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# Small Technology-Based Firm on the Polish Market - potential, expectations and needs -

## 1. Technology-Based Firm- Definition

In recent years in highly developed and competitive economies there appeared a new category of economic entities - small firms based on advanced technologies. Small technology-based firms started to appear at the end of 60s and the beginning of 70s in the USA and in the 80s in Europe. **Such firms are defined as developing, producing and selling products and services that materialise a significant part of contemporary science. As highly innovative and entrepreneurial entities they convert science into new technics and undertake its market commercialisation**[1]. Small technology-based firm is a materialisation of Schumpeterian entrepreneur-innovator that in a function of *Newcomer* is the basic locomotive of economic growth. Support of small technology-based firms' creation by innovation policy results from expectations of the fast increase of the number of new workplaces thanks to development of mentioned firms as well as creation of a link between science (financed by the budget) and the industry. However, realisation of these expectations is determined by a degree of development of capital market that finances undertakings of a high risk as well as development of business environment, the governmental policy of

[1] R. Oakey, R. Rothwell, S. Cooper, *The Management of Innovation in High-Technology Small Firms*, Pinter Publishers Limited, London 1988, s. 4; W.M. Grudzewski, I.K. Hejduk, *Akademicka przedsiębiorczość źródłem rozwoju nowoczesnej techniki i technologii. "Ekonomika i Organizacja Przedsiębiorstwa"* 1997 nr 9/10.

orders, programs of co-operation between universities and small firms, social acceptation of innovations etc[2]. Support of technology-based firms' development has become a basis of economic policy in many countries (Sweden, Israel Taiwan) and regions (California, Baden-Wurttemberg, Orange County, Saxony).

Definitions of firms based on new technologies underline different specific factors that make separation of this group of firms possible. Tight ties of the firms' owners with a source of used (and developed) technology - i.e. research and technical experiences gained in the previous workplace (high school, research centre or other firm) as well as tight contacts with this source of technology in development are the most often underlined[3]. There are also some additional features that are characteristic of the firms based on new technics:

- idea of new business is mainly based on use of advanced technical knowledge developed or gained in "a source of technology"
- firm is independent, at least at the preliminary stages of its development
- firm is entrepreneurial, e.g. controlled or managed by an entrepreneur or a group of entrepreneurs

High absorption of science in small technology-based firms is also underlined (high share of R&D expenditures in relation to turnover, high percentage of persons with scientific-research experiences in total employment) as well as concentration on a few products with high degree of novelty.[4] Technology-oriented firms develop and/or use advanced technologies that originated as a result of intensive use of technical and scientific knowledge. These firms continuously implement new products or technologies and use different sources of innovations. They act in new developing sectors with high technical possibilities.

## 2. General Characteristic of the Investigated Enterprises

Empirical research conducted in 1997 by a team of researchers from the Institute of Economics, University of Lodz aimed at the analysis of activity of small and medium-sized technology-oriented enterprises in Poland in the period of economic

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[2] E.B. Roberts, *Entrepreneurs in High Technology*, Oxord University Pres, New York, 1991, s. 154-156; R. Rothwell, *The changing Nature of the Innovation Process: Implications for SMEs*, [w:] R. Oakey (ed.), *New technology-based firms in the 1990s*,P.C.P London 1994, s. 60-61.

[3] E. Autio, *Four types of innovators: a conceptual and empirical study of new technology-based companies as innovators*, *"Entrepreneurship&Research Development"*, 1995 nr 7.

[4] Matusiak K. B., *Parki technologiczne. Instytucjonalne wspieranie przedsiębiorczości, procesów innowacyjnych i rozwoju regionalnego*, Fundacja Inkubator, Łódź 1995.

transformation. Investigation referred to the owners and managers of 55 small and medium-sized technology-based firms located at the whole territory of the country. The investigated firms operated in high technology areas. Selection of the firms for empirical research was conducted with assistance of experts from different economic and technical circles who professionally deal with transfer and commercialisation of high technologies, support of innovativeness in small firms or technical advice in industry as well as with assistance from offices of economic promotion.

