

Innovation in Viennese SMEs and Potential Consequences for Public Policy

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Introduction

Small and medium-sized companies are important players in Austria and the city of Vienna with regard to economic growth and labour markets. Not only do they constitute the vast majority of companies as such and provide the lion's share of jobs but they also have a pronounced ability to transfer scientific-technological progress into marketable products and services. Many SMEs can be characterised as being exceptionally open to new technologies – both as a general openness and a strategic orientation – not only in so-called high technologies but also in sectors of the so-called medium and even low technologies.

Against this background, the paper at hand analyses the attitudes of Viennese SMEs towards innovation, whether or not they are actually innovative (and to what extent), and the rationales and motivations behind their innovative behaviour. Furthermore, the innovative performance will be discussed with regard to cooperation patterns, obstacles for innovations, and the demand for public support of innovation (and the usage of the support already available).

One of the main foci of the underlying research project was the consideration of those SMEs that usually are not – or not fully – covered by surveys related to innovation issues, e.g. companies with less than 10 employees and SMEs in traditional sectors, which normally are not among those labelled “innovative”. Therefore, an innovation definition has been applied that allows covering innovations beyond the rather conventional technological innovations in new products/services (based on the so-called Oslo-Manual). Such innovations refer to new designs, marketing methodologies and organisational/management innovations. Moreover, the study distinguishes the development and the adoption/implementation of innovations but queries both in order to be able to cover innovation processes triggered e.g. by the purchasing of innovative equipment.

The analyses are based on the results of an online survey among 21.000 Viennese SMEs with a response rate of approx. 5% or 945 completed questionnaires. The information has been weighted according to the distribution of size ranges and economic sectors in the corporate population of all Viennese companies to assure representativeness of the results.

Results

When analysing the innovative behaviour in less innovative sectors and among very small enterprises (including companies with no employees apart from the entrepreneur) one cannot assume that innovation is something of interest and therefore, something that entrepreneurs and companies keep in mind. Therefore, a first step into the analysis of innovative behaviour is the question about the more general attitudes towards innovation, the question if innovation is something that only regards “the

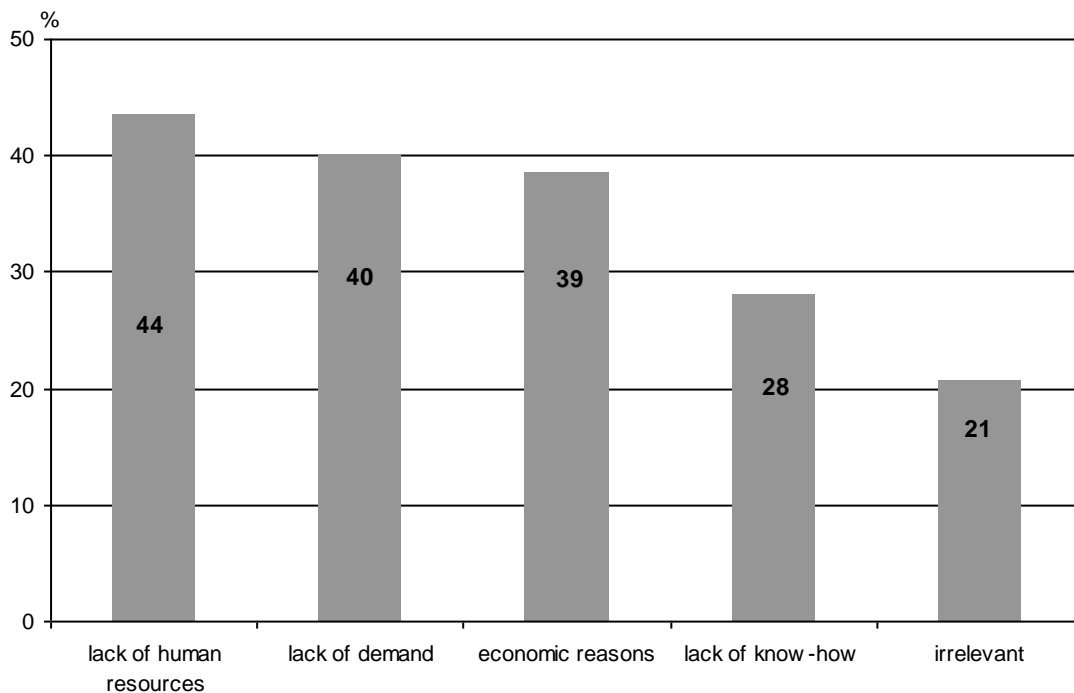
others". In general, Viennese SMEs show a positive attitude towards innovation. They acknowledge the importance of being (permanently) innovative and using state-of-the-art technologies for the sake of their own competitiveness at large. However, this positive attitude somewhat weakens the more concrete it is related to the actual and individual opportunities to innovate, i.e. the readiness to be innovative is less pronounced. In addition, a small yet significantly large share (approx. one third) of Viennese SMEs considers innovations as relevant to only some parts of the economy and more than 70 % even think of innovations as being overrated in principle. However, many of the companies that agree to such statements are innovative, which could indicate e.g. a general exhaustion regarding the issue of innovation and the weight that is attached to it in public debates (qualitative statements collected during the research suggest that in some cases). Beyond that, the companies are very aware of innovations outside the more narrow definition such as product or process innovation. A majority agrees to the statement that innovations in design, organisation, pricing or marketing are of special relevance for small and medium-sized businesses. Attitudes towards innovation in general and for the company itself improve with growing size of the companies both in number of employees and annual turnover.

