TECHNOLOGICAL DEPENDENCE FROM FOREIGN COUNTRIES IS DANGEROUS ACTIVE LICENSE STRATEGY — A PATTERN FOR SWITZERLAND?

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The Swiss economy is technologically still at a remarkable level. Export achievements, especially in the machining industry, are mainly based, however, on further development of foreign primary technologies. This poses a number of problems. Funding research, which would enable Switzerland to keep up in the field of primary technologies, is on the one hand, considering a limited (export) maket, in most cases too expensive.
A possible solution to this problem could be a licensing strategy like the one that has been carried on successfully for years by the American Kollmorgen Corporation.

Many jobs in the Swiss watch-making, textile, household appliance, toolmaking and machine industry have been lost to the cheaper producing threshold countries in the Far East (Main reasons: lower wages, no trade-unions, harder and longer work ethics, minimum social security payments, etc.) A back-lash has partially occurred in those fields where technological innovation, enterprising management, modern marketing and labour-saving manufacturing processes together were able to absorb these cost differentials and even, in addition to this, enable new net value added through quality improvements (example: the Swatch-watches by Ebauches Corp.) The change depends heavily on the use of assembling robots which revolutionized the manufacturing process. These secondary innovations link technology (micro-electronics and precision mechanics) with new manufacturing processes (robots and automatic machines).
The emphasis is on application and development of existing technologies.

DANGEROUS DEPENDENCE

The disadvantage of the application strategy is that the primary technology must be licensed from foreign countries. This dependence from foreign countries is alarming for the following reasons:

1) Technological progress in micro-electronics is unpredictable, fast and complex. Existing licenses and patents can become useless in not time through new inventions. Licensees, therefore, have to be informed constantly, and existing licensing agreements have to be re-evaluated continuously.
2) Certain technologies cannot be licensed or are only offered belatedly, because the inventor wants to make use of the competitive advantage himself.
3) Companies, which so far have concentrated on primary technologies (e.g. IBM), could always expand from basic products (e.g. computers) to applied, customer specified products (e.g. circuits).

Swiss companies are mainly users of foreign primary technologies. Microelectronique Marin (MEM), a subsidiary of the watch making group is bound by a licensing agreement to Hughes, and BBC and Autophon have, among others, a licensing agreement with Kollmorgen. Other Swiss companies which buy their circuits directly from ITT, Siemens or Philips, are even more dependent than the Licensees.

Fela Corp., which has taken to the counter-attack with its Lasarray technology, is an exception. Fela's primary inventions will be sold in the near future through license agreements to foreign users. This pioneer work is even more remarkable if one considers the difficulties with which this bold company had to cope. Should Fela Corp. succeed in offering its Lasarray technology abroad, the possibility of doing further research in the field of K-Circuits would be created. The revenues from the licensing business could be used for further research programs and additional venture capital would be easier to attract.

An example of ten years of successful licensing strateqy is PCK Technolgoy, a division of the American Kollmorgen Corporation. On the one hand, PCK is the internal R&D department of the parent company (300 million dollars in sales: opto-electrical instruments, motors, and interconnection, etc.); on the other hand, PCK works as an independent research company. The 2000 patents of PCK are used by 150 different companies (among them also the Swiss companies BBC and Autophon) and 25% of their royalties come from Japan.

PCK develops some of the patented inventions to finished products and sells these on the world market. Other inventions are sold through licensing to outside companies without getting in on finished production themselves. Sometimes both strategies exist at the same time. Multiwire Interconnection Boards and circuit testing machines, e.g., are produced by Kollmorgen's manufacturing department, Electronic Equipment Division (detached from PCK), while PCK sells the technologies, which underlie these products, to interested companies.

John F. Dennis-Browne, Senior Vice President for Licensing and Sales, conceives PCK mainly as a "think" factory, which constantly has to produce new inventions without being distracted by thoughts about manufacturing. He leaves the utilization and the further development of the patented inventions to Kollmorgen's manufacturing divisions without committing himself tightly to Kollmorgen. Dennis-Browne has insisted on the right to sell PCK's inventions, either internally or externally, under license.

PCK finances the major part of the research expenditure with revenues from the licensing business. Dennis-Browne looks for venture capital for capital intensive research programs within Kollmorgen (Kollmorgen's own venture capital division) as well as outside of the mother company, from well known financial institutions and venture capital brokers. Dennis-Browne has set himself the following primary tasks:

1) Ensure a climate of inventiveness (Tactics: shield the researchers from Kollmorgen's "hungry" product managers,. Relieve the researchers from Kollmorgen's bureaucratic work-a-day routine).
2) Employ and keep qualified researchers, to prevent them from joining competitors or changing to entreneurship (Tactics: attractive salaries, creation of a team spirit, management development, name of the inventor is mentioned on the patent, the inventor is granted premiums and compensation, flexible working hours, common social activities, and,. in the future, perhaps also license participation).
3) Cultivate and increase the number of licensees. (Tactics: contractual obligation of the licensees to share all developments of the patents with PCK, integration of the licensees into a community of interests, a kind of a group of clients, under the direction of PCK; conferences; a magazine; reciprocal visits; PCK organized development programs; etc.).
4) Stimulation of competition between the licensees to make full use of the patents. (Tactics: PCK does not place any exclusive licensing agreements, licensing contracts with limited duration, obligation of minimum production numbers, etc.)

CONCLUSIONS

Cooperative research and license oriented research have developed to strategically important organizational forms, which are well received especially in the United States and Japan. Both kinds of research are basically also possible in Switzerland, as long as there is a willingness to change conventional structures for a new way of thinking, to replace something apparently "safe" with something obviously "uncertain".
A process of detachment that is based on a good deal of courage and a willingness to act – both qualities which are not yet part of everday life in Swiss micro-electronics at the moment.

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