Abstract

The innovation performance of Hungary is below the EU27 average, and the fallback is especially considerable in case of small and medium sized enterprises. Having a look at the European Innovation Scoreboard it is clearly seen that Hungary is lagging behind most of the EU member states in several important indicators concerning innovation achievement. The paper intends to search into the cause of this phenomenon through analyzing trends of certain elements of innovation performance and also the practice of Hungarian SMEs.

The study consists of two main parts: The (1) trend analysis based on EIS database presents Hungarian achievement and also the tendency of the most important indicators of innovation performance especially emphasizing the quality of human resource, the firm activities in innovation and the output of the innovation performance in comparison with other European countries. Based on (2) field research the study also analyses a few Hungarian small and medium sized companies’ innovation performance, searching for motivating and discouraging features in the Hungarian economic, political and social circumstances. Considering the results of the research the paper draws a conclusion and makes proposals for the Hungarian decision makers in order to improve innovation performance in the SME sector.

Keywords: Innovation, competitiveness, small and medium-sized enterprises, European Innovation Scoreboard, successful SMEs

Introduction

According to the European Innovation Scoreboard (EIS) Hungary belongs to the group of ‘moderate innovators’ with an innovation performance below the EU average. This is a new classing as in 2008 the county was one of the ‘catching-up’ member states with almost the same parameters. The fallback has a negative influence in the county’s economic achievement and also its competitiveness. EIS provides a comparative assessment of the innovation performance of EU Member States, and its rank Hungary is only the 19th one. What can be the reason of this low performance which is especially considerable in the sector of small and medium sized enterprises?

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Despite the unfavorable circumstances there are SMEs in Hungary being market leaders not only in Hungary but even in international markets due to the great innovation performance. What is the secret of these small companies? What do they know and what do they do in order to be successful? What should be done to make the opportunity for the rest of the Hungarian SMEs to have the same success? In the study we search for the answers of these questions.

Background

The paper represents the results of the project “Factors influencing and accompanying innovation performance of the Hungarian SMEs” managing by the Department of Economics of Kodolanyi Janos University College.

European Innovation Scoreboard

The European Innovation Scoreboard was first introduced in 2000 in order to provide annual comparative assessment of innovation performance across the EU and other leading innovative countries. It includes 29 innovation indicators grouped in three major groups of dimensions namely:

- ‘Enablers’ captures the main drivers of innovation that are external to the firm. It is divided into „Human resources” and „Finance and support” dimensions
- ‘Firm activities’ captures innovation efforts that firms undertakerecognizing the fundamental importance of firm’ activities in the innovation process. It covers three dimensions: ‘Firm investments’, ‘Linkage and entrepreneurship’ and ‘Throughputs’
- ‘Output’ captures the output of firm activities and is divided into two dimensions: ‘Innovators’ and ‘Economic effects’ (PRO INNO EUROPE 2010)

Based on their innovation performance across 29 indicators, EU Member States fall into the following four country groups:

- INNOVATION LEADERS with innovation performance well above that of the EU average and all other countries
- INNOVATION FOLLOWERS with innovation performance bellow those of the innovation leaders but above the EU average
- MODERATE INNOVATORS with innovation performance bellow the EU average
- CATCHING-UP COUNTRIES with innovation performance well below the EU average (EIS 2009a)

Hungary belongs to the group of ‘moderate innovators’ with an average growth in innovation performance (the growth calculation is based on the absolute changes in the indicators) (Figure 1.).

In what follows the Hungarian performance will be discussed in some of the innovation indicators just like human resources, finance and support and also firm activities mainly focusing the achievement of small and medium-sized enterprises.
Human resources in the European Union and in Hungary

High-skilled and educated people are one of the most important key inputs for innovation. Three important indicators are going to be represented:

- ‘S&E (science and engineering) and SSH (social sciences and humanities) graduates per 1000 population aged 20-29’ which is the measure of the supply of the new first stage tertiary graduates
- ‘S&E and SSH doctorate graduates per 1000 population aged 25-34’ measuring the supply of the new second-stage tertiary graduates
- ‘Participation in life-long learning per 100 population aged 25-64’ being the central characteristic of a knowledge economy as the ability to learn can then be applied to new tasks with social and economic benefits.