Altogether, 60 % of Viennese SMEs innovated in the period 2006-2008 in the wider sense used for the study at hand (i.e. including innovations in design, marketing, organisation etc.) or implemented such an innovation (e.g. by purchasing it). The share of innovative companies increases with an increasing size of companies both in number of employees and turn-over with the larger leap from very small enterprises to companies with 10-49 employees. This is also reflected by the distribution of innovative companies among the different sectors, which are not only characterised by differing degrees of innovativeness (predominantly due to their "proximity" to innovative technologies) but also by varying average company sizes. More than one third of these innovative enterprises is permanently involved in innovation processes while another 50 % innovate (or implement innovations) regularly. The frequency of innovation processes is also increasing the larger the companies are.

The main reasons for not being innovative – even according to the wider definition of innovation applied here – lie in a mixture of internal and external factors that are predominantly linked to limited resources, a missing demand for innovative products/services on the customers' side or a missing innovation "push" from suppliers. Only 21 % of the non-innovative companies consider innovations as being generally irrelevant (see figure 1).

The development and implementation/purchase of innovations is triggered and driven by a set of different motivations that are directed both inwards and outwards. While developing innovations is rather linked to outward motivations such as market shares, competitors and competition in general, implementing or purchasing innovations is slightly stronger directed inwards in terms of e.g. the relevance of innovations for the improvement of products and services offered ranking higher among the latter. However, innovations' effects on competitiveness and turn-over are the most important motivations for all companies.

Figure 1 - Motives for not being innovative



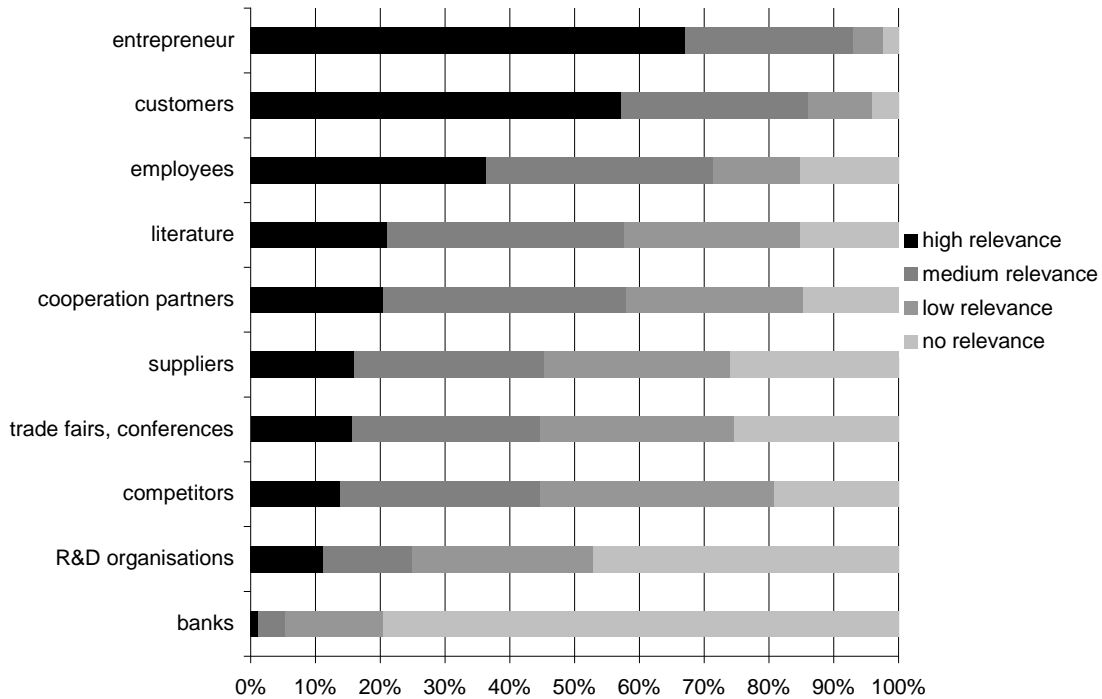
Source: Austrian Institute for SME Research, 2010.