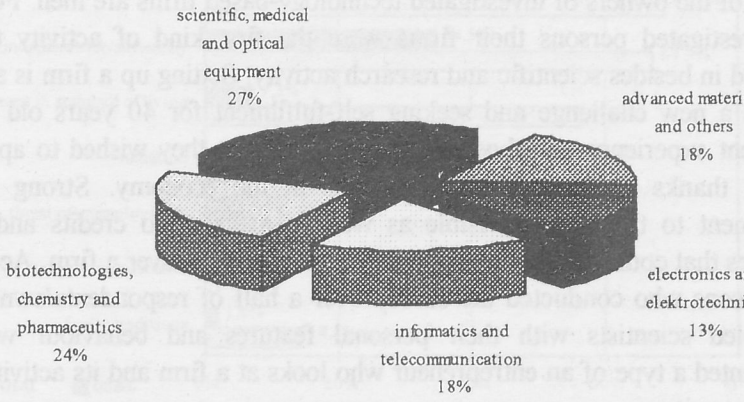
According to experts' estimation at present there act about 600-700 technology-oriented firms in Poland. They are mainly spin-off firms. In most cases their founders are employees of high technical schools, R&D institutions, R&D departments of large companies as well as individual inventors. Technology-based firms (85%) are located in large agglomerations that cover cities with their closest surrounding (above 500 thousand inhabitants). These areas are characterised by existence of high schools, R&D institutions and large enterprises with their own development departments. Moreover, agglomerations have better developed business infrastructure and larger resources of highly qualified labour compared to suburban areas.

The most popular legal form of technology-based firms is limited liability company (54.5%), then small partnerships (23.7%) and one-person firms (18.2%). Very rarely technology-based firms have a legal status of joint stock company. Firms that are owned by many persons prevail and the average number of owners amounts to 2.8 persons. Every fourth firm (23.8%) has a single owner. **However, as opposed to the total SME sector, investigated technology based firms are not "family firms".** This case occurs only in 21.8% of the firms while in manufacturing SMEs the share of family firms is significantly higher and exceeds 65%[5].

Analysis of investigated firms' subject of activity shows that they operate in high technology sectors.

[5]B. Piasecki, A. Rogut, D. Smallbone., *Mocne i słabe strony małych i średnich przedsiębiorstw produkcyjnych w Polsce w 1995 roku oraz rekomendacje dla polityki*, USAID, GEMINI-PEDS Project, Łódź, Londyn 1996, s.

Chart 1. Investigated firms' domains of activity




Average age of technology-based firms is not high and in December 1996 amounted to 5.3 year. Over a half (50.9%) of the firms came into being in the period 1992-1995 while in the years 1988-1991 38.2% of the firms originated. The lowest number of firms originated before 1988 (10.1%)[6]. Results of empirical research show that the basic development of technological entrepreneurship took place in the years 1991-1995 (when 63.6% of the firms were founded), after the first period of intensive and decisive economic transformations. One can observe that acceleration of development of technological entrepreneurship in Poland is delayed in comparison with development of the whole SME sector which dynamics of development was the highest in the years 1988-1991. **Rather low number of technology-based firms until now as well as observed increase in the number of this type of firms in the first half of the 90s indicate that technological entrepreneurship in Poland is only at its initial stage of development and a period of "explosion of technological entrepreneurship" is still before us.**

[6] Researchers adopted a division of firms into three groups according to age, using a typology proposed by B. Piasecki and A. Rogut who divide development of the SME sector in Poland in recent years into three stages:

- initial phase of entrepreneurship (1981-1987),
- period of explosion of entrepreneurship (1988-1991)
- slow down in the speed of entrepreneurship in the SME sector - the period of market self-regulation (after 1991);

see 32. B. Piasecki., *Przedsiębiorczość i mała firma. Teoria i praktyka*, UŁ, Łódź 1997, s. 122.

### 3. Owner of a Technology-Based Firm

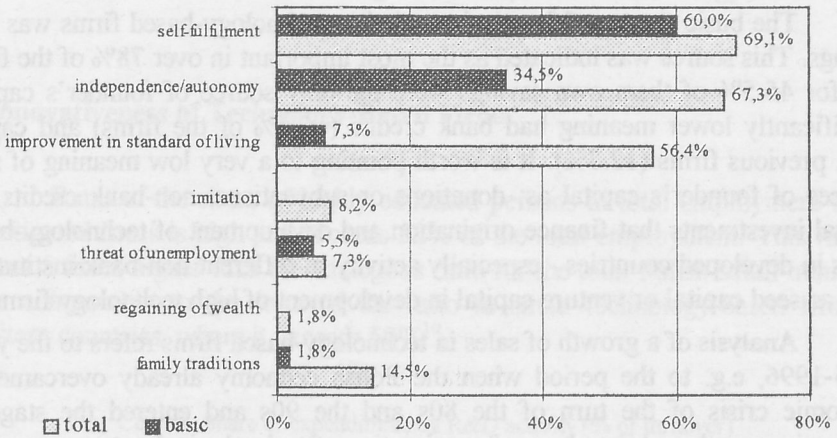
90.9% of the owners of investigated technology-based firms are men. For most of the investigated persons their firms were the first kind of activity they were involved in besides scientific and research activity. Setting up a firm is an attempt to take a new challenge and seeking self-fulfilment for 40 years old men with sufficient experience and theoretical knowledge that they wished to apply in the market thanks to transformation process in the economy. Strong emotional attachment to the firm is visible as well as aversion to credits and strategic alliances that could cause a danger of the loss of control over a firm. According to the persons who conducted the survey over a half of respondents/owners (59%) resembled scientists with their personal features and behaviour while 41% represented a type of an entrepreneur who looks at a firm and its activity through a market prism.

