

International Effects of Licensing

Role of licensing in contemporary setting as well as its niche in history

BY RT. HON. THE LORD SHERFIELD

What I will try to do, is to try to put licensing in its historical setting and relate it to the contemporary environment.

The Second World War gave a dramatic impetus to technological development and we have experienced advances of such rapidity that we are only now beginning to feel the effects on our political and social structure. The principal focus of this advance was the United States, which received contributions, mainly in the form of individuals, scientists and engineers who were either refugees from national socialism or persons seconded from allied countries. By the early fifties, when wartime security considerations began to lose their validity — marked imbalances in technological achievement became apparent, on the one hand between the United States and other industrialized countries, most of which had been its allies or associates in World War II and on the other, and perhaps even more strikingly, between the developed and the developing countries.

Then began a public international discussion, which went through many stages and which is still continuing through in a rather more muted and relaxed key.

We passed successively through somewhat emotional debates on the technological gap, and management of technology, the brain drain, the use of scientific manpower, and the "American Challenge".

In the sixties the technological gap was an "in" subject and was the theme of countless articles, seminars and conferences of which I myself attended two or three. After rivers of printers ink had been used up, it was concluded that if there was a gap it was a management rather than an information gap, and so the next "in" theme was the Management of Technology, again the subject of countless discussions. I quote from a contemporary report (1968) by Sir Solly (now Lord) Zuckerman on "Technological Innovation in Britain": "Clearly vigorous commercial and scientific management is every bit as important as the idea which is being exploited".

The Brain Drain was perhaps more particularly a British concern and again was the subject of many reports and debates. It too affected the developing as well as the developed countries, since, for example, medical brains drained to the United States were replaced in Britain by Indian, Pakistani and other medical brains who stayed in

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England rather than return to their own countries.

The next major subject, "The American Challenge", was a political as much as a technological matter. Helped by some statistics which were subsequently challenged in their turn, Monsieur Servan-Schreiber made a political point in a very effective manner.

But soon the focus of interest moved on to other subjects, mainly concerned with the effects of technological advance, such as doomwatching, conservation, and limits to growth. I will discuss these briefly later.

From Know-How '74

The point I want to make now is that the calmer approach to so many aspects of technological advance and transfer, is partly due to the work of your own society and its members and it is to this aspect of the main subject that I will now address myself.

Differing considerations apply depending on whether the transfer of technology is made between two industrialized countries whose levels of technical competence are at least comparable, or between an industrialized and a developing country.

I consider first the transfer between two industrialized countries and I identify several channels through which it can take place.

The first is through people; by sending individuals or groups, academic or professional, to study or train in another country. The efficacy of this depends on the quality of the individual, the length of the period of study or training, and whether at the end of it the individual returns to his or her country. He, or she, often does not.

The second is through international projects. Typically every advanced country seeks to develop its own technology by all the means open to it — by the encouragement of R&D in universities and national laboratories, through research contracts to industry, and by finance public or private for the various stages of innovation. It is relevant that work financed in this way is often defense-related and is subject to more or less stringent security provisions. Through these methods the relative influence of governments in the forefront of technology is probably increasing in most countries, and the corollary of this is that governments will exercise a greater control over the transfer of the information which they have acquired in this way. This in most cases is likely to have a restrictive effect.

Notwithstanding the importance of government's role in this respect the great proportion of technological advance takes place within industry as part of the production process and is more or less successful according to the initiative, skill and judgment of the management. In some large companies new ideas do not always get sufficient en-

couragement or support. There is a tendency to become bureaucratic and conservative and to be content with improving the efficiency of an existing process, rather than embark on the troublesome but ultimately more rewarding path of introducing novel ideas. This leads to the appearance of small spin-off companies which are the main applicants for private finance for innovation. This area of activity need not and usually does not involve any transfer of technology at all across frontiers.

The mounting costs of R&D have in recent years led to numerous attempts to combine the demands on resources of men and money in international, particularly European projects, which, however, have had very uneven success.

These are of several types. First there are intergovernmental organizations.

In the European field we have now had considerable experience of such organizations in Euratom, in ELDO, in ESRO, and in CERN, and, in a wider context, in ICAO. These bodies have all suffered in varying degrees from conflicting nationalistic influences. Euratom, in particular, had a very frustrating experience in this respect from its inception. Broadly speaking such institutions are successful in direct ratio to the distance of their work from commercial exploitation. The nearer to basic science the better they perform. The outstanding illustration of this proposition is CERN. But for the same reason the actual transfer of technology within these institutions tends to be small.