As for the impulse that needs to be generated to implement innovation processes the analyses proved that there is a mixture of external and internal sources equally important. However, the person (and hence, the personality) of the entrepreneur is standing out, especially for companies with less than 10 employees. Other important impulse generating sources are customers and employees of the company. For the group of companies investigated, which also include a significant share of companies from more traditional and less innovative sectors, it is not a surprising result but put into the context of the general idea of how important universities or research organisations are for generating ideas and therefore, impulses for innovation processes the result that they have only a minor impact if at all is nevertheless interesting (see figure 2). All the more, since suppliers – that have been identified by scientific research as potentially important factors in innovations processes – also do not have real impact on this kind of companies.

With regard to the issue of which kind of innovations are predominantly developed by Viennese SMEs the “classic” product and service innovations rank first, followed by innovations in design, in marketing and in organisation. Process innovations are by far the least relevant. It becomes evident that companies in general develop innovations of all types much more frequently than implementing or purchasing them. Furthermore, only a very small percentage of Viennese SMEs is concentrating their innovation activities on one type of innovation. As a general rule, product, service and process innovations on the one hand and design, marketing and organisational innovations on the other are developed complementary by the same companies. One interesting finding is that a decreasing frequency of developing product, service or process innovations goes along with a decreasing relevance of implementation/purchase for such innovations while a contrary effect can be found for organisation, design and marketing innovations where the results indicate that purchasing of innovations developed by others could serve as a compensatory strategy for the development. A possible explanation for that

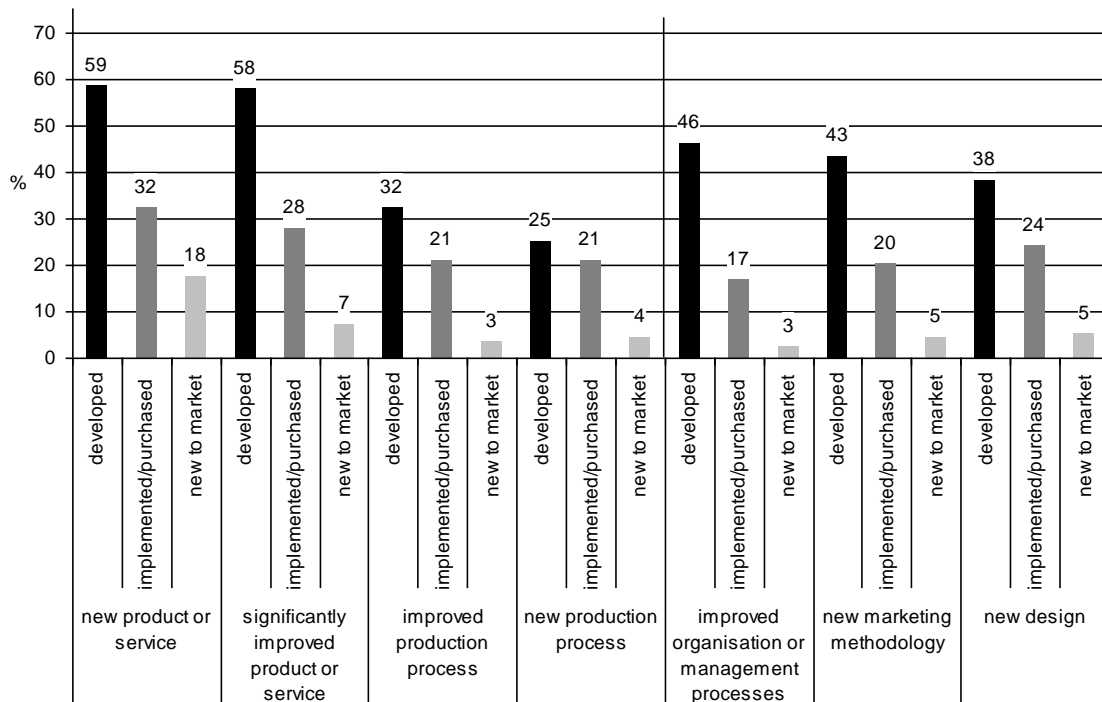
could be that the latter generally are more universally applicable. There is also a clear effect of company size; the larger the companies the larger the share of companies that develop product or service innovations (compared to implementation).