Almost 2/3 of the owners posses specific professional base described as scientific-research experiences which indicates that the owners of investigated firms dealt with scientific-research activity and took part in R&D works in their previous workplaces. When a specific experience in a field of management is considered, about 13% of the owners pointed to skills in the range of: sales/marketing, company finance and economic law. **Among spin-off firms prevail firms "coming" from high schools - 43.7%, then 23.6% from research institutions and another 23.6% from research, development and technical departments of large enterprises.**

The main causes that incline people to set up their own firm were: self-fulfilment, independence and autonomy as well as possibility of earning higher incomes.

Over a half of the investigated owners indicated mentioned motives. Far less percentage of the firms pointed to: family traditions, imitation of other entrepreneurs' activities or threat of unemployment. It is worth noting, however, that the most important motive that push people to start their own business in the area of advanced technologies was self-fulfilment (60% of the firms evaluated this motive as the most important). Far lower range in the hierarchy of importance was given to independence and autonomy (slightly above 1/3 of the firms).

Chart 2. Motives of firm's foundation




* - valuation of particular features was conducted according to 1-7 scale. Mark "1" means lack of a given feature while mark "7" means full use of a given feature. The basic meaning of a given feature covers marks from "5" to" "7" while "total positive marks" all marks from "2" to "7"[7].

Interesting information may be received from the analysis of distribution of answers referring to causes of founding a firm with regard to the period of its foundation. For the persons who founded their own firms before the beginning of economic transformation (the years 1981-1987) and during its initial stage (1988-1991) the basic meaning had aspiration for self-fulfilment and for satisfaction of their creative needs (over 80% of the firms) as well as aspiration for independence (over 70% of the firms). In the next period (1992-1995), in which one can observe the acceleration of technology-oriented firms' originating, the main equivalent motives were aspiration for independence as well as for improvement in standard of living and for self-fulfilment (over 60% of the firms). Far more meaning of "higher income" motive occurred mainly in firms founded by persons employed previously in R&D institutions in the industry (70% of the firms). Compared to firms that originated earlier, far more meaning had also imitation of other entrepreneurs (29% of the firms) and - as a new thing - threat of unemployment (11%). The last motive was indicated by respondents working previously in R&D institutions and in enterprises.

[7] This comment refers to all next charts according to respondents/owners valuations.

## 4. Financing and Economic Situation

The basic source of founder's capital in technology-based firms was own savings. This source was indicated as the most important in over 78% of the firms and for 45.5% of them own savings were the only source of founder's capital. Significantly lower meaning had bank credits (16.4% of the firms) and capital from previous firms (12.7%). It is worth pointing to a very low meaning of such sources of founder's capital as: donations or subventions, non-bank credits and capital investments that finance origination and development of technology-based firms in developed countries - especially activity of different non-bank institutions such as seed capital or venture capital in development of high technology firms.[8]

Analysis of a growth of sales in technology-based firms refers to the years 1995-1996, e.g. to the period when the Polish economy already overcame the economic crisis of the turn of the 80s and the 90s and entered the stage of economic growth and the phase of acceleration of technological entrepreneurship. In this period most of the investigated firms (91.3%) recorded a real growth of sales compared to the level of 1994. The average growth of real sales (for growing firms) was very high and amounted to 87%. However, a very wide range of the growth of sales can be observed: from 5% to 260%. External determinants of the growth of sales resulted from differences existing in particular sectors. It seems that the most suitable conditions for the growth of sales occurred in the sectors of biotechnology, chemistry and pharmaceutics (growth by 120%) as well as in informatics and telecommunication (increase by 103%). On the other hand, the lowest growth occurred in firms operating in the sectors of electronics and electrotechnics (growth by 53%).

