Start Small, Grow With Licensing

Case history of how small German company started and has grown by licensing its technology

BY HANS KNOTT*

When I was invited some months ago to speak at your conference, I had no idea that a learned body such as yours would be interested in hearing the story of my invention, its conception, its development and finally its licensing out to all industrialized states. As a matter of fact, up till then the course of events looked pretty normal to me. One of your board members pointed out to me, however, that, for a small company such as mine a total number of 69 licensees is rather unusual, and looking back on it all, I now must admit that it all came about in a rather logical way. To an outsider, it shows that licensing can play an important role in a marketing concept.

Perhaps my story is not a typical one, and I may not fit the general pattern of a successful inventor, most of whom have a technical background, which I do not have. Immediately after the war, as a very young man, I started as a trainee in the Dresdner Bank, where I soon found that sitting behind a desk was not my kind of way to spend the day. In 1947, when jobs were still scarce, I joined the packaging department of a publishing company in Regensburg. However, my target was set on a sales function.

I was successful. I was transferred to the Dusseldorf office, and traveled by any means of transportation available in those days, between Cologne and Flensburg. In those years, young men all over Europe dreamed of far away places with strange sounding names (as the song would have it). In November 1943 I boarded a ship in Bordeaux on my way to Buenos Aires.

Unskilled Workers

Immigrants can't be too selective, so in Argentina I started as an unskilled worker in a paper mill. Having mastered the Spanish language sufficiently, I was promoted to the office after three months. I took evening courses in economics for six semesters at the Academia Spitman. I then joined the Mate company, well known in South America, and until 1954 I was responsible for imports and exports. I traveled extensively through this wonderful country, and got to appreciate its warmhearted and spontaneous people.

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Unfortunately, political developments in Argentina made me doubt the economic future of this country, and I decided to try my luck again in my country of birth. This time I became an export manager, and a part-time teacher of Spanish and lecturer through the Chamber of Commerce on foreign trade topics. All the time, however, the urge to set up a business of my own lurked in the back of my mind, although I did not know exactly in what branch or sector, as long as it would enable me to be independent.

As luck would have it, a small manufacturing outfit for rubber stamps went into bankruptcy, and for a mere 6,000 D-Marks I was able to buy the plant, which covered no more than 12 square metres or 25 square yards. Fortunately, the receiver allowed me easy terms: 1,000 D-Marks cash down and the balance in 18 months. So there I was—entrepreneur, independent, and no knowledge whatsoever of rubber, let alone other polymers.

We started doing what the previous owner had been doing. We made rubber office stamps, mainly. Fortunately, our authorities as well as our businessmen love putting rubber stamps on anything that is written down, so we had a small but steady income. One day, a client of ours, who had a printing shop, suggested that I might as well start making rubber stereo plates. Our strict observance of delivery deadlines for the stamps had impressed him, and since the printing industry is very sensitive to punctuality, he foresaw that we would get quite some orders once we produced the proper quality.

Licensee

We acquired the so-called Semperit process, and although I did not realize it at that time, that was my first encounter with a licensing transaction, though I was the licensee. Once more, our good reputation in meeting deadlines, preferring to lose orders than to tell lies about delivery dates, prompted our clients in the graphic sector to suggest we should supply engraved rollers. There have been times, that we deeply regretted our decision to follow this suggestion, because for this technology practically no one was inclined to help us, and we had to find our own way.

When I say that no one helped me, I mean nobody within the rubber industry, which was and still is highly competitive. I should mention, though, that some suppliers of basic materials were very helpful, particularly Akzo Chemie in Duren, whose chemists and technologists were always available when we hit a snag.

Having mastered the art of making the right rubber compounds, we discovered that the way in which rubber rollers were made was very time-consuming and pro-

duced erratic results in terms of quality. I will not bother you with too many technical details, but the main flaws in rubber covered rollers were in the adhesion of the rubber to the steel core, and the presence of air locks within the rubber wrapped around the steel core. Rollers were produced very much the same as 100 years before. One spread out a finely calandered sheet of rubber on a table, put the steel core on top of that and would then start wrapping the sheet around the core, carefully pressing and hammering every square inch of rubber sheeting on to the core. The average roller for a printing press would take several hours to make. Huge rollers for paper mills might take days or weeks.

There had been previous attempts to solve this problem by using moulds, but these were only effective when mass producing rollers of the same size and quality. Now, a typical aspect of the rubber roller-building industry is that every client has a different size roller to be made, and in yet another quality. This is no wonder, taking into account the various uses of rubber covered rollers. High speed printing presses, paper mills, textile printing presses, steel plate pickling lines, aluminum plate mills, just to name a few users, all have different quality demands.