Figure 2 - Sources of innovation impulses



Source: Austrian Institute for SME Research, 2010.

Figure 3 - Types of innovations developed and implemented/purchased



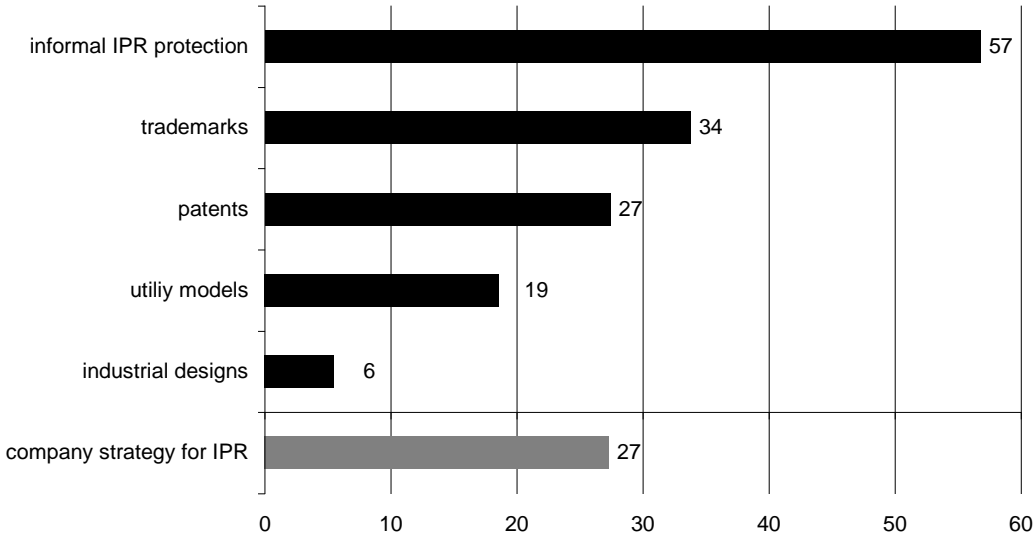
Source: Austrian Institute for SME Research, 2010.

With regard to the degree of innovativeness of the Viennese SMEs it can be stated that an overwhelming majority does not develop new-to-market products, services, etc., which is an expected result (see figure 3). However, the share of companies that consider their innovations as being new to the market should not be overlooked even though this classification is based on a self-assessment and therefore, does not substitute a case-by-case analysis based on e.g. patent data. A similar size effect as it has been identified for the analysis of the type of innovation can be observed for the issue of whether or not such an innovation is an actual new product or service etc. for the market: larger SMEs are more likely to develop innovations new to the market..

Innovations, irregardless of the question if they were developed or implemented/ purchased, have a positive effect on turnover and employment; innovative Viennese SMEs are more dynamic in that regard than non-innovative companies. Furthermore, the frequency of innovations processes is strengthening this effect, i.e. the higher the frequency the larger the share of SMEs with a positive development of employment and turnover. On average, innovative companies show a more positive development as non-innovative ones and among the former those that innovate permanently outperform those that do so only infrequently.

The corporate protection of intellectual property rights and the protection of innovations are highly relevant for Viennese SMEs in general and as a part of already existing corporate strategies. Approximately half of the small and medium-sized companies in Vienna used different instruments for protecting their intellectual property rights in the period 2006-2008 (see figure 4). However, most of these instruments remain on a purely informal level; patents and trademarks have been much less frequently applied. This does not only refer to small and medium-sized companies experiencing a set of difficulties with regard to IPR (such as the comparably high costs and information needs) but beyond that it also refers to a lack of awareness.