As it is obvious from the following figures Hungary has a significant fallback in case of the three indicators and the difference is growing. The difference in S&E and SSH graduates was only 6.3 in 2004, but it increased to 11.7 by 2008. The level of higher education causes an additional problem as knowledge and professional skills of the graduates not always meet the requirement of the business sector.
Figure 2. S&E (science and engineering) and SSH (social sciences and humanities) graduates per 1000 population aged 20-29

Source: European Innovation Scoreboard 2009 Database. PRO INNO EUROPE [online] <URL: http://www.proinno-europe.eu/repository/annexes>

Figure 3. S&E (science and engineering) and SSH (social sciences and humanities) doctorate graduates per 1000 population aged 25-34

Source: European Innovation Scoreboard 2009 Database. PRO INNO EUROPE [online] <URL: http://www.proinno-europe.eu/repository/annexes>
The number of doctorate graduates in Hungary is well below the EU average. By looking at Figure 3 the Hungarian fallback is revealed. The difference is increasing between the Hungarian and the European achievement: in 2002 the EU average was twice as big as the Hungarian one; in 2008 this difference was almost triple.

Life-long learning is defined as participation in any type of education. All types of learning are valuable for future innovators. Figure 4 reveals the decreasing tendency in case of Hungarian achievement. Among the three discussed indicators the country has the greater handicap in life-long learning in comparison with the EU average. The difference is due not to the growth of the European performance but to the Hungarian decrease.

Figure 4. Participation in life-long learning per 100 population aged 25-64

![Graph showing participation in life-long learning per 100 population aged 25-64](source: European Innovation Scoreboard 2009 Database. PRO INNO EUROPE [online] <URL: http://www.proinno-europe.eu/repository/annexes>)

All of these factors have a impeding effect on the Hungarian innovation performance, as there is an obvious deficiency in a key input for innovation. According to this result the country can rather be ranked as one of the catching-up Member States than a moderate innovator.

Research and development expenditures

R&D expenditure represents one of the major drivers of economic growth in a knowledge based economy. Innovation leaders all spend a significant part of their GDP for research and development. Public and business R&D expenditures can be distinguished according to the origin of the spending. In case of the latter a continuous increase is shown in innovation leader countries which is an obvious evidence of the growing account of bottom-up initiatives.
According to the Lisbon Strategy Member States are recommended to spend at least three percentages of their GDP on research and development however apart from Finland and Sweden none of them comply with this recommendation. As the public R&D expenditures the Hungarian achievement is approximately two thirds of the EU average due to a decrease started in 2005. Since the business R&D expenditures did not increase simultaneously the aggregated indicator also decreased.

The reduction in public spending by itself would not cause a problem if the business compensated it, as it happened to one of the pioneers of innovation, Finland, where the changes of the internal rates does not prevent its slow growth. In Hungary however it is not the case. As it is shown in Figure 5 the Hungarian R&D spending is much less than the EU average. Member States which joined later the EU increasingly close to the Hungarian results (Pakucs-Papanek 2006).

Figure 5. (Public and business) R&D expenditures (% of GDP)

The significant shortfall should not necessarily been recorded as a clear disadvantage as research and development is not the only area in which a country can improve its innovation performance. Steve Jobs, Apple’s founder in 1998 said: „Innovation has nothing to do with the amount of dollars you spend on R&D. Innovation is not a question of money. Innovation is about people work for your company.” (Csath 2009).

Innovation performance of small and medium-sized companies in Hungary

Furthermore the small and medium-sized enterprises will be discussed in the performance of the entire business sector. The investigation includes both the ‘in-house’ innovations and the innovations in collaboration with other companies.
The two indicators do not include products and technologies developed by others. As it is displayed in Figure 6 concerning the in-house innovation of SMEs Hungary is the last in the European list. The performance of innovation leaders is three to four times better than the Hungarian achievement.