The most important source of financing the investment activity in the investigated firms is their own profit. Almost 75% of the firms used this source and for about 30% of them it was the only source of investments' financing. Average share of investments financed by profit amounted to 53.9% of the total investments in investigated firms. The second most important source of the investments' financing are own savings what would mean that technology-based firms are partly financed by their owners. This source of financing was used in 15.5% of the firms and in 9.1% of cases it was the only source of financing the investments. Less important were borrowings or bank credits as well as leasing or

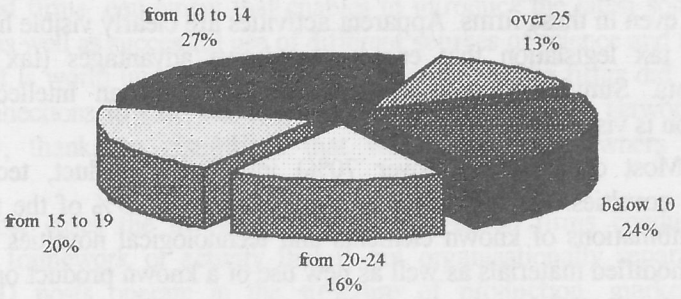
[8] Dunkelberg W. C., Cooper A. C., *Investment and Capital in the Small Enterprise*, w: *The Economics of Small Firms.The European Challenge*, op.cit., s. 120-121, Mason C., Harrison R., *The Role of Informal and Formal Sources of Venture Capital in the Financing of Technology-Based SMEs in the United Kingdom*, w: *New Technology-Based Firms in the 1990s*, op.cit., s. 106-110.

purchase in instalment system. It is worth pointing to rather low share of capital investments as the source of financing the development of technology-based firms.

## 5. Innovativeness of Technology-Based Firms

Ratio of the share of highly educated persons in total employment in the investigated firms is high and exceeds 52% of the total employment. This ratio is almost 5 times higher than the analogous ratio for the total Polish small industry.[9] It is comparable to the level of the ratio in small technology-based firms in Western countries, where it exceeds 50%[10].

Chart 3. Share of expenditures on R&D activity (% of turnover)




Share of R&D expenditures, including research, design, laboratory, construction etc. works is also high. Average share of this kind of expenditures in turnover in the investigated firms amounts to 17.2%, while the mean amounts to 13%. In the investigated sample there prevail firms in which the share of R&D expenditures in total turnover oscillates between 10% and 14%, then firms with the share below 10% and between 15% and 19%. There are 13% of the firms with the highest share of such expenditures (over 25%) – chart 3.

[9] *Stan sektora* ..., op.cit., 22, see also The Statistical Yearbook.

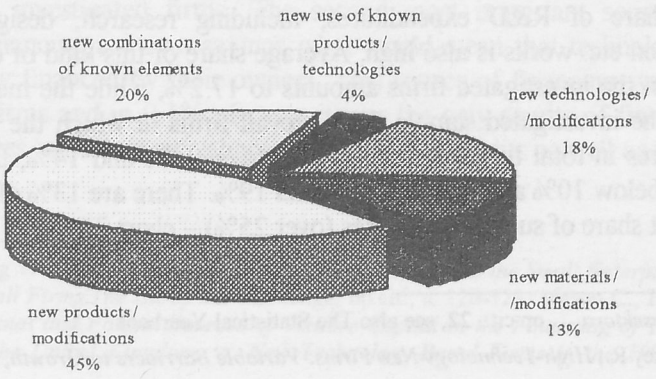
[10] Oakey R., *High-Technology New Firms: Variable Barrioers to Growth*, PCP, London 1995, s. 77.

Level of the ratio of R&D expenditures share in turnover in a case of technology-based firms is negatively correlated with the size of the firms. In micro-firms (1-5 employees) this ratio amounts to **22%**, while in the firms with employment of 6-20 persons exceeds **17%** and in firms employing 21-100 persons it amounts only to **12.4%.** It seems that the larger and older is the firm, the less dynamic and less innovative it is. In this aspect the most innovative (research-consuming) are the firms founded by owners "coming" from high schools (22%), with academic education (18.2%) and scientific-research experience (20%).

All the investigated firms used 174 technical solutions what means that statistically each investigated firm has at its disposal 3.2 technological innovations. The analysed enterprises own 51 patents and 9 licenses. Most of the firms possess innovations (2-3 on an average) that should be subject to legal protection however, they do not embark upon the prescribed procedures in this field. There are the following reasons of this state of affairs: too long preparatory period and complicated procedures, as well as unfamiliarity with the patent legislation and high costs of the patent protection. At the same time in a few firms we met such patent protection which it would be difficult to consider as new solution even in these firms. Apparent activities are clearly visible here, due to the existing tax legislation that enables to derive advantages (tax reliefs) from copyrights. Simultaneously, the lack of interest in an intellectual property protection is visible.

Most of the firms (over 70%) introduced product, technological or material novelties. Product novelties predominate - 45.5% of the firms, then go new combinations of known elements and technological novelties. The share of new of modified materials as well as new use of a known product or technology is rather low – chart 4.

Chart 4. Structure of innovative activity in the investigated firms in the years 1993-1996



In the years 1993-1996 the investigated technology-based firms were characterised by high intensity of changes. Over 70% of the firms introduced systematically novelties into the product structure, technologies or materials. Remaining 30% of the firms introduced novelties sporadically, according to their needs, with different intensity.