Figure 4 - Relevance of IPR protection

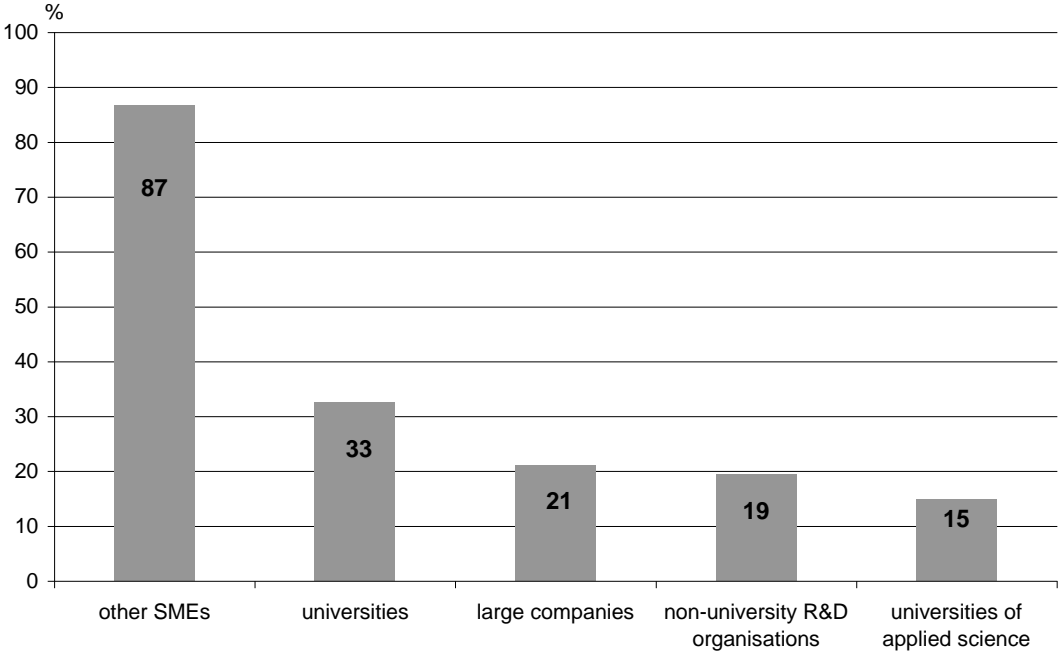


Source: Austrian Institute for SME Research, 2010.

Many innovative Viennese SMEs provide qualification and training measures for their employees frequently or even regularly. However, the results of this study indicate that the trainings are not necessarily provided as part of a corporate innovation strategy but rather as reactions to changes in the day-to-day business.

As SMEs face several obstacles with regard to innovation and being innovative due to their limited resources, innovation cooperation with other organisations becomes crucial for three main reasons: to generate knowledge and ideas leading to innovation, to minimise the technological and economic risk by sharing it and to create critical mass of personal, knowledge and time resources to perform innovation projects. Against this backdrop, it is somewhat surprising that only 50 % of the innovative SMEs in Vienna access cooperation for their innovative activities. While the most important cooperation partners are other SMEs, the cooperation with universities of applied science (Fachhochschulen) and non-university research organisations is very rare among Viennese small and medium-sized enterprises (see figure 5). This cooperation pattern bears a certain risk since innovations and their sometimes disruptive nature often require external and “fresh” perspectives. Predominantly cooperating with other companies does not only prevent access to knowledge that could be of interest but it also tends to innovation processes becoming some sort of “closed shop”. However, it also has to be mentioned that a surprisingly large share (one third of the companies) are cooperating with universities. While seen for itself this result is positive it sheds an even more pessimistic light on the role of universities of applied science, which are supposed to cooperate especially with SMEs because universities are often seen as less accessible for SMEs.