More effective are joint projects which can either be on an intergovernmental basis or on an industrial basis with or without government support.

In the first category we have in Europe the Dragon project. In the second we have the MRCA, the European airbus, and the various groups concerned with the development of uranium separation and reprocessing. Here I believe success depends on single management of the project by one country (Dragon) or by a joint company (in the case of the others I have mentioned) and of course on the efficiency of that management. Outside Europe we have Comsat and Telstar and the most ambitious of all, Skylab. In this sector the transfer of technology is, I suspect, much greater and may include cross-licensing.

Thirdly, in this area there is in Europe, the movement, so far slow, hesitant and perhaps only partially successful toward transnational mergers (Agfa Gevaert, Dunlop-Pirelli).

Finally, there are the big international consortia formed to take on major engineering contracts usually outside Europe and North America.

This leads me on to the transfer of technology through the multinational company. These companies have been and continue to be the object of attack, largely from left-wing quarters, and they are also the object of suspicion in many official circles as well. Yet most of them have made immense contributions to the expansion of international trade, and though it is clearly impossible to quantify the statement, I suggest that they have been more effective in bringing about the transfer of technology, and in closing technological gaps, than any other single factor. They are very flexible. They can select for transfer those products which can most efficiently be manufactured outside the headquarters country, and adapt their policy to the skills available elsewhere, producing high technology products in advanced industrial countries and products only need-

ing intermediate or low technology in less advanced countries. They have in practice to adjust themselves to governmental policies and local economic and social conditions, and it is to their advantage to make the transfer easy and usually without payment. They often forego the remission of profits to the headquarters country.

At the present time the contribution made by licensing may well be comparable to that made by international companies, though since the former is quantifiable and the latter is not, this is pure guesswork.

There are however, two factors which in present conditions favor licensing as against other forms of technology transfer.

The first is the rising cost of national and inhouse R&D. Governments and companies in these inflationary times are looking hard for opportunities to cut down R&D budgets. This attitude among other things tends to weaken the N.I.H. (not invented here) syndrome which has in the past adversely affected so many companies, and also Defense Ministries and armed services. Licensing looks progressively more attractive, especially as the benefits it has conferred on countries and industries which have gone in for it in the past are now becoming clear and widely understood. Japan is the favorite illustration.

The second factor is the experiences, which so-called "venture capital" companies have had in financing innovation. It was well understood that this was a risky business, and that the risk applied not only to the financing of development and start-up situations, but also to the commercial exploitation of developed products. It was expected that there would be a high proportion of failures, and a larger number of moderately successful enterprises, and that the reward must be looked for in the success of a small minority percentage of the portfolio.

I have referred twice to Japan, but statistics tend to lag behind or even to obscure the facts. Today Japan may be approaching nearer to the European countries in the quantity and quality of its industrial research and development, especially within the private sector. The statistics are masked by the circumstances that Japan spends very little on defense R&D. It has probably already imported a great deal of the basic technology which it requires, and its recent achievements in technological progress are almost certainly augmenting its export performance.

I add a few words about licensing to less developed countries, where there are some special considerations. The first is the availability of trained people, not so much a few high-quality professionals, of which there are always some, but of technical back-up for them. The second is that transfer of technology to many of these countries got off to a poor start. They naturally wanted to have the very latest of everything, nuclear reactors, computers, advanced aircraft — the lot, and in many cases they were not able to make the best use of them. It has taken time to realize that many of them would have been better off, and advanced more steadily and solidly if they had been content with low or intermediate technology at the outset of independence and built on that.

Quite recently I had the opportunity to visit a rapidly developing country in Latin America and was able to see at first hand something of the problems which they are facing. Strong nationalistic and socializing tendencies lead them to expropriate or nationalize foreign interests,

especially in the extraction industries. But they do not have the management capability to run the industries efficiently themselves and it will be many years before they can train up the middle and lower management expertise on which so much depends. The result is a very uneasy situation, in which the gap has to be filled by contracting for management, often with the firm which has been expropriated, or by their replacement by other foreign advisers. In either case it is often felt necessary to double bank the foreign management with local people (if they can be found) and this leads to confusion and inefficiency.