*Figure 6. SMEs innovating in-house (% of SMEs)*

Source: European Innovation Scoreboard 2009 Database. PRO INNO EUROPE [online] <URL: http://www.proinno-europe.eu/repository/annexes>

*Figure 7. Innovative SMEs collaborating with others (% of SMEs)*

Source: European Innovation Scoreboard 2009 Database. PRO INNO EUROPE [online] <URL: http://www.proinno-europe.eu/repository/annexes>
Results are not much better in case of innovation in collaboration with others. This indicator is of overriding importance because it shows that what proportion small and medium-sized enterprises are involved in complex innovation processes based on joint work. The indicator also measures the flow of knowledge between the public sector and firms and also inside the business sector. Hungary’s performance surpasses only for other European countries’. In the Figure 6 and Figure 7 the Hungarian achievement is displayed relative to the EU average.

In Hungary only 16 percent of SMEs introduce and implement new product and technology innovations; with this the country is 24th in the list of EU Member States. The performance is even worse in case of organizational and marketing innovations: Hungary is only the 25th (EIS 2009b).

Due to the lack of introduction of innovations Hungarian small and medium-sized businesses are able to save only a minimum of labor, low material and energy costs. According to the SII indicators in case of the former Hungary has the penultimate place in Europe, while in case of the latter the country has a slightly better achievement but it is still brought up the rear (EIS 2009b).

As it became obvious the Hungarian SMEs have a low innovation performance while they also have a substantial proportion of the country’s economic life: 71 percent of the employees are employed in the sector and about 50 percent of the gross domestic is produced by them (Mile 2009). What can be the reason of this poor performance? What are the hindrances that impede the Hungarian SMEs innovation activities and how might they be resolved? Based on the results of interviews and case studies we made an attempt to systematize the factors affecting the innovation performance of the sector.

Factors motivating and discouraging innovation performance of the small and medium sized enterprises

Market competition

The small and medium sized enterprises are supposed to get on with their low market share and many rival firms. In the traditional economic model, competition among rival firms drives profit to zero. But competition is not perfect and firms are not unsophisticated passive price takers. Rather firms strive for a competitive advantage over their rivals. From this point of view competition is the most important motivating factor for innovation activities. Many of our interviewees complained about the lack of financial opportunities. They typically put innovation in the last place during budgeting. Our research however has shown that the most successful enterprises pay particular attention to their innovation activity, even in circumstances such as today’s global economic crisis.

The most successful businesses all recognize that the key to success is a high level of customer service. This means quality, reliability, honesty and of course adapting to customers’ needs.

In Hungary, unfortunately, companies also have to deal with corruption which is significantly prevalent in recent years. Many of the interviewees believe that the phenomenon is one of the most important obstacles to innovation activity.
Economic policy, regulation

Economic policy is supposed to create a favorable environment for innovation activities. During our research however we received very negative opinions about the situation. One of the most important objections is the differential treatment of multinational companies in the country. These companies are receiving benefits (like tax relieves, financial support for employment) which is not available for SMEs. In addition to this for multinational companies it does not mean too much problem to have the input necessary for innovation. They do not have difficulties with applying well-trained, creative professionals for example, or buying expensive equipment for the researches. SMEs however are able to respond to new market challenges faster than their big rivals, due to the small size and flexible organizational form.

In Hungary companies have the opportunity to apply for national and EU support. But only a few firms make the best of this opportunity. According to our interviewees there are two main reasons of this: the first one is the complexity of applications, they are difficult to write well, and it is also difficult to find the appropriate application and meet the conditions. Tenders are usually quite inflexible; firms have to fulfill all of the requirements.

A huge problem is the corruption again. Only one example: one of the firms taking part in the research won a financial support for buying a special machine necessary for the firm’s main activity. But the tender fixed where to buy this machine. The firm finally withdrew from the project because the price was much higher than the market price. Only the own contribution would have been more than the firm finally paid for the machine in the market. Considering the above mentioned facts, a very important task of the future is to fight of the corruption.

Human resources

Success mainly depends on the creative, well-trained and flexible staff of professionals. Even the best ideas can be lost in the lack of implementation by the appropriate specialists.

High-skilled and educated people are one of the most important key inputs for a continuous innovation. The number of higher education diplomas in Hungary however is well below the EU-average. The level of higher education causes an additional problem as knowledge and professional skills of the graduates do not always meet the requirement of the business sector. Well-trained professionals however often leave the country expecting a higher salary and greater appreciation in western European countries. This is usually not valid for multinational companies, as the salaries these companies are able to pay for their engineers and managers are typically higher than the EU-average. The SME sector is much more involved since these firms have less opportunity to pay high salaries due to the limited source of income.