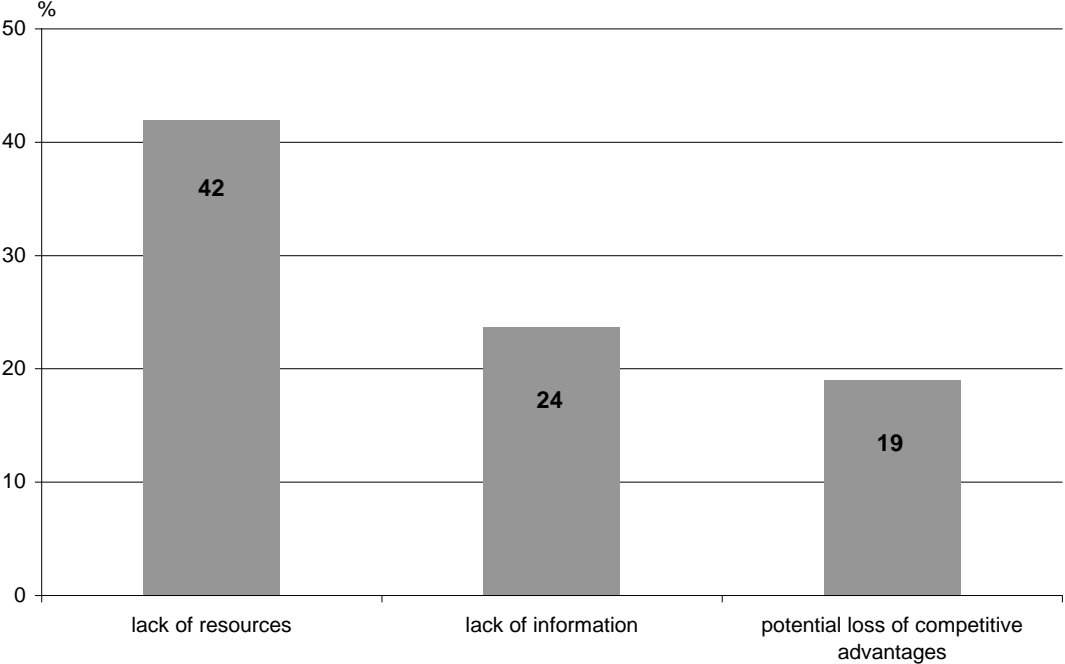
Figure 5 - Cooperation partners



Source: Austrian Institute for SME Research, 2010.

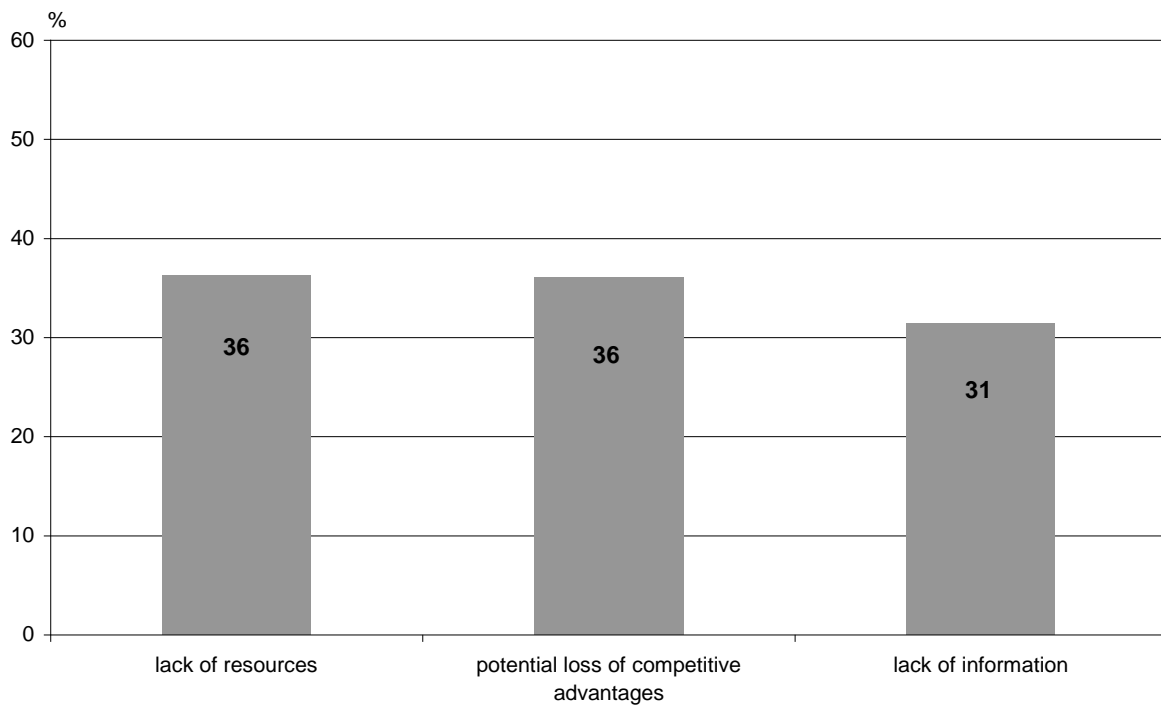
The companies' own lack of resources and information needed for cooperation create the biggest problem or obstacle for innovative SMEs and their innovation cooperation. Another issue that should not be underestimated is the threat of losing competitive (See figure 6) advantages due to disclosure of technologies, innovations etc. that comes with cooperation, which is especially problematic for companies with medium to low experience in innovation cooperation. The differentiation between innovative SMEs that cooperate and those which do not shows a slightly different ranking (see figures 6 and 7). In sum, the results indicate that although both groups share more or less the same problems, non-cooperative SMEs tend to slightly overrate the individual effects of each potential problem, which ultimately leads to the conclusion that apart from decreasing the companies' potential cooperation tradeoffs they possibly just need to be encouraged and supported in actively pursuing cooperation, therefore improving the SMEs assessment of innovation cooperation by increased experience. However, it is seems surprising that companies that are actually cooperating in innovation projects assess the issue of resources as even more critical than those companies that do not cooperate.

