Hungarian outlook
I am pleased to present the annual Corporate R&D Report prepared by Deloitte Hungary, published for the sixth time. In addition to the 78 Hungarian medium-sized and large responding companies, companies from nine other Central European countries also participated in the survey (Croatia, Czech Republic, Estonia, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia).

The R&D&I funding scheme, based largely on EU and Hungarian funds, has significantly changed in 2015. In addition to the co-financed EU funds of HUF 750 billion for the period 2014-2020, about HUF 80 billion will be provided this year under the Programme Strategy and approximately HUF 83 billion will be available for the support of R&D&I in 2017 from the National Research, Development and Innovation Fund.

This is the first time in the past six years that more companies have been planning to increase R&D spending for the next 1-2 years than those planning to retain the level of R&D, which may facilitate further growth of GDP proportionate corporate R&D spending. According to the respondents the external factor that most dominates the increase of corporate R&D spending is the availability of various benefits (financial instruments, grants, tax incentives). However, large companies that represent a significant proportion of corporate R&D spending will have access to limited amount of grants while financial instruments seems less attractive to them; therefore the relative abundance of funds may not necessarily entail a proportionate increase of corporate R&D spending.

A specific aim is to facilitate the cooperation of research institutions, universities and industry players. In this respect it must be noted that although the majority of respondents cooperate with other companies as well as with universities, research institutes when implementing R&D projects, only consortiums for the right projects and under the right terms could lead to tangible R&D&I results.

Our survey aims at outlining regulatory and policy recommendations that are based on the opinions and expectations of medium and large enterprises involved in research and development and innovation, and helps to reach the 1.8% GDP proportionate R&D spending by 2020.

I hope you will find the report interesting and useful.

Dr. Csaba Mármus
Partner
R&D and Government Incentives
Deloitte Co. Ltd.
Findings

Research and development spending
Based on results of 2016, the proportion of respondents which had no R&D spending at all in 2015 (11.5%) declined considerably in comparison to previous years. In contrast, an increasing number of respondents spent 3 to 10% of their revenue on R&D, while there was a decline compared to 2014 in the percentage of companies where R&D spending exceeds 10% (11.5%).

Compared to the previous three years, 2016 has seen a rise in the percentage of respondents who expect an increase in research and development spending in the next few years. Also, for the first time in six years, more respondents are planning to increase their R&D spending in the coming years than those who are expecting to keep R&D spending at the same level.

Moreover, nearly 60% of survey participants are planning to increase their R&D spending in the medium term (in the next 3 to 5 years) compared to 2015, which is almost the same as the percentage recorded in 2015.

Companies’ R&D spending (expressed as a percentage of annual revenue)

In 2016, respondents considered the availability of different types of benefits to be the most critical factor influencing the increase of R&D spending in the short term (in the coming 1 or 2 years), followed by the availability of skilled and experienced researchers. Unlike in previous years, access to and cooperation with universities and research institutes have become a crucial factor as well - but often not necessarily for good reason. Due to the fact that the availability of different types of benefits is the factor that influences the most the increase in companies’ R&D spending in the short run, should the proportion of non-refundable grants be reduced in the case of large enterprises and should the conditions for the so-called financial instruments not be suitable for beneficiaries, then the relative abundance of funds may not necessarily support corporate ambitions for increased R&D spending.
Similarly to previous years, the factors that least influence R&D spending in the short term include the funding for the protection of intellectual property rights, access data on R&D activities of competitors, lower wage cost of researchers/developers and the efficient management of intellectual property rights. Some respondents mentioned the parent company’s decision to pursue R&D activities and linked the change in R&D spending to market demand and the company’s financial position.

A considerable change compared to the last two years is that now only 5.5% of survey participants would not take any action to protect their intellectual property or know-how, down from one quarter of all respondents last year. Looking at the various tools available to protect intellectual property, the most significant increase was recorded in terms of the use of a company secrets policy (72.7% compared to 66.1% in 2015), patents (52.7% as opposed to 33.9% in 2015) and copyrights (32.7% compared to 26.8% in 2015). This positive development suggests that companies engaged in R&D are becoming more and more conscious about protecting their intellectual property and know-how.

Tax incentives and grants
A favourable improvement is that 73% of participants surveyed claimed to be familiar R&D tax incentives; of these, somewhat over 40% said that they were fully aware of them, although only 50% of respondents did actually claim to use such incentives.