Competition

After a while I came to the conclusion that in order to be competitive, something had to be done about the way in which we covered the rubber rollers. Once again I repeat that I was and still am not an engineer. Looking back, one can say that setting myself to the task of improving the method of rubber roller covering showed youthful audacity more than a deep insight into the problems of developing a new technology.

As you may recall, one of my very first jobs was in the packaging department of a publishing firm, and what I had seen there and even used in packaging equipment led me to a possible solution of the basic problem in rubber roller building—that of wrapping rubber around a steel core. For weeks and months I spent every night and even weekends in my plant. I soon found that my basic idea entailed a number of ancillary machines, necessary to prepare the rubber strips and to wrap these strips around the steel core.

What happened next may sound like a fairy tale for those of you who are daily involved in the protection of industrial property. I showed the whole system to one of my suppliers and he pointed out to me that I should seek patent protection. He might have gone off and explained the system to his other clients—thereby earning their eternal gratitude. But instead he set himself to explaining to me in detail the advantages of the patent system. As the ownership of a patent would enable me to obtain certain benefits through the German regulations, with which you will be familiar, I decided to file my patent application. Little did I know that whatever the Ministry of Economic Affairs grants you, the Ministry of Finance will try to reclaim.

As some of you may know, the rubber industry is a very traditional industry, and its members all over the world have various crosslinks. In this international family, the rubber roller builders form a separate group with one peculiarity. Whether or not a colleague is regarded as a competitor is very much decided by geography. It is very rare that a client send steel cores to be covered over a distance of more than a few hundred kilometers, unless he has certain specifications that can only be met by one particular roller builder. Consequently, there are quite some informal contacts and even personal friendships.

Decides to License

It was no wonder, therefore, that this funny man in Dusseldorf, who had apparently come up with a new way to build rubber rollers was discussed at the various meetings. Before long the market leader in Germany, who holds the number one position in rollers for the paper industry, came to see me. They invited me to see one of their plants and say whether I felt that my system would work on their rollers. At that time I had to make a fundamental decision with regard to my future policy. I understood full well that with my method I could undercut any price quoted by my competitors, and at least for a few years I had a tremendous growth potential.

On the other hand, I was, relatively speaking, an outsider, facing an industry with considerable resources and well-established links with clients who also were quite tradition-minded (at least in those years).

Against this formidable potential competition I would have to zealously guard my patent rights, seek an international protection (and you all know the cost of that!) and, if anyone would try and infringe on my patent rights, it would be inside his own plant, which would make it pretty difficult for me to prove in court.

Consequently, I decided to license out my method to whoever would ask for it, though at that time I had no intention to go and seek potential licenses.

My very first licensee was the number one company that I mentioned before, and here I ran into that common phenomena that most of you will be familiar with—opposition, and even sabotage, on the shop floor. Mind you, I cannot blame them. Fifty-five men were involved in rubber roller building, and they immediately recognized the imminent danger. For months the battle went on, and the management of the company was inclined to believe the negative reports from the staff. Fortunately for me, one production manager believed in my system, and when a sudden rush job came in, he called me.

Seventy rollers, each 6 meters in length, had to be covered, and the client needed the rollers right away. I rushed to the plant with my foreman and, together with the production manager we covered all 70 rollers from nine in the evening till seven in the morning. Management was convinced that my technology worked. Within a few weeks the work force was reduced from 55 to 5 persons, with the same output.

Word Spreads

My first licensee now started to tell others about this new and profitable way of manufacturing rollers, and within months I licensed out my technology to the market leaders in Switzerland and France. My Swiss licensees filed in those years more than 100 patent applications per year, and they quickly grasped the benefits of my technology. But even there we ran into a snag. One Monday morning I got a frantic phone call.

Not one roller came out right, could I please come and see them at once. As it turned out, the operator had been celebrating carnival in quite a thorough way, and when he came back, he started the wrapping part from the wrong side.

Our Swiss licensees knew a Swiss trading firm, Siber Hegner, which was also involved in technology transfer, and in fact had been active for them as well. It was through this channel that I had my first taste of the noble art of technology transfer, in which so many members of your society are daily involved. Siber Hegner introduced us to a major company in Japan, and within a couple of weeks we arrived at a licensing agreement which really covered all legal and commercial aspects of this kind of transaction. Up till that moment, we had written our agreements ourselves, and looking back to some of them now, one must be grateful that so many of our licensees in those early days were honest and fair, living up to the intentions of the agreements and not trying the various loopholes that we now know to be in them.