Level of novelty of products, used technologies and materials was evaluated according to domestic and foreign scale. According to the owners' self-evaluation the investigated technology-based firms are characterised by high level of modernity. The results of evaluation were as follows: for nearly 2/3 of the firms the level of their modernity is comparable or even higher than in foreign firms and over 7% constitute novelty on the world-wide scale. Over 1/3 of the used solutions were acknowledged as novelties in the domestic scale.

Nearly all the investigated firms (96.4%) use internal computer networks in the areas of production, design, sales, etc. Lower, although still very high (67.3%) is the share of the firms that have access to external networks (for example internet, e-mail). This situation betokens a high degree of modernity of the investigated firms' equipment that enables to introduce the latest solutions in management as well as successful use of different sources of science and technical information. It is worth underlying, however, that most of the firms did not have their own connections to external networks and they used these networks in an informal way, thanks to institutions that were the firms' owners previous workplaces.

In most cases the investigated technology-based firms conduct R&D works in the framework of activity that is not organisationally separated (for example R&D posts operate in the structure of production, marketing etc. departments). This concerns about 75% of the investigated firms. In 25% of the investigated firms R&D works were conducted in a form of organisationally separated departments of designing, technology, research etc.

## 6. Needs in the Field of Support of Technology-Based Firms' Development

### 6.1. Financial support of product or technology development

Results of previous analysis show that the investigated technology-based firms are characterised by high activity in product and technology management. Gross of innovations were introduced thanks to own ideas and resources - human, technical

and organisational. Also financing of innovations was based mainly on own resources.

Interest in gaining new capital for development of new products and technologies is very high amongst investigated firms. Nearly 90% of the firms answered positively to the question concerning interest in new capital for development, while 60% of the firms were very interested in the question. This mainly refers to the larger firms that owners come from R&D departments of large enterprises as well as industrial R&D institutions and posses technical experiences. However, percentage of the firms that are ready to consider the possibility of external financial support is significantly lower - this refers to about 70% of the investigated firms while 40% of them treat the question very positively. It seems that this attitude results partly from a threat of losing control over the firm. This threat can be the main obstacle in the process of co-operation between technology-based firms and venture capital institutions that offer financial support mainly in the form of direct capital investments in the firms. The highest interest in using the external sources of capital can be observed in larger firms and these founded in the 90s.

About 70% of the investigated firms are inclined to consider the possibility of taking credit from a bank or other institution. About half of the firms consider the possibility of taking credits from domestic banks, while 25% from foreign banks. Significant percentage of the firms (27%) thinks about the possibility of applying for borrowings from non-bank institutions. The highest interest in taking credits is amongst larger and older firms.

Amongst the main reasons of aversion to bank or non-bank credits in the investigated firms are insufficient guarantees in relation to this demanded by banks (58.2%) as well as too high interest rate (56.4%). Some meaning has also a threat of credit debt - it is significant obstacle for 20% of the firms.

### 6.2. Non-financial sources of business support (consulting, schooling, information)

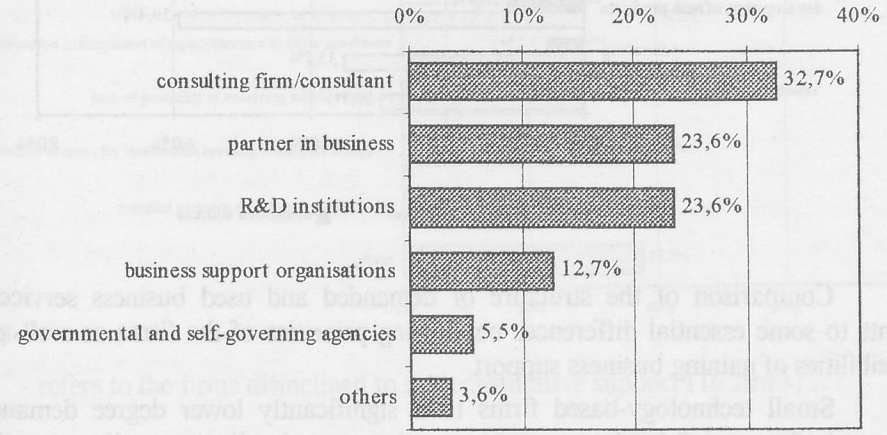
Investigated firms received business support (paid or free of charge) in any form of advice or consultation mainly from the firms or persons dealing with consulting - 60% of the firms profited by services rendered mainly in the area of accountancy, law and organisational-technical issues. Important sources of business support for technology-based firms were also: partner in business (43.6%), R&D institutions (38.2%), and business support organisations (23.7% of the firms). Marginal role in such support was played by governmental and self-

governing agencies supporting development of the firms, including institutions that support entrepreneurship and technology transfer (7.3% of the firms).

