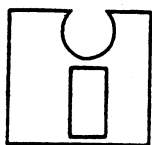


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HOW INVENTORS' ASSOCIATIONS CAN HELP THEIR MEMBERS TO MAKE
INVENTIONS IN RESPONSE TO REAL INDUSTRY NEEDS

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HOW INVENTORS' ASSOCIATIONS CAN HELP THEIR MEMBERS TO MAKE INVENTIONS IN RESPONSE TO REAL INDUSTRY NEEDS

1. Successful inventions are innovations. The inventions intended for production and commercialization are usually created in one of the two following ways:
 - (a) The inventor has an idea, or an idea is generated through research or product development.
 - (b) A solution for an existing problem is sought, or an innovative novelty product is developed as a response to the market demand.
2. In a broad sense, we can call the first type of inventions supply-oriented and the second type demand-oriented. We also talk about push and pull.
3. In both cases, inventions can be made by a private individual, a university research team, or by an employee or a product development team in an enterprise. The owner of the invention is, respectively, one person or a group of persons, an educational or research institute, or an enterprise.
4. Small and medium-sized enterprises normally have limited resources, and they use the bulk of their time for the critical operations, that is, for production and marketing. When developing the enterprise and its products, SMEs should aim at obtaining the product ideas, research results and know-how in as finished a state as possible to start the application work of their own.
5. For many SMEs, the quickest way to obtain new products or new technology is through purchasing. This can happen in one of the following ways:
 - by signing a license agreement that grants the enterprise the right to manufacture and sell a product or method protected by patent at an agreed price;
 - by signing a cooperation agreement with the person or the enterprise who owns the know-how or the patent;
 - by acquiring the enterprise that owns the desired product or method;
 - by employing innovative people;
 - by acquiring equipment or prototypes;
 - by commissioning problem solution, product development and research tasks to outside inventors, other experts or research institutes.
6. Very few ideas are ready from the start - inventions must be developed into marketable products. During their early life, inventions must be taken care of, just like plant seedlings, to allow them to grow and develop. Particularly in the conceptual and development phase, several projects must be under way simultaneously, as some of them will be rejected during the

development and commercialization process due to technical, financial or commercial reasons. The development phase requires plenty of creative effort, know-how and financial resources, for which outside expertise is usually needed. Many inventions can eventually be patented. The product development phase involves the design of technological and manufacturing solutions and the building of a prototype, which is then tested and often modified a number of times. As early as possible, special attention should be paid to market research and to the wishes and needs of potential customers, consumers or industrial enterprises. After several phases, many inventions - but by no means all of them - can be converted into finished products that are taken into production and marketed. The costs per invention due to patenting, product development and marketing vary greatly, from a couple of hundred thousand marks to millions or even tens of millions of marks.

7. For preliminary evaluation, some characteristics of a good idea, invention or innovation and, subsequently, a good product, are the following:

- the product has market demand;
- the product is innovative, new and patentable;
- the product is important for the enterprise and for employment;
- the product is functional, feasible for production and cost-effective;
- the product has a short lead time;
- the parties involved are committed to the development and to the product;
- financiers are interested in the product.

8. When considering the potential of an innovative product, factors both external and internal to the enterprise are usually considered. Some of these factors are the following:

- How important is the product for the enterprise and for its growth, competitiveness and image?
- What sort of mental and financial investments are required by the new product and its development and does it fit the enterprise's line of production?
- What are the risks of the project?
- What are the profit expectations?
- What is the life cycle of the product?

9. The evaluation of the market potential is a key factor during the entire product development phase. As the process approaches the commercialization phase, the focus shifts to marketing and commercialization tasks.

10. From the very beginning, the invention should be considered as a business opportunity for the enterprise to be founded or to the existing enterprise. When evaluating a product prior to starting its production, it does not matter whether the invention is made within the enterprise, or by an outside inventor who is offering the invention for the use of the enterprise. However, inventions made within the enterprise can start off more smoothly, as the feasible production opportunities already exist and the invention is related to the enterprise's own line of business. On the other hand, the enterprises would be wise to accept the idea that an equally good or even better product idea may well come from outside their own organization.

11. The development of an idea into a product is based on cooperation and differentiation. It is not always profitable to establish an enterprise around a singular invention. It may be more practical to have the production carried out in an existing enterprise, which is then developed. This way, the entrepreneurial skills have already been proven. Marketing, too, needs its own specialists. Enterprises can enhance their operations also by cooperating with others or by networking in order to utilize the best expertise of various enterprises or persons in areas such as innovation, production or marketing.

THE FOUNDATION FOR FINNISH INVENTIONS - THE PROMOTER OF INVENTION PROJECTS

12. In Finland, public authorities support and promote the development of inventions into products as well as research and product development efforts. The Foundation for Finnish Inventions supports and promotes the creation, development and utilization of inventions in Finland. The Foundation's basic services include consultancy, evaluation of inventions, financing invention protection, product development and marketing, and promoting the commercialization of inventions in many other ways. Central criteria for obtaining funding include market proximity, innovativeness and patentability of the invention. The level of technology is also important. The funding is intended for developing inventions made by private individuals and small businesses into marketable products, produced either by the inventor-entrepreneur himself or by means of a license or other type of exploitation agreement.

13. The funding provided by the Foundation gives the inventor the opportunity to start, maintain or expand production in existing enterprises or ones to be founded, and subsequently creates jobs and export potential. At present, some 20-25% of all funded invention projects are commercialized. These products are manufactured either by the inventor or through a license agreement.