Of those respondents whose company is eligible for R&D tax incentives, the greatest risk relevant to most of them is the fact that the underlying tax regulations are unclear (23.9%), closely followed by uncertainties surrounding the tax authority's approach to R&D tax incentives (19.6%) and implementing internal record-keeping systems that support expenses relating to R&D activities (17.4%).

Companies’ opinions on claiming R&D tax incentives

- 8.7% My company is fully familiar with R&D incentives.
- 15.2% I believe that my company does not carry out any R&D activities/projects that would be eligible for R&D tax incentives.
- 41.3% R&D tax regulations are not clear and are presenting too many risks for the company.
- 17.4% My company is uncertain about the approach of the tax authority with respect to R&D costs; therefore I find the use of these tax incentives risky.
- 19.6% My company is familiar with how to prove that its activities are R&D but the company’s reporting/cost tracking/time sheet/etc. systems are not capable of appropriate recording/proof of related costs.
- 23.9% My company is familiar with R&D tax incentives but uncertain about which activity could be classified as R&D and aware of risks how to prove that its activities are R&D (classification of activities as R&D activities).
- Other
In terms of R&D grants, almost 50% of those surveyed feel that they are fully aware of such opportunities; however, compared to the previous two years, there has been growth in the proportion of respondents who lack sufficient resources for monitoring grant opportunities or preparing applications (13%), which clearly implies that there is market demand for experts.

As in the period from 2014 to 2020 around one third of R&D grants will be available in the form of so-called financial instruments, we asked a question for the second time after 2015 to find out how the respondents' willingness to apply for grants would be affected if the grant amount were repayable in whole or in part. Interestingly, almost one quarter (23.2%) of respondents were of the opinion that their willingness to apply would not be affected by whether the aid was repayable or not and by the amount to be repaid (compared to 10.7% in 2015) – although it does not necessarily mean that these respondents would submit applications either. However, while in 2015, 25% of respondents indicated that they would not apply if any part of the aid received was repayable, in 2016 this percentage was already 34%. At the same time, while in 2015 nearly 25% of survey participants said that they would apply if repayment depended on the successful completion of the R&D project or on the amount and realisation of the income generated through the project, in 2016 only 3.6% of respondents would apply under these conditions. Finally, an interesting aspect is that while in 2015 almost 10% of respondents indicated their intention to apply if a so-called combined product (a combination of (non-repayable) grant and a (repayable) financial instrument) was available, in 2016 a mere 3.6% of survey participants reported being interested in this type of aid.

These responses are alarming as financial instruments represent significant volume, and the risk may be that, in order to ensure absorption of funds, requirements would need to be relaxed considerably and focus would turn to supporting purely innovation-oriented projects instead of R&D.

<table>
<thead>
<tr>
<th>The effect of whether aid is repayable or non-repayable on companies (%)</th>
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<tbody>
<tr>
<td>I never apply for R&amp;D aid regardless of whether such aid is repayable or not</td>
<td>25.0</td>
<td>19.6</td>
</tr>
<tr>
<td>Whether or not the aid is repayable and the ratio of repayment do not affect my willingness to apply</td>
<td>23.2</td>
<td>10.7</td>
</tr>
<tr>
<td>I would not apply if a part of the aid amount received for the completion of the R&amp;D project had to be repaid</td>
<td>7.1</td>
<td>21.4</td>
</tr>
<tr>
<td>I would not apply if the entire amount of aid received for the completion of the R&amp;D project had to be repaid</td>
<td>12.5</td>
<td>17.9</td>
</tr>
<tr>
<td>Other</td>
<td>5.4</td>
<td>7.1</td>
</tr>
<tr>
<td>I would apply if reimbursement would only affect a part of the aid received (&quot;combined aid&quot;)</td>
<td>3.6</td>
<td>8.9</td>
</tr>
<tr>
<td>I would apply if the type of the repayable aid instrument (e.g. guarantee, a loan at a preferential interest rate, etc.) were to be suitable for me</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>I would apply if reimbursement would depend on the amount of revenue derived from the R&amp;D project and the date when such revenue is generated</td>
<td>1.8</td>
<td>14.3</td>
</tr>
<tr>
<td>I would apply if repayment would depend on the successful completion of the R&amp;D project (i.e. reimbursement were not due if the R&amp;D project had been completed but the intended result had not been achieved)</td>
<td>1.8</td>
<td>10.7</td>
</tr>
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</table>
Similarly to 2015, over 40% of respondents have yet to face tax audit of their R&D tax incentives in 2016. However, those who have been subject to tax inspection of R&D tax incentives, did not experience any change in the approach of the tax authority.