Non-financial business support did not meet with approbation of the investigated firms. Only for 1/3 of them business support received from private consultants had the basic meaning for managing the firm.

Over 2/3 of the investigated firms profited by business support in the years 1994-1996. (chart 5) Results of the analysis of the structure of particular areas of activity that received this support show that it referred mainly to development of technological (75.5%) and product (59.4%) innovations, so to the areas that are the most important for the development of technology-based firms. Over a half of the firms (59.4%) received support in the area of financial management of the firm, e.g. accountancy, financial planning, seeking the sources of financing, working out a business plan etc. Significant meaning had support in marketing activities (48.6% of the firms) concerning looking for customers of products/services, promotion and distribution. Most of rendered services were paid - 58.2% of the firms.

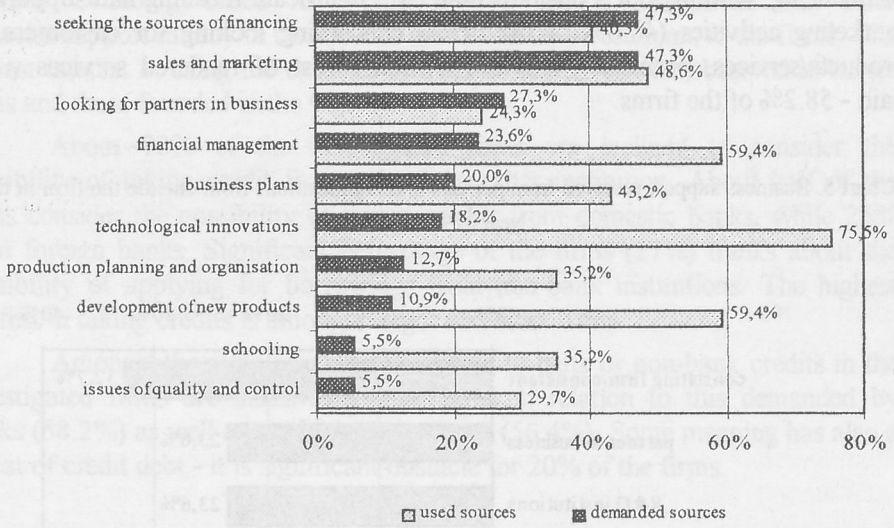
Chart 5. Business support received from persons and organisations from outside the firm in the years 1994-1996




Evaluation of a degree of satisfaction of owners' demands by existing forms of business services was conducted on the base of answers to questions concerning these fields of firms' activity in which external support would be the most demanded. In 1996 over 70% of the investigated firms were looking for business support, from which 30.9% acknowledged this kind of support as very desirable. Most of the firms' owners pointed to at least one area of the firms'

activity in which such support would be very helpful. According to data from chart 6, the most demanded areas of support for technology-based firms were as follows: seeking the sources of financing (47.3% of the firms) and sales and marketing (also 47.3%). Support concerning looking for partners in business was also desirable (27.3% of the firms). At the same time these areas point to priorities of development in the investigated firms. Remaining areas of firms' activity were of less importance from the viewpoint of demand for external business support.

Chart 6. Basic kinds of support demanded (expected) in 1997 and gained in the years 1994-1996



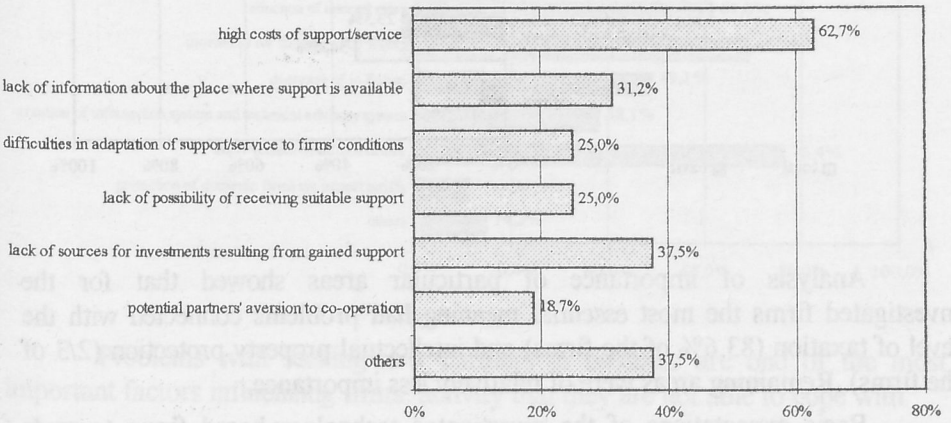

Comparison of the structure of demanded and used business services points to some essential differences concerning priorities of the firms as well as possibilities of gaining business support.