We now have 69 licensees in the industrialized world and in some of the developing nations, and thus we cover and operate through our licensees in markets that otherwise we could never reach. We have found licensing to be a two-way traffic—not only do we get to know improvements in our technology (mainly in the area of formulations of rubber compounds), but some of our licensees have developed ingenious ancillary equipment. A recent development, which we are now marketing to the other licensees is equipment that will revert the molecules in the rubber compound after it has been wrapped around the core, thus avoiding the so-called "barberpoling," an optical phenomena disliked by users in the graphic industries.

There have been attempts to imitate the basic principle of our patent, and a major U.S. corporation put on the market, a few years after our introduction, another wrapping technology, but with a hot, extruded strip. We have licensees who use both technologies, though for different purposes. If you have to change from one quality to another, cleaning up an extruder becomes a time-consuming operation. Furthermore, if one has to build several layers of rubber compounds, and hot strip is used, there is an internal buildup of heat which produces a sort of pre-curing effect. Thus, the resulting roller is not uniform in its physical and mechanical properties.

Duplicating

Another case involved an effort at duplication. Eighteen months after we had supplied a set of equipment which goes with the technology, the licensee reported that "the thing does not work." When I went to see the equipment, I found that it was a duplicate, almost perfect, but not quite. Shamefacedly, the licensee admitted an attempt at duplicating, and we agreed on an additional supply of equipment.

This is one aspect of my technology that I believe has contributed to its success. It can be applied only with certain equipment designed and built under my supervision. We have found that this gives additional protection to our process, and through spare parts supplies we remain in touch with our licensees.

Most of these have become friends over the past decades. I visit them regularly, whether in Chile, Argentina, India or Japan. Our licensing agreements have led us into activities and business relations that we did not foresee at the time we started licensing out. We import rubber mallets from India and other mass-produced rubber products. We have a flourishing activity in buying and selling reconditioned machinery for the rubber and plastics industry, which is particularly successful because we know pretty well what machinery our licensees are using.

Earlier, I said that, within the rubber industry, people used to know and like each other. In recent years, I have noticed a deterioration in these relations and, in some cases my contacts with potential licensees were hindered by this new mentality.

In the past, I could suggest prospective licensees call the existing licensees for information about their experiences. Now, a substantial number of licensees refuse to give such information, or even deny having the process at all! In the latter case, I was able to prove to my prospect that this was not true by showing him order sheets for spare parts from the very same firm that denied having my process. But it did put us back at least a half year in our negotiations.

The only area we have not yet been licensing out to is Eastern Europe. The location of and introduction to potential licensees is done by a specialized technology broker, Helicon of Holland, whose managing director is a member of your society, and who has helped us before in a license agreement with a British company. Negotiations are now under way with one of the Comecon countries, and two other countries have intimated that as soon as the first installation is working, they will send their experts and inspect the plant. It is expected that they will then also make a positive decision.

Intermediary Useful

We have found that the use of an intermediary, such as Helicon, is very useful, especially in areas where special circumstances are predominant. This also applies to the United States, where we work through another member of the LES. Here we are hampered by the fact that, although the original and exclusive contract which we had with a major U.S. manufacturer has now expired, we find it hard to convince other industries that it pays to adopt our technology.

Perhaps the dominant position of our initial licensee is such that nobody is interested in a "me-too" license. Obviously, our licensee refuses to answer any questions about our process, and has hermetically sealed off all his eight plants where our process is being applied, even to overseas visitors who have no intention at all to start operating in the U.S. market. If anyone among you can show me a way out of this situation, I'll be glad to meet you.

Summing up, one can say that our relatively small company, with no more than 40 employees, has a worldwide network of contacts which we could not have had were it not for the fact that licensing has become a part of our marketing concept.

Some 80% of the huge rollers used in the European paper mills—both East and West—are made with our technology. This in itself means a share of the market which we, by ourselves, could never have reached. I do

admit that in my own country, I nominated too many licensees, although on the other hand those companies which I would have turned down would probably have terminated their rubber roller covering activities by now.

In our present-day alternative pressure groups in Europe, the slogan is that "small is beautiful." Although I hate to think what would become of our economy if ITT or Shell would adopt this philosophy, in my case it certainly came true. It pays to stay with two feet on the ground, and not jump further than your strength will permit you. On the other hand, if you have a good technology, it certainly pays to go into licensing.