There remains, therefore a difficult psychological problem, and the task of consultants, licensing or other, who have to advise them in this respect has been, and will no doubt continue to be one of considerable responsibility. It cannot be easy to judge the level of technological processes and products which a development country can apply and utilize properly at any given moment. It is here that multinational companies, who have of course similar responsibilities, may have an easier task in spite of their political problems and the ever present risk of what has been called nationalization by telephone.

Improving standards of competence and the widening economic base of many industrialized countries are no doubt making the consultants' task easier, but it is in this area of activity that the licensing profession has the opportunity to make a major contribution to economic growth and prosperity through the world. I know that the Licensing Society is already giving a good deal of thought to this question and I have read a most interesting talk on transfer to technology in relation to Latin America given recently by Mr. Finnegan to one of the Society's meetings.

I said earlier in my talk that the focus of public interest had moved on from the development of technology to the consideration of its ecological and social effects. In recent years this had led to movements which have in many cases fostered attitudes actively hostile to the development of technology and sometimes to science itself. These movements, starting from the undoubtedly firm ground that insufficient attention has been given in the past to the ecological and social implications of particular technological processes, have, over the years, acquired a strong emotional content, and at times seem to verge on the irrational.

Certainly, in the field of energy, for example, resources and processes desperately needed, if standards of living are to be maintained and social and economic distress avoided, have been held up for years by small groups of resolute idealists through the use of legal expenditures and political pressures. There is always difficulty in distinguishing between scientific and pseudo-scientific argument, and there is an even greater area of dispute which involves value judgments of the most controversial and complex nature. By what criteria, to generalize from two recent cases, does one balance the loss of some species of plant or insect against the need of a great industry for water supplies, or the welfare of herds of elk against the requirement of large populations for heat and light.

There is also a wide range of questions as to the degree of hazard to which it is reasonable to expose a population. Since human beings cannot live any kind of normal and productive life without taking some risks, and since there is no such thing as a fail-safe or a foolproof existence (which in any case would be intolerable) what degree of

risk is reasonable? There is a tendency, for example, to set acceptable radiation levels below what is received by living in or even visiting a mountain resort. The intensity of feeling on these matters varies from country to country.

As far as the U.K. is concerned it is well known that the British tend to put the welfare of animals before that of human beings! It remains to be seen whether this preference will survive an energy shortage.

I came across a striking example of this phenomenon during recent travels. In Japan I was informed that the new Tokyo International Airport recently completed at a cost of (I think) ¥250 billion, and desperately needed owing to the unbelievable congestion of the existing airport, is not in operation. The reason is that 24 farming families are resisting the routing across their land of some pipelines, essential to the functioning of the airport. That is, each family is holding up the realization and employment of ¥10 billion of public money.

Too often the result of the various pressures and agitations is that a decision is put off and another committee or inquiry is instituted. There are problems which can only be settled by a government, or in some cases by two or three governments in consultation, and they are the sort of decisions which require a degree of political courage that is not always present.

Opposition and resistance to new technology takes another form which a labor force refuses to operate new advanced and expensive plant on the grounds that it requires a smaller number of men or women to work it. There have been some important examples in the United Kingdom in recent years, especially in the docks. It is a contemporary form of the sentiment which in the early days of the industrial revolution in England, led workers to smash new machinery introduced into factories. These manifestations have serious consequences for the economy as a whole, as well as for the firm or firms which have made the investment, and in addition discourages capital investment in advanced technology which would otherwise have been undertaken.

This is a very difficult phenomenon to handle. It is a case where small sectional interests prevail over the public advantage, and calls for intelligent and skillful leadership on the part both of management and labor which again, unhappily, has frequently not been present.

I need not labor these matters. Many persons have had some experience of the endless delays and postponements which occur in dealing with such problems, large or small, and are aware of the high economic cost, which is caused by what has come by some frustrated people to be called the curse of "conservation", which is not of course the same thing as the control of industrial pollution. Already the burden placed upon industry, especially in the United States, by legislation concerning the prevention of pollution and so on, is having the effect of increasing costs, eating up scarce capital resources, if they are indeed available, and therefore limiting growth.

I raise this thorny subject because it is one which those who are concerned, as all of you here are, with the application and development of technology, should not be afraid to discuss frankly and openly.

Moreover, one aspect of the problem is of course on our doorstep here in Oslo and across the North Sea. The dis-

(Please turn to Page 42)

cient foreign trade system. These actions are a part of a positive trend toward foreign trade reorganization and economic reform.