Small technology-based firms to a significantly lower degree demand support in the area of development of innovativeness, schooling or quality control. On the other hand, they need support in finance, sales or seeking partners in business. In 1997 a part of the investigated technology-based firms did not look for any external business support at all. Amongst the main reasons of aversion to external business support all the investigated firms underlined too high costs of such support while over half of them pointed to lack of financial sources for investments resulting from this support. – chart 7.

There are also other causes of mentioned aversion: lack of information where such support is available. lack of support that would be adjusted to firms' specific needs as well as difficulties with its adaptation to conditions in which firms operate. This can indicate poor knowledge concerning the market of business support amongst small technology-based firms as well as poor activity of different kinds of institutions that are to support small firms' activities.

This state of affairs is confirmed by evaluations of usefulness of different entrepreneurship support and technology transfer institutions made by the owners of investigated firms. Generally mentioned institutions were evaluated as not very helpful for present activity of technology-based firms both as a source of information on development of innovations, source of financing the development activity and source of business support. Significant part of small technology-based firms posses sufficient knowledge about existing in Poland institutions that are to support entrepreneurship and technology transfer. This refers mainly to local or regional institutions.

Chart 7. Causes of aversion to use consultative support in the investigated firms



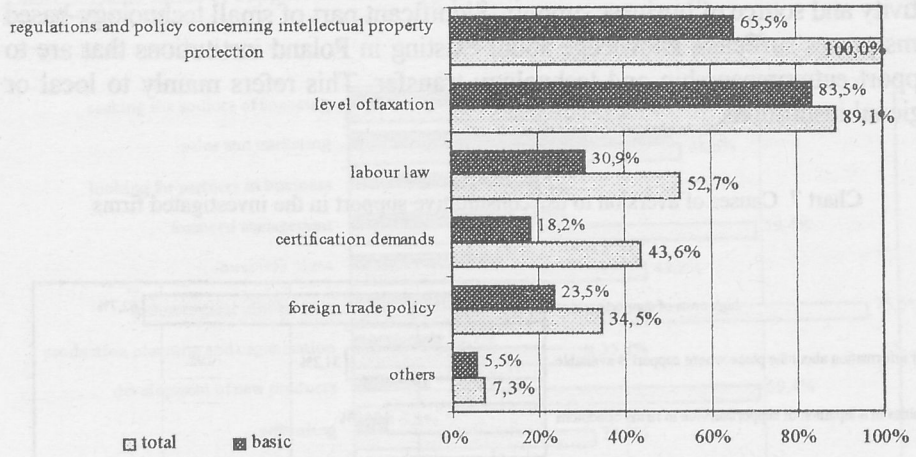

* - refers to the firms disinclined to use consultative support (16 firms)

## 6.3. Expectations towards governmental and regional policy

Governmental policy was the third most important barrier of development of the investigated technology-based firms (60%). For 45% of the firms the policy of the central or local authorities causes important obstacles for their operations.

Amongst the basic areas influenced by governmental policy or governmental regulations that constitute barriers for development were, according to the investigated firms, issues connected with technical progress, science and inventiveness (they were important for all investigated firms and very important for 2/3 of them) as well as with economic policy (taxes, customs and foreign currency policy). Issues concerning production and product certification, as well as labour law were also acknowledged as essential. (chart 8)

Chart 8. Main areas of governmental policy or regulations causing problems for the investigated firms




Analysis of importance of particular areas showed that for the investigated firms the most essential meaning had problems connected with the level of taxation (83.6% of the firms) and intellectual property protection (2/3 of the firms). Remaining areas were of relatively less importance.

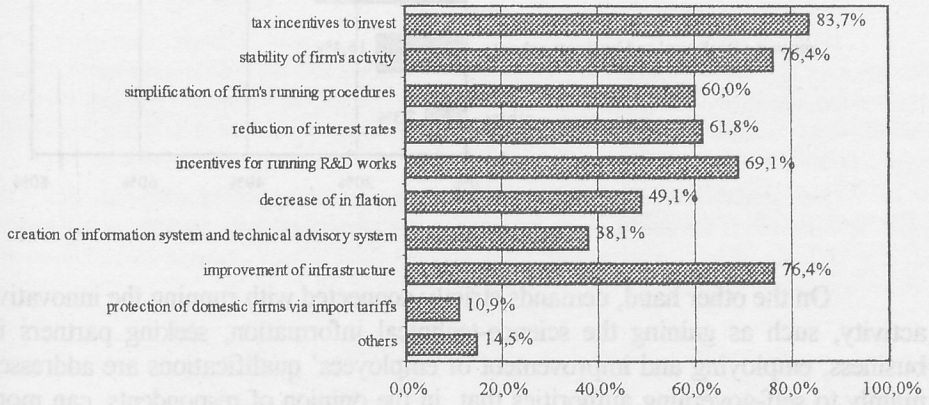
Basic expectations of the investigated technology-based firms towards governmental policy in 1997 were connected most of all with the rules of running the economic activity (rules of setting up, stability of the firms etc.) as well as with investment and development activity -over 80% of the firms formulated postulates referring to these areas. Relatively less important was information and advisory activity in the field of technology and science as well as improvement of infrastructure – chart 9.