The entrepreneur

There is no business without a creative, enthusiastic and obsessive manager. An ambitious leader will motivate his/her colleagues, and will build a great team struggling for a common goal. Of course the leader should have high professional knowledge in order to be successful in his field.
Today’s business environment forces businessmen to face with professional, psychological and often physical and health challenges. Starting from this fact it is perhaps not surprising that in general younger businessmen are more motivated, willing to devote more time for their business success. In contrast older managers are less ambitious, their business is slowing down. They are thinking about company’s sale rather than further development.

Wider (social and natural) environment

The changes in environmental and social circumstances have been an inevitably impact on entrepreneurial activity over the past few decades. Changes in consumer preferences and the more and more conscious regulations force the business sector toward a safety, reliable and environmentally friendly production. The introduction of environmentally sound technologies typically means additional expenditures for the companies, which returns by the rise in consumption as more and more people chose products with high environmental standards. The cost effective management in many cases gets in line with environmental considerations. Quite a few companies introduce centralized web-based solutions for example, which replace the previous paper-based practice. The new solution reduces costs and maintains natural resources at the same time.

The importance of social atmosphere is unquestioned. If the society becomes aware of what role innovation has in the country’s future, it also becomes important on individual levels. A supportive social atmosphere is one of the most important factors motivating innovation. In Hungary a considerable change in way of thinking is needed, so that firms would not face with social envy and professional jealousy when they create something unique and achieve business success with it.

In the next part of the study a few successful Hungarian small and medium sized enterprises will be presented. These companies all have a great innovation activity which makes possible for them to be market leaders in their area of business. With the help of interview we tried to explore the secret of their success.

Successful Hungarian small and medium sized companies

PANNON Equine rehab and healthcare service

The PANNON Equine rehabilitation and healthcare service is a four-member micro-enterprise, which is now one of the most equipped and skilled service of the country thanks to the continuous innovations. The innovations are mainly characterized equine healthcare related medical treatments, surgical procedures and rehabilitation processes. The most important development is a unique service in equine healthcare, the aquatraining program (balneotherapy) with the suitable equipment, which is only available at the firm. The use of the equipment can support the training of race, dressage, jumper and endurance horses, but it is also suitable for rehabilitation following certain injuries or operation since it can increase the chances of recovery and decrease the rehab time. The equipment itself is a treadmill built into a narrow pool (called aquatrainer) with front a rear doors allowing the horse enter the treadmill and walk out at the end of the training. When the horse is already
inside the two doors are going to be closed and the pool filled with warm thermal water which height and temperature can be changed depending on the requirements. After this the machine is switched on and the horse begins to walk in the water.

The treatment is special because due to the buoyancy the burden on bones is minimal while the walk in the dense liquid strengthens the muscles efficiently, thereby helping to agglutinate bones to recover faster than under normal circumstances.

Presently PANNON Equine rehab and healthcare service is the only company in Hungary that is able to provide for equine balneotherapy rehabilitation. There is a high interest among professional riders and horse owners.

According to the manager of the company there were important elements contributing the success of the innovation. First of all a good marketing work accompanied the project which made the service know and marketable among horse owners. For the implementation public subsidy had been used. But perhaps the most important factor was the manager’s persistence, enthusiasm and good business sense.

The company’s success however brought a strong resistance from the side of the competitors that was clearly due to professional jealousy. This inevitably resulted in a negative advertising, but its effect was fortunately much weaker than the satisfaction of the customers. Using public aid was not free from problems either. Although the company has implemented the project in compliance with all requirements, the first grant allocation was nearly 12 months late. The manager’s legal remedy was rejected without explanation. Using former reserves was the only way to guarantee a smooth execution of the project.

The manager is basically satisfied with his overall business results, but emphasizes the difficulties Hungarian entrepreneurs are force to cope with in a political and economic environment blinding eye over and sometimes even supporting illegal, corrupt and criminal activities in the country. In his opinion work done and results achieved abroad have a higher respect in both professional and customer circles. Long-term success can only be achieved if the company properly communicate with all external stakeholders, and assume the responsibility for its work of professional and financial terms either. It is also important to undertake innovations which are able to create their own markets and operate independently from the public sector.

Lehel Coachbuilder Ltd.