In this respect, the highest percentage of respondents claimed that the tax authority questioned the R&D nature of their projects (at the same time, the proportion of companies that considered the opinion of the Hungarian Intellectual Property Office (HIPO) to be unfounded is now negligible). The percentage of respondents whose R&D expense records were reviewed by the tax authority in greater detail was also high, while another clear tendency was that, when reviewing expense records, the tax authority accepted only data extracted from closed time sheet systems for the purpose of supporting personnel costs.

### Critical problems in the current system of R&D incentives

According to the survey, compared to 2015 there has been an increase in the percentage of respondents (nearly 40%) who believe that the most significant issue in the current system of R&D incentives is the uncertainty surrounding the treatment of grants and tax incentives by the tax authority and other authorities. Identifying activities eligible for R&D grants and tax incentives (34%) is another highly relevant issue according to respondents, and these two problems collectively account for nearly 75% of all issues reported by survey participants.

#### Critical problems in the current system of R&D grants

- **34%**
  - Other

- **39.6%**
  - Identifying the activities that meet the R&D requirements for requesting a subsidy or a tax deduction

- **15.1%**
  - Unclear guidelines on the conditions of the eligibility of the costs and their calculation

- **5.7%**
  - Keeping track of costs separately

- **5.7%**
  - Lack of tax clarity in the assessment of subsidies or tax deductions by tax or other authorities.
Cooperation with third parties in R&D projects
It is worth noting that, similarly to the previous three years, the majority of respondents (nearly 64%) cooperate with other organisations in implementing R&D projects. However, nearly one half of all other respondents do not cooperate with third parties in implementing R&D projects due to the fact that it would not be required or reasonable from a business perspective. This is particularly true for companies that have a dedicated R&D centre. However, the factor that determines in practice whether a company cooperates with third parties in implementing an R&D project is not whether they have an R&D centre (and, if yes, in which country), but whether the nature of the R&D project requires cooperation with other (third) parties.

It is no coincidence that over 80% of companies cooperate with third companies in implementing R&D projects only if this is absolutely essential for executing such projects. However, an adverse development is that a growing number of companies plan to cooperate with third parties only in hopes of receiving a higher grant amount or becoming eligible to grants, perhaps also due to the increasing proportion of R&D grants that require cooperation with third companies.

Suggestions for further improving R&D cooperation between companies and universities

At the same time, there has been a noticeable increase in the number of survey participants who would apply for R&D grants but are unable to enter the required consortium arrangements due to the nature of their R&D projects or because of their business interests. This confirms the concern reported in recent years that artificially forcing companies to enter consortium arrangements does not help increase the R&D spending of potential beneficiaries.

For the first time this year we also asked our respondents how they thought R&D cooperation between companies and universities could be further improved. The most critical factor indicated by respondents was a more practice-oriented education for university students (33.9%); in addition, they underlined the importance of accelerating decision-making in universities (16.1%), and the same percentage of respondents (14.3%) would urge improvements to the research/lab capacities of universities and the development of a platform that allows for regular coordination and better assessment of capacities and needs. Aspects considered by companies to be the least important include the use of government incentives (12.5%), the simplified or more transparent management of intellectual property rights (3.6%) and the use of university infrastructure by companies (1.8%).
As for R&D cooperation between large companies and small and medium-sized enterprises (SMEs), respondents consider the most critical factor to be the difficulty in utilising intellectual property rights and knowledge created in the course of a project; in addition, they mentioned the issue that SMEs usually find it difficult to enforce their will in this form of cooperation. On the other hand, involving multiple SMEs often requires disproportionate effort by large companies.

In contrast, an aspect considered by companies to be less important in connection with cooperation is that SMEs benefit more from such cooperation through the capacities of the large enterprise and the consortial form of cooperation enables efficient segregation of duties and tasks.
Regional outlook
Foreword

Research and development has many faces, not just white coats and laboratories. Basic and applied research is carried out primarily by the academic sector and financed chiefly from public resources. By contrast, experimental development is largely funded by the business sphere and it represents a way for companies to maintain competitiveness and ensure long-term financial growth. At the same time, however, research and development make up a single whole which no developed country can do without. That is one of the reasons why developed economies of the EU support research and development by investing approximately 3% of GDP per year, but the allocations of Central European countries to research and development are comparatively smaller – between 0.4% and 2.4% of GDP.