In a case of the investigated technology-based firms' expectations towards local authorities there predominated problems connected with the firms' environment: support of development of interregional and international contacts,

improvement of local infrastructure as well as support of development of innovations and entrepreneurship centres. Chart 9 shows that in the opinion of 60% - 70% of the investigated firms they are the most important undertakings that fall within local authorities cognisance and could be helpful for the firms. Local schooling programs, development of the educational system and business services is of less importance.

It is worth pointing out that small technology-based firms expect from local authorities higher activity in support of seeking partners in business as well as in development of local institutional infrastructure that supports entrepreneurship and technology transfer.

Chart 9. Necessary activities in governmental policy from the viewpoint of investigated firms in 1997

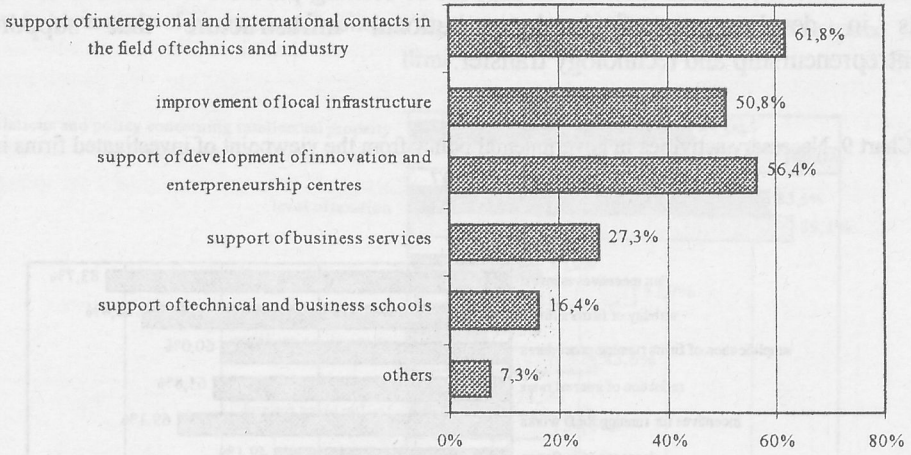



Problems with seeking new partners in business are one of the most important factors influencing firms' activity that they are not able to cope with. Insufficient business support in this area from different external institutions inclines firms to formulate demands towards local authorities. Certainly in the opinion of investigated technology-based firms development of local institutional infrastructure that supports entrepreneurship and technology transfer should also help the firms to cope with the problems of seeking partners in business.

Comparison of expectations towards central and local authorities points to some differences: postulates towards central authorities put pressure on conditions of firms' activity, including their development activity, while expectations towards self-governing authorities refer mainly to firms' environment.

Central authorities are expected to create conditions for stability of the firms' operations, especially their financial standing which is the main barrier of development investments. They are also expected to enable the small technology-based firms to protect their intellectual property.

Chart 10. Necessary activities in local authorities policy from the viewpoint of investigated firms




On the other hand, demands strictly connected with running the innovative activity, such as gaining the science-technical information, seeking partners in business, employing and improvement of employees' qualifications are addressed mainly to self-governing authorities that, in the opinion of respondents, can more effectively support the small technology-based firms.

## CONCLUSIONS

In the contemporary world economy an ability to introduce innovations becomes more and more important. An entrepreneur perceiving a new product or technology as his chance for entering the market is more inclined to take risk than large, well established corporations. The process of innovations' implementation in small firms is not hampered by bureaucracy and standard procedures of activity. In the USA and other highly developed countries the strength and peculiar possibilities of small firms in the realisation of innovative processes were

re-discovered over ten years ago. A lot of activities were started to reduce barriers of innovation absorption, especially these concerning information and financial issues. At present Poland and other CEE countries face this challenge. In a framework of conducted systemic transformation activities in the following areas should be undertaken:

1. Improvement of the entrepreneurship climate and motivation for setting up new economic entities
2. Creation of regional innovation systems, improvement of co-operation between scientific institutions and small firms
3. Introduction of a system of tax and procedural preferences for small and medium-sized firms
4. Initiation of co-operation
5. Facilitation of access to information and venture capital.