Its new joint-venture law is representative of this approach to economic dealings with the West. Ideally, the Romanians would like their Western partner in a cooperative arrangement to pay for all the equipment, provide all the technology, limit the foreign equity to 49 percent and promote the sale of products in Western markets.

New trading arrangements, into which a number of American corporations have entered — or shortly will enter — reflect this new attitude toward foreign investment.

This cooperative spirit was displayed in 1974 at the first meeting of the Romanian-U.S. Economic Council. The American section was represented by 44 executives from 25 firms and trade associations. I was pleased to be one of the participants from this country. Among the subjects that we discussed were the possibility of joint ventures, import and export opportunities, and existing obstacles to the expansion of bilateral trade.

International President's Message

(Continued from Page 2)

Since the majority of the delegates to LES International are located in Europe, I am scheduling the Annual Meeting of LES International to take place at that hotel on Sunday, September 21 — one day before the opening of the LES International conference. Accordingly, all delegates should reserve this date on their calendars and plan to attend. I also urge all of our members worldwide to attend this important international conference.

Interest in Hungary

Representatives of licensing organizations in Hungary (NOVEX and LICENCIA) have asked that I come to Budapest this spring to discuss the possibility of organizing and holding an International Licensing Conference in Hungary in the early part of September 1975. If this conference proves feasible, there will be the possibility of a member society in Hungary or a region of Eastern Europe, including Hungary. LES International also was approached by representatives of licensing organizations in Yugoslavia to help them conduct a licensing conference there sometime in 1975 with the aid of UNIDO.

Still further, we hope to find an appropriate time and place to meet in Germany in the near future. This could lead to the formation of an LES member society in Germany.

As you can readily appreciate from the foregoing, there is a great deal of activity occurring in the area of responsibility of LES International. As you know, however, LES International itself has no individual body of members. Its members constitute the entire membership of all of the member societies. LES International must turn to all of you for assistance in carrying out its program of activities, and particularly in supporting and attending the International meetings of which we have many scheduled for 1975.

We're off to a good start, so let's all keep up the momentum and make sure that LES International grows into the strong and influential organization that it promises to be.

International Effects of Licensing

(Continued from Page 5)

covery and exploitation of North Sea oil, which is vital to the economies not only of Norway and the United Kingdom but of the whole of Western Europe, has an impact on some rather small and specialized communities and some wild but beautiful country. It exemplifies the conflict between essential economic progress and the interests of conservation. The energy shortage, and the paramount need to develop additional resources (especially in oil) and alternative sources (particularly nuclear energy) have sharpened this issue to a point which to many sincere and committed people may be agonizing. But, as our American friends say, "something has got to give".

On the other side of the world there is a precisely parallel conflict arising over the exploitation of the offshore oil field in Southern California, where strong conservation groups are up in arms against those who need the oil.

I have two comments to make: The first is that the deleterious effects of technological processes can only be remedied by the application of science and technology to the appropriate counter measures. There is here a large and relatively new field for research, development and of course licensing.

The second is that it would be desirable for all who have a professional interest in technological matters to devote some time and resources to the task of securing a more balanced and objective understanding of the issues involved.

In many cases, the welfare of large populations is at stake and there is, I suggest, a responsibility on those who have professional competence and understanding, to try to educate public opinion and to influence public authorities.

Legal Restraints on Licensing

(Continued from Page 6)

would often like to have competition between his licensees. On the other hand, the small licensor will often, if he does not have a very strong pull in the market, be unable to convince his licensee to accept to take a license if one does not grant him exclusivity. It is a kind of problem which might be different from the small and big licensor and which might look very different in the national interest from case to case.

Another kind of restriction is the *loyalty clauses*. They require of the licensee not to take up any competitive lines. This would seem obvious, but recently it is proposed to be against the national interest. More difficult is the question if the licensee should have the right to oppose industrial rights registered by the licensor. In Common Law it is obvious that the licensee cannot do this. Regulations in the Common Market and the United States would find such a loyalty clause as a hindrance to competition and therefore a criminal offense.

Length of the Agreement. Here the licensor and possibly the licensee would tend to wish for a long-term cooperation. We have licensing agreements in Norway 30-40 years old and still going strong. These are what you might call specialization agreements. This is a kind of licensing