All Central European countries which participated in the survey have a set research and development support programme. It consists either of direct support in the form of grants, or indirect support in the form of tax deductions. The indirect types of support also include various financial tools such as loans offered under advantageous conditions. Although there is no unified support model, the majority of EU countries use a combination of these methods. This year’s edition of our survey has confirmed that it is precisely the combination of means of support that motivates companies the most to invest in research and development.

Another positive finding of the survey is the fact that companies want to maintain or even increase their volume of funds invested in development. An incentive for increasing investments are also the new grants under the 2014-2020 European Funds programming period, enabling companies to co-finance their development projects.

What makes companies increasingly more worried, on the other hand, is the uncertainty surrounding how they will be evaluated in a potential inspection by tax and other authorities. I believe that the individual state authorities of the countries in Central Europe will make use of this impulse not only for expert discussion on potential legislative amendments, but also to create a unified interpretation practice.

To conclude, please allow me to thank all the companies that gave their time to completing the questionnaire and enabled us to carry out this analysis. This year’s edition of the survey was already the sixth, so we can also evaluate the obtained data time series-wise. I hope that you will find the published results interesting and that they will contribute not only to the discussion on research and development support in the individual countries, but also to a dialogue between the private sector and state authorities.

Luděk Hanáček
Partner
Macroeconomic view

Economic growth is the basic prerequisite for improving the living standards of the population. And not only in the material sense of the word. A richer society offers people the opportunity to use their leisure time in a more meaningful way and to pursue personal development.

There are different paths to accelerating and sustaining economic growth. The basic perspective to consider is that of production factors. These are usually divided into three categories: work, capital and their productivity. The volume of work is limited by demographic growth. However, in a number of developed as well as developing countries, including Central Europe, this factor is likely to hinder further economic growth given the anticipated impact of an aging population. Investment in production capital also has its limits. Too much investment reduces the marginal rate of return on capital. Economics provides for an optimum distribution of resources between consumption and investment, with the present as well as future benefit to the whole of society maximised (within the growth theories referred to as the "Golden Rule"). What remains is the third factor: the productivity of the production factors. The principal means of enhancing productivity is innovation. Innovation activities may be, in turn, promoted by investing funds in research and development. Spending on research may not necessarily ensure that new ideas and technological processes will be produced; however, they considerably increase the likelihood of it happening. The experience of successful economies, such as the US, Germany, Sweden or South Korea, stands as proof of this.

Central European countries have, for a long time, lagged behind in terms of the volume of investment in research and development. In some of the countries, however, things have begun to look up, with the highest achievers being Slovenia and the Czech Republic. In 2014, the two countries invested 2.4% and 2% of GDP in research and development, respectively. By way of comparison: the European Union average is 2%. Slightly below-average investment in research and development has been made by Hungary and Estonia, oscillating between 1-2% of GDP. The amount of the costs incurred by the rest of the countries in Central and Eastern Europe is below 1% of GDP. However, it is not only the total sum invested in this area that is at play. The sustainability of a high amount of investment in research and development and a reasonable burden on public finances may be ensured by a suitable financing structure. In certain aspects, the role of the state and its support in the form of direct subsidies is irreplaceable. Nevertheless, it is equally important to provide space for corporate investment supported by an appropriate tax system setup and its practical application.

An important parameter is the effectiveness of research and development costs. In this respect, the highest achiever from among the CEE region is Estonia, having taken 31st place in the list compiled by the World Economic Forum based on innovations and the sophistication factor. The Czech Republic is only one place behind. Lithuania and Slovenia were also among the countries that made the top forty.

The nature of the global economy, and with it the fate of small open economies in Central and Eastern Europe, have changed during the last two decades. The existing factors of economic growth have been exhausted to a certain extent and the external economic environment has been altered by the financial crisis. Investment in research and development will play an ever more important role. Central Europe could take inspiration from economically successful countries, which have been making use of this factor for their benefit. Therefore, it would be useful to increase the priority given as part of the economic policies of the CEE countries to the support of investment in research and development. Additionally, efforts should be made in promoting corporate-level innovation activities. At the same time, the sustaining or acceleration of economic growth will be vital not only for the growth of living standards, but for the sustainability of public finance as well, including the financing of retirement and health care systems.

David Marek
Director, FAS, Czech Republic
Key findings

A comparison of the 2016 results with last year’s survey shows that companies are planning a greater increase in their R&D investments, over both the next one to two years (45%) and the next three to five years (57%).

The principal drivers that are motivating companies to invest more in R&D include the availability of more types of benefits, enabling them to use a combination of grants, tax deductions etc. and the availability of skilled and experienced researchers.