14. The industrial and commercial exploitation of invention projects is promoted by various methods of marketing and marketing communication. New products are presented to entrepreneurs at invention fairs and other such events, through different media and through direct marketing. The Foundation maintains an Invention Market, which is a constantly updated Internet marketplace offering new business and product ideas for entrepreneurs. The Invention Market can be found at the Internet address www.keksintosaatio.fi, and it is available in English.

15. Part of the Foundation's mission is to participate in international, domestic or regional projects that promote the creation of inventions and general innovativeness. The Foundation of Finnish Inventions obtains the major part of its funds from the Ministry of Trade and Industry as government subsidy. The Foundation was established in 1971. Its premises are

located in Espoo close to the University of Technology. Moreover, the Foundation has 12 regional representatives.

16. The other most important organizations involved in technology development and enterprise funding in Finland are Technology Development Centre TEKES, KERA Corporation, the Finnish National Fund for Research and Development Sitra, and the Employment and economic development centers, which are joint regional service centers of three ministries - the Ministry of Trade and Industry, the Ministry of Agriculture and Forestry, and the Ministry of Labour. In the private sector, financiers and investors include banks, venture capital investors and other business promoters.

17. One of the central objectives of commerce and industry is to enhance competitiveness with new innovative products. Innovations are the cornerstone of business reforms. However, it is difficult to predict which innovations will turn out to be the success stories of the future. It is thus important to be able from the early stage on to provide support for the patenting, product development and commercialization of as many promising Finnish inventions as possible.

INVENTORS' ASSOCIATIONS IN FINLAND

18. Many promising inventions that receive support from the Foundation of Finnish Inventions come from members of inventors' associations. The fruitfulness of the cooperation between the Foundation and inventors' associations would benefit from the associations' systematic work in raising funds for inventions after they have received an initial funding from the Foundation. The central issue is to give a positive impression of inventors for enterprises in order to create opportunities for carrying out new product and business ideas. To this end, the cooperation between enterprises, the Foundation for Finnish Inventions and the inventors' associations is of great importance.

19. From the international perspective, Finland and other Scandinavian countries have one of the largest numbers of inventors' associations in proportion to the number of inhabitants. At present, there are 26 inventors' associations in Finland. They are quite evenly distributed around the country, and the central organization is located in Helsinki. The total number of members is some 1,500. To some extent, the associations function as an interest group, for instance when trying to influence tax policy.

20. The objective of the inventors' association is, naturally, to make invention activities better known and respected, and to promote the creativity of both young and old at work and at leisure. However, a problem that receives ever growing attention is not the number of inventions - anyway, in proportion to the number of inhabitants, Finland is one of the leading countries in patenting inventions - but their development into products and commercialization. This is why the associations should train their members so that the quality and timeliness of inventions would meet the existing needs of enterprises. Entrepreneur training is also an essential part of inventor training. Although the inventor may not intend to start a business, knowledge of entrepreneurial concerns helps him to produce feasible ideas. In Sweden, inventors' associations have been involved in inventor training for several years now. In Finland, this kind of training is included in the plan of action of inventors' central organization, and in some fields, it is already under way.

INVENTORS AND INVENTORS' ASSOCIATIONS WORK FOR BETTER FUTURE

21. Although many members of inventors' associations are private individuals, inventors have an important role and ever increasing opportunities for influencing invention activities in enterprises and in industry. Inventors and inventors' associations can promote inventions for the future in several ways, such as the following:

- Inventors' associations promote interest in inventions, technology, know-how and in training related to these areas.
- Inventors' associations should recruit more young members and specialists from industry, enterprises and research institutes to foster cooperation with these organizations. Also, the cooperation with product development and quality organizations should be enhanced.
- The role of inventors should be emphasized when granting innovation awards.
- Inventors' associations and inventors should stay alert so as to notice problems, market needs and gaps and new product opportunities.
- Inventors' associations can participate in changing the attitudes so as to reduce the NIH phenomenon in enterprises.
- Inventors' associations can promote enterprises' interest in the expertise of problem solvers by making successful inventions public, naturally with the permission of the enterprises and persons involved.
- Inventors' associations can maintain registers of the expertise areas of inventors to promote special skills and to distribute information on expert tasks.
- Inventors' associations can arrange confidential brainstorming sessions to solve problems.
- Inventors' associations should offer their services to enterprises and industry as consultants or problem solvers.
- International cooperation and the Internet can be used to promote information flow and communication.

22. Regarding the number of patent applications, one third of Finnish inventions is made by private individuals and two thirds by enterprise employees. Many enterprises are, however, one-man firms or small firms with only a couple of employees. Innovativeness should be enhanced in all enterprises regardless of their size. Inventors' associations and inventors have a lot of work to do in this area.

NOW IS THE TIME TO PREPARE FOR THE FUTURE

23. Perhaps the most significant method of competition in this decade is time: you have to hit the market at the right time and with the right products. Due to advanced communication and extensive international cooperation, obtaining and utilizing information is more important now than ever before.

24. Universities and institutes should teach their students not only the technology and their chosen specialty, but also other methods of competition, such as creativity, patent exploitation, commercialization and marketing of technology products, and entrepreneurship.

25. Demand is a central criterion for business and for new products and methods. Consumers demand and buy novelty products, and the industry requires better and more efficient equipment to keep up with domestic and international competition. To make a product succeed, the enterprises need inventions, product development and aggressive marketing. New products also have a great impact on employment, particularly in small and medium-sized enterprises, as they secure existing jobs and create new ones. Preparation for the future and for internationalization is a long-term project.

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