite recently, however, there was little centralized government guidance or active stimulation or control of the flow of technology. Today, not only do a great many LDC's have formally designated offices which exert a major influence on technology flow, but many industrialized countries have established offices which variously monitor, stimulate, and regulate technology transfer.

The increased role of governments in technology transfer, whether ultimately a benefit to the general public or a cost which does not promote public welfare, is not at issue here. The increasing government role can add to the complexity of the transfer problem for the possessor of technology. Transactions which were formerly a negotiation between private citizens of two countries subject to government regulations

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may now become a three-party affair -- still subject to government regulations generally enforced by other elements

regulation offices and possibly ten technology transfer offices -- and possibly ten judicial systems, and possibly ...

Cost of Patents and Licenses

Much of the prior discussion has pointed out procedures, decisions, actions and risks which a possessor of technology must surmount in each transnational transfer. It should be clear that there is a cost associated with all of the elements of the transfer. Even risk can be understood and associated with a cost. In almost every country there is a significant additional cost which has not been mentioned. These countries assess an annual fee to maintain the patent grant -- and this fee increases sharply over the valid life of the patent.

Generally a possessor of technology not only has limited resources but he also has opportunities for using them in ways other than for a particular technology transfer. Thus the transfer of technology will usually require a resource allocation decision. Which investment opportunity will provide a better return? Of course, an alternative cannot be selected if it requires resources beyond those available. This paper suggests that the high cost of country-by-country technology transfer causes many possessors of technology to choose alternatives other than transfer.

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3. HISTORY LESSONS

Patents in the Past

Patents, inventions and technology seem so much a part of our modern world that it may be a surprise to realize that they have been a thoughtful concern of mankind for hundreds of years. People have recognized that patent grants can encourage a greater flow to market of new and more efficiently produced products than would otherwise be forthcoming. The British Statute of Monopolies in 1623 was directed at industrial monopolies "but recognized and accepted the advantage of leaving scope for monopoly, limited in time, to encourage the man with resources to build up an industry not previously known in this country."[1/] This concept expressed in 1623 states the basic view of countries today.

The United States Federal Constitution in 1787 stated the purpose of the patent system:[2/] "To promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writing and discoveries." It is particularly interesting to note that this patent clause was one of the few approved without opposition. The acceptance of a Federal

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advantages that only brief discussion of the issue was given in the Federalist essays. In Essay No. 43, James Madison wrote, "The utility of this power will scarcely be questioned. The copyright of authors has been solemnly adjudged, in Great Britain, to be a right of common law. The right to useful inventions seems with equal reason to belong to the inventors. The public good fully coincides in both cases with the claims of individuals. The States cannot separately make effectual provision for either of the cases..." Thirty years ago a patent attorney, John F. Schmidt, posed the following question for inventors to contemplate: "In how many of the 48 States would you take out patents, if the Federal Convention of 1787 had not established a Federal government with sole power over patents?"*

Another milestone in the development of patent law and licensing practice was the 1883 Convention of the Paris Union. The original 11 member states have grown to 85. Revisions to the Convention have been made in Agreements at Brussels in 1900, at Washington in 1911, at The Hague in 1925, at London in 1934, at Lisbon in 1958 and at Stockholm in 1967. In effect, the Secretariat for the Paris Union (an other Unions) is WIPO (World Intellectual Property Organization) which became a specialized agency of the United Nations in 1974. The agreements reached by members of the Convention have been

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the basis for much of the world's patent legislation and procedures. However, the guidelines agreed to in the Convention permitted certain varying interpretations from country to country. It is these variations which constitute a portion of the paper barriers to technology transfer.

Of course, technology is indeed transferred among industrialized nations. It has been for hundreds of years and will continue to be. There are two issues to be considered now:

1. Would more technology be transferred if the paper barriers were removed, and, as a consequence, would more benefit redound to the public?
2. Is increased technology transfer more important to maintenance of peace and world economic development now than 50 or 100 years ago?

The actions of industrialized countries in the past ten years would imply an emphatic "yes" in answer to both questions.

Patents and Licenses Today

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Patents and Licenses Today

There are two major efforts (and many somewhat lesser efforts) currently underway by the industrialized nations of the world. One is the Patent Cooperation Treaty (PCT)

up a European System for the Grant of Patents (Munich Convention of 1973) and the Convention for the European Patent for the Common Market (Community Patent Convention at Luxembourg in 1975). The European system for the Grant of Patents is called the "first Convention" and provides for a European Patent Organization (EPO). The Convention for the European Patent for the Common Market is called the "second Convention" and creates a unitary "Community Patent."

The PCT and the first and second Conventions can be considered as aiming in generally the same direction but covering different amounts of ground.

The PCT provides for filing an "international application" if a possessor of technology wishes protection in several countries. The effect is the same as if applications were filed separately in each of the countries in which protection is desired. The international application is subjected to search, after which all relevant reports are sent to the various countries in which protection is sought for their final decision on granting a patent. There are advantages for the national patent offices in having an international search report, and advantages to the applicant who, by making one application followed by an international search report, can have a basis for judging whether to proceed with his application in the various countries. The PCT is now near to entering into force and is expected ultimately to embrace a large number of countries.

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The first Convention, which established a European Patent Office (EPO), came into force on October 7, 1977 by virtue of six of the European countries having signed the Agreement. It takes a somewhat larger step than the PCT but embraces fewer countries (21 European countries, including the nine Common Market members). Like the PCT, there is one application to be submitted for a set of countries designated from the 21. Final decision after examination will continue to rest with the individual nations.

The second Convention complements the first and, with a few reservations, attempts to establish a unitary patent law for the nine Common Market members. That is, a patent would be granted for all nine member countries as a unit. The Community Patent was originally planned to come into force at the same time as the first Convention; however, it has run into some difficulty and is not presently in force.

The bases or motivations for all of these new patent activities seem both clear and essentially identical. In fact, they haven't really changed in a few hundred years. Industrialized countries desire a greater and easier flow of technology across their borders. The demands of national so-

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-- Technology transfer has grown more significant than ever before to world stability and development in the latter half of the twentieth century -- hence improved transfer processes are needed and sought.

-- Patent laws, by protecting inventions, provide incentives to improve products and processes and bring them to the marketplace -- hence serve the public welfare.

-- Licensing practices conducted on a fair and equitable basis aid in bringing new products and processes to the marketplace.

-- Inventors and possessors of technology are reluctant to transfer technology in the face of high cost (in money, in time and in risk).

-- National sovereignty has created barriers spanning differences in legislation through judiciary proceedings, although there has been no basic disagreement among nations on the desirability of technology transfer, nor on concepts of patent law and licensing practice.

-- The requirement for repetition in each country of his cost, time and risk would still inhibit the inventor even if there were complete uniformity in patent law, procedure and licensing practice among countries.

-- The effort must be repeated by each national patent office and possibly by each national court system to which application is made.

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4. CONCLUSIONS

The examination of patent laws and licensing practices over the past several hundred years leads today to the same conclusions as those reached by the practical, far-sighted thinkers who drafted the United States Federal Constitution.

At that time, it would have been impractical, costly and contrary to the public good to allow each individual State to determine and operate its own patent and licensing system.

Today, it is impractical, costly and contrary to the public good for the industrialized countries of the world to determine and operate individually their own patent and licensing systems.

The industrialized nations seem to understand and to strive for -- yet still fail to reach the goal of -- a single patent system with a single court of justice. Their goal is blocked by the paper barriers raised by their short-sighted dependence on national sovereignty.

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The goal -- which seems clear for patent systems -- might well apply to other essential human activities in this age