Most companies (71%) are continuing to collaborate with third parties, such as universities and research institutes, which is proving beneficial for both parties.

The key concerns expressed by companies from all surveyed countries include the uncertainties they face when the tax authorities review the subsidies and tax deductions they have used, the uncertainties in identification of R&D activities and a scarcity of qualified and experienced research personnel.

The highest proportion of companies mostly use a company secrets policy to protect their know-how and intellectual property (69%), followed by patents and utility designs (40%) and trade marks (31%).
Analysis

Deloitte’s ongoing focus on research and development (R&D) is one reason why we carry out this annual survey aiming to map the attitudes of companies in Central Europe to investing in R&D. It also helps find out what difficulties companies face in the R&D area, how they protect their know-how and what kind of government support they mostly use. This is the sixth consecutive R&D survey, mapping the situation in 10 Central European countries (Croatia, the Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia and Slovenia). More than 400 respondents took part in the survey.

New support tools
The good news from this edition of the survey is that companies throughout Central Europe would like to invest more in R&D, following the trend seen in previous years. The principal drivers that are motivating companies in this way include the new programming period of EU funds (2014 – 2020); this introduces new R&D subsidies that provide an immediate stimulus for companies to co-finance R&D projects, which can often be extremely financially demanding. Another motivating factor is the implementation of new tax tools for R&D support in individual countries R&D tax deductions introduced in Slovakia (2015) and Poland (2016).

Last but not least, we should mention that the improving economic situation in Central Europe and across the world is having a positive impact on company finances, as higher demand for products and services leads to better results. This means that more funds may be invested in R&D to enable companies to retain their competitiveness in years to come.

Continuing collaboration
Another piece of good news is that most companies are continuing to collaborate with third parties, such as universities and research institutes, which is proving beneficial for both parties.

The key concerns expressed by companies from all surveyed countries include the uncertainties they face when the tax authorities review the subsidies and tax deductions they have used. Another area of concern is a scarcity of qualified and experienced research personnel, without whom delivering effective R&D projects is challenging.
How would you foresee your company’s R&D spend in years to come?
Responses clearly show that companies are positive about their R&D spending. Compared to 2015, they plan to increase their R&D investments over the next five years.

A comparison of the 2016 results with last year’s survey shows that companies are planning a greater increase in their R&D investments, over both the next one to two years (45%) and the next three to five years (57%). The countries where the greatest numbers of companies are planning to increase their investments are Slovakia (69%), Croatia (68%) and the Baltics (65%). However, most Slovenian companies do not plan to increase their R&D spend. It is possible, that last year most companies increased their investments on maximum level and because of this they plan to invest the same amount as 2015 over the next two years (44%) and three to five years (39%).

Companies’ R&D investments over the next 3 - 5 years (%)
Protecting companies’ R&D policies and Intellectual Property / know-how

Most companies consider the question of protecting R&D results to be a key one. How a company protects its IP and know-how depends on several factors, the most important being its size. For smaller businesses, the legislative process around registering a patent, for example, may be too demanding in terms of administration, time and finance. Alternatively, they may simply underestimate the risks involved in the disclosure of company know-how. The next most decisive factor is the market area in which a company operates. While technical companies may use patents or industrial design, such solutions are not used by IT companies to protect software.

Secrets policies still dominate

This year’s survey results are comparable with those from 2015. Like last year, the highest proportion of companies mostly use a company secrets policy to protect their know-how and intellectual property (69%), followed by patents and utility designs (40%) and trade marks (31%). The least commonly used form of protection is industrial design.

Surprisingly, 9% of all surveyed companies use no form of protection. These are mainly small businesses or companies that allocate only a small number of employees to R&D.

<table>
<thead>
<tr>
<th>Protection Method</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Company secrets policy</td>
<td>69%</td>
</tr>
<tr>
<td>Patents / utility design</td>
<td>40%</td>
</tr>
<tr>
<td>Trademark</td>
<td>31%</td>
</tr>
<tr>
<td>Copyright</td>
<td>26%</td>
</tr>
<tr>
<td>Industrial design</td>
<td>14%</td>
</tr>
<tr>
<td>None</td>
<td>9%</td>
</tr>
</tbody>
</table>

How do you protect Intellectual property / know-how in your company? (%)
The most serious problems in the current R&D support system and the usage of R&D grants and tax incentives

When asked 'What do you consider to be the most serious problem in the current system of R&D support?', almost a third of the respondents (31%) cited the uncertainties involved when tax authorities review subsidies and tax deductions. (That is, the concern that following such a review, the company may have to refund part or all of the grant or pay compensation to cover an incorrect tax deduction.) The highest proportions of companies expressing this concern were in the Czech Republic (39%), Romania (35%) and Poland (34%).