Lehel Coachbuilder Ltd is a Hungarian-British-owned company which continues the tradition of the Hungarian shareholders. The firm produces carefully designed horseboxes with luxury interior. Neither the production nor the design is not standardized, each vehicle is built according to customers’ specific needs, so each product of the company is a result of innovation. The price of a truck is several times higher than a luxury car’s and the company’s name became known all over the world.

The vehicles would also be considered unique in that each component is precise hand-produced within the old technology without using outside suppliers. Thus Lehel belongs to the largest traditional automotive producers. In addition to manufacturing the company has American and European service networks where hundreds of people work.

The company has no rivals in Hungary and there are only three in Europe with whom the firm maintains a good partnership and often collaborates. The targeted design time of a vehicle is two days, but during this time 8-10 designer keeps working on the plans. The
manufacture of a truck takes about 4000-4200 working hours which are approximately up to 20 days depending on the number of workers. The vehicles are able to simultaneously meet a number of functions: they can ensure a comfortable stay for four to eight horses while they also provide for a mobile home.

The recognition of market potential and the successful application of previously developed technology have largely contributed to the company’s success. The workers positive and enthusiastic attitude was another important influencing factor. The firm’s decision makers were able to expand their market and find other market segments in addition to horse owners. The company’s success cannot be proven better than the Ferrari racing team using Lehel trucks to transport their vehicles.

Despite the unique success the Hungarian owner is not satisfied with the results, because the company’s activity is strongly hindered by the Hungarian economic policy that rather support multinational companies settled in the country than domestic producers. An additional impeding effect is the Hungarian application system with a corrupt background causing disadvantages in some cases for the applicant instead of advantages.

Therefore the interviewee would suggest to other to start such a quantity and quality production abroad as he would do with his today’s knowledge.

Lénia2 Advertising and Media Agency

Lénia2 Advertising and Media Agency was among the first established domestic firms after the political changes. Its activity includes advertising, public relation and marketing in almost all branches. Having a much smaller market of potential customers than a similar agency in the capital (the company operates in Székesfehérvár city, Hungary), the firm does not focus on specific sectors of activity since it would not necessarily provide the level of efficiency. The advantage however is that the smaller organizations are more flexible and are able to complete their tasks faster than bigger companies. Innovation is a vital element of the company as its activity is continuously renewing. The most typical innovations are in the field of marketing and promotional activities such as web design, television and radio spots editing, leaflets and brochures and so.

The success story of the company however is the „Ősfehérvár” program. The idea of the program was given by searching for answers for an increasingly difficult situation burdening downtown shops and restaurants. The biggest problem was caused by establishing a huge shopping center in the middle of the town resulting that the small downtown businesses has lost a significant part of their customers. Enterprises were struggling to survive, so a common approach has been proposed by Lenia2. The purpose of innovation and the essence of the program in one is that participating business in return for a modest fee (2000 HUF/month) receive marketing tools with the help of which they may compete with multinational firms. This means first printed media, on the other a common portal where companies can update the information daily. One of the most important condition of registration that the shops cannot be in the area of shopping centers. In addition to firms the agency also recruits customers for whom the so-called „Ősfehérvár” card is issued. A card costs 990 HUF and in each of the participating business certain discounts are provided for the customers. Stores can only enter the network if they provide for guaranteed benefit for the cardholders. This benefit is a minimum of five percent, but the major part of the companies give a larger discount. Currently 330 firms and 22-23 thousand cardholders strengthen the local patriotic
initiative which has become the largest local coalition nationwide. The manager believes that the key to success is the responsiveness, expertise and innovation. Their success can largely be thanked the creative and enthusiastic team and the fair business behavior. For the results of the project the external factors were also essential namely the support of the municipal government and the local people.

In addition to its success the company also has difficulties. It often must compete with companies which offer cheap low-quality service. Another problem to cope with is the negative discrimination of Hungarian economic policy against the Hungarian SME sector making impossible for a significant part of the small and medium sized businesses to survive.

Results

In the European context the Hungarian small and medium sized enterprise sector has a rather poor performance in innovation activities. Either the in-house innovation or the innovation in collaboration with others is well below the EU average. Results are not much better in case of applying other’s innovations either. One of the reasons may be the shortcomings in the Hungarian education policy, resulting a performance far below the EU average concerning both the number of academic qualifications and doctoral degrees.