Figure 6 - Cooperation problems of cooperating innovative SMEs



Source: Austrian Institute for SME Research, 2010.

Figure 7 - Cooperation obstacles for non-cooperative innovative SMEs

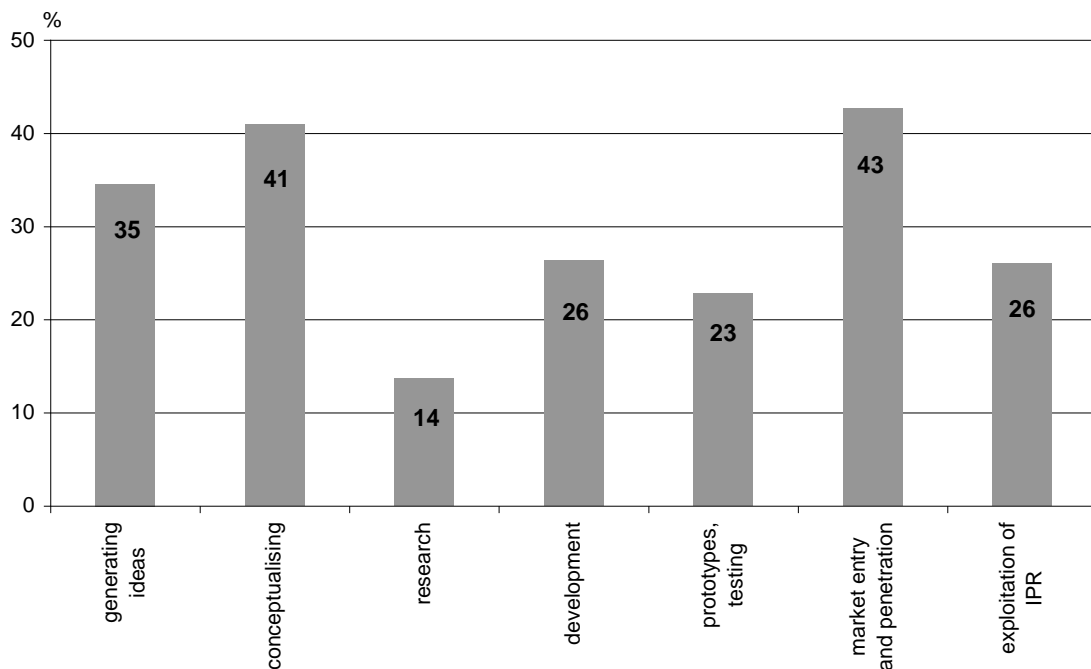


Source: Austrian Institute for SME Research, 2010.

The most important obstacle for innovation activities is risk in general and financial or economic risk especially; technological risk is not, indicating that small and medium enterprises can very well handle the risks inherent in innovation but can fail (and actually fear to fail) due to the insufficient financial and economic security. Non-innovative companies however, do not only ascribe different hampering factors a higher importance on average but emphasise especially their lack of the technological information and knowledge that prepares the ground for innovative activities. The latter indicates a strong leverage that could be achieved by intensifying and multiplying cooperation, especially outside the “usual suspects”.