Quantifying concerns
This uncertainty is closely related to the methodology created by the tax authorities to evaluate R&D, and companies' associated concerns about whether financial experts lacking specialist technical knowledge can properly define what is research and what is not. Specifically, such concerns relate to the area of experimental development for commercial purposes.

A quarter (25%) of our respondents stated that the second most serious problem is the difficulty in identifying those activities that may be considered R&D, highlighting the currently unclear legislative definition of R&D activities.

Last year, the greatest proportion of respondents (32%) saw the identification of R&D activities as the most serious problem they faced, followed by uncertainty relating to tax issues (27%). The switch in the ranking of these two problems in 2016 may be the result of several factors. First, the increasing number of companies utilising various forms of R&D support will lead tax authorities to undertake increasing numbers of financial reviews (with potentially negative outcomes). Second, companies will experience uncertainty when using a newly implemented support tool (such as a tax deduction) and are likely to be concerned about its potential assessment by a tax authority.

Media matters
There is a third factor that can have a negative impact on company attitudes – namely, the media coverage of controversial cases. (This is quite common in the Czech Republic.) However, such cases can in fact help to set clearer rules, create a better assessment methodology and even initiate legislative change. These benefits can arise in cases where a company does not agree with the procedure performed by supervisory authorities and uses legal means to make an appeal.

Over the long term, the lowest proportion of respondents (10%) sees the related administrative burden (keeping track of costs separately) as a problem. However, this is an increase from 7% in 2015.

What is the most serious problem in the current system of R&D support (both in terms of subsidies and of R&D tax deductions)? (%)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Lack of tax clarity in the assessment of subsidies or tax deductions by tax or other authorities</td>
<td>31</td>
</tr>
<tr>
<td>Identifying the activities that meet the R&amp;D requirements for requesting a subsidy or a tax deduction</td>
<td>25</td>
</tr>
<tr>
<td>Unclear guidelines on the conditions of the eligibility of the costs and their calculation</td>
<td>21</td>
</tr>
<tr>
<td>Keeping track of costs separately</td>
<td>10</td>
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</table>
Key factors influencing R&D spending

Many factors influence a company's decisions about whether and how much to invest in R&D activities. The survey attempted to identify the factors that play a key role in a company's decision to increase their R&D investments over the next two years.

The responses show that companies consider the availability of more types of benefits, enabling them to use a combination of grants, tax deductions etc, to be the most influential factor in increasing their R&D investments (64%). The second most important factor is the availability of skilled and experienced researchers (63%); these include university graduates who companies can train as well as seasoned engineers and technicians.

Grants vs tax relief

The survey also shows that companies prefer the opportunity to use grants rather than tax relief. This finding may, however, reflect the fact that the tools available to support R&D differ between different Central European countries. Although grants are available in all the countries participating in the survey, tax deduction was only recently introduced in Slovakia (2015) and Poland (2016). The way that tax relief is used differs from country to country as well. The proportion of R&D costs eligible for an R&D tax deduction ranges from 25% in Slovakia, to 100% in the Czech Republic and Slovenia, and right up to 300% in Latvia. The amount in question may play a role in influencing whether companies use tax relief or the grants for which they may apply – depending on the type of project and company involved, grants can cover between 20% and 100% of a project's costs.

A shortage of researchers

Respondents also confirmed that the availability of skilled and experienced researchers is still a high priority (63%). However, the related costs of employing them are seen as less important than last year (down to 35% from 65% in 2015). The numbers show that there has for some time been a scarcity of research professionals throughout Central Europe, mainly in technical fields and IT. It is not only the higher demand resulting from Central Europe's economic growth that is driving companies to need more researchers and developers. New technologies are also penetrating all industrial sectors – new software tools and digitisation in banking, for example – where such processes were not commonly used in the past.

The above findings correspond closely to the results of previous surveys. At the same time, comparing results shows that companies are now placing greater emphasis on opportunities to collaborate with universities and research institutes (49%). Professional academics and experts can therefore participate in private-sector projects and put their knowledge into practice.

In an issue related to the concerns that companies find most worrying (summarised in the section below), respondents see the stability and transparency of the regulatory environment as very important (47%).

To what extent would the external factors mentioned below