The primary research revealed that what difficulties Hungarian SMEs with outstanding achievements have to face with during their innovating activity. These results can be summarized as follows:

1. A company operating in Hungary and targeting the Hungarian market is forced to work in a corrupt system. That is why it can prosper fairly only if it is able to function independently from any public support.

2. The Hungarian economic policy prefers multinational companies to domestic producers. It supports the former via tax allowances and subsidies with tender requirements a small enterprise is not able to fulfill.

3. The success of a small or medium sized company mainly depends on the manager (owner). It he/she is ambitious, enthusiastic, has a high professional knowledge he/she can build a team struggling for a common goal.

4. The good leader is not enough, good followers are required. The employees’ creativity, ideas contribute greatly to the success of the company. This calls for direct and stress-free workplace that allows creative thinking and ideas.

5. Proper communication with all stakeholders and both professional and financial responsibility for the work done are critical to the success.

6. The Hungarian society does not create favorable circumstances to innovation. Successful Hungarian companies are often surrounded by professional jealousy, envy, either from the society and the rivals.

Conclusions

Overall we can conclude that Hungarian SMEs have difficulties working in present economic circumstances. Neither the economic policy nor the social situation helps innovators.
Meanwhile the innovation and innovative companies are driving force in the domestic economy, it does not matter therefore that knowledge-intensive, high value-added activities or the so-called „Assembly” capital is supported by the economic policy.

For the effective development suitable economic reforms and appropriate social values would be desirable.

References

AZ INNOVÁCIÓS TEVÉKENYSÉG REJTETT TÉNYEZŐI A MAGYAR KIS- ÉS KÖZEPES MÉRETŰ VÁLLALKOZÁSOKBAN

MILE Csilla1

Összefoglaló

A magyar KKV-szektor innovációs teljesítménye mind a saját, mind pedig a más vállalko-
zásként kooperációban megvalósított innovációk tekintetében jelentős mértékben elmarad
az európai átlagtól. A kis- és közepes méretű vállalkozások a külső, más vállalatok által
megvalósított innovációkat sem használják fel olyan arányban, mint európai versenytársa-
ik, így minimális az újításoknak köszönhető munkaerő-, valamint nyersanyag- és energia-
költség megtakarítása. A gyenge eredmény egyaránt köszönhető a kedvezőtlen gazdasági,
társadalmi és politikai hatásoknak, valamint különböző pszichológiai és egyéb humán té-
nyezőknek. A magyar vállalkozók dolgát megnehezíti az országba betelepült multinacionál-
is vállalatoknak kedvező gazdaságpolitika, valamint az elutasító társadalmi környezet.

A nehéz körülmények ellenére vannak Magyarországon olyan sikeres KKV-k, amelyek
folyamatos innovációs tevékenységüknek és egyedülálló fejlesztéseiknek köszönhetően
demcsak a magyar, de a nemzetközi piacon is megállják a helyüket, akár piacvezető szerep-
ben is. A vezetők megítélése szerint azonban az elvégzett munkának és elért eredmények-
nek mind szakmai, mind pedig felhasználói körökben nagyobb megbecsülése van külföld-
on, mint hazánkban.

Egy kisvállalkozás sikere a legnagyobb mértékben a cégvezető személyén, személyi-
ségén múlik. A legsikeresebb üzletek vezetői jellemzően kreatív, ambiciózus, másokat mo-
tiválni képes, magas szintű tudással rendelkező szakemberek. A jó vezető azonban önmá-
gában nem élég, a jó képességű, lendületes és rugalmas gondolkodású dolgozók legalább
annyira fontosak.

Egyre több vállalkozás felismeri, hogy az innováció nem merül ki egy új termék/szol-
gáltatás bevezetésén, a szervezeti és technológiai innováció legalább ennyire fontos. Ez
azonban méretfüggő is. A szervezet méretének (létszám, éves bevétel) növekedésével pár-
huzamosan nő a szervezeti és technológiai innováció gyakorisága.

Kulcsszavak: Innováció, versenyképesség, kis és közepes vállalkozások, Európai Innová-
ció Eredménytábla, sikeres magyar kis- és középvállalkozások.

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