Due to the aforementioned issues and the general lack of resources to innovate (compared with larger companies) SMEs do partially rely on public support for their innovation activities. For Viennese small and medium-sized enterprises this demand is most pronounced in the beginning and the end of the innovation process, i.e. the development of ideas, conceptualising and planning of innovation projects on the one hand and the marketing of innovation on the other. This is somewhat surprising since SMEs that conduct *research* rather emphasise their need for support in the core stages of the innovation process. However, this could be linked to the fact that the latter are more experienced in handling support measures and know what they can expect support for.

Figure 8 - Need for public support in different phases of innovation processes



Source: Austrian Institute for SME Research, 2010.

The aforementioned results also reveal a typical dilemma of perceived mismatches between the private need for support and the public offer; while due to legal restraints the latter have to concentrate on pre-competitive research and innovation the companies would like to see more support in the competitive stages of their innovation processes, which in most cases is simply impossible at least with regard to direct funding. The emphasis on the ideas generating and conceptualising parts points out to another crucial issue for a company's decision whether or not to become innovative; many companies simply do not know what they could do to be innovative. With regard to the results discussed before that the entrepreneur or other SMEs are most relevant sources for innovation impulses it intensifies the impression that external and new insights are missing to a large extent. In addition, this result becomes even more alarming since there is a respective weakness of public support systems for they usually concentrate on research conducting companies that are already part of strong network needed to generate ideas.

This points out to a potential demand for a different support approach for innovative SMEs as compared to research SMEs. It is also striking that although there is clear demand for public support both the knowledge about and the actual usage of already existing support measures is common only among a very small minority of Viennese SMEs. The instrument of indirect funding for R&D and innovation, the tax credit system active in Austria is only used by 5 % of the respective companies. Even considering that there is only a minority of SMEs whose activities are eligible for tax credits the share seems unexpectedly small.

Conclusions

Small and medium-sized Viennese SMEs are innovative to a somewhat surprisingly large extent, which holds true for all different sectors and sizes. A majority of these companies (60 %) are developing and implementing innovations not only in a more technological sense (product, service or process innovations) but also with regard to new and innovative organisation structures, product designs or marketing instruments. Despite the expectation that the latter, the so called “soft” innovations would be – among other things – a compensatory strategy for those that either are active in sectors with a comparably low level of technology usage or lack the competence and capacities to develop technological innovations, the results show that they are two sides of the same coin and only a very small percentage of SMEs is concentrating on only one of them. Innovations developed by Viennese SMEs are mostly not new to the market.

The central motivations behind innovative behaviour are hardly differing among different sectors or sizes and are predominantly based in aiming for an increasing competitiveness, a growing turn-over etc. Companies that do not innovate do so because they lack the necessary resources (time, personnel, and finances) and knowledge. In addition, the lacking demand for innovative solutions on the customers’ side is another main reason for SMEs not to innovate.

The entrepreneur as well as the customers and employees are the most important sources for innovative impulses accounting for a lack of external insights, inputs and knowledge, which is also reflected by the low level of innovation cooperation as such as well as by the cooperation patterns. The regional innovation system seems to suffer from a potentially threatening dysfunctionality; universities of applied science as higher education institutions with supposedly very strong and close links to the regional economy are almost non-existent as cooperation partners for SMEs. The comparison between cooperative and non-cooperative innovative SMEs in Vienna revealed that although the issues (costs, disclosure of competitive advantages etc.) that are perceived as obstacles to such cooperation are more or less similar the latter seem to overrate their impact.

Innovative Viennese SMEs show a different demand profile with regard to their need for public support. The results indicate that those already innovative can handle the actual innovation process rather well while missing support for generating ideas and bringing their innovations to the market. For different reasons the public support system is not able (or in fact not allowed) to deliver this kind of support. In general, the relevance of the existing support measures is very low, which refers to its alignment to research rather than innovation in the broader sense and an overwhelming lack of knowledge and information on the company side. In conclusion, public support for innovation activities is needed but needs to address different issues in a different way compared to research organisations or research conducting companies. First and foremost, awareness has to be generated for the positive effects of innovation and the possibilities to be supported in being innovative. Secondly, cooperation has to be addressed even stronger than it is already, including activating “inactive” cooperation partners such as universities of applied science. Thirdly, the public support system should widen its definition of innovation to a broader one including “soft” innovations and the potential effects of implementing innovations developed by others on a company’s future readiness to become an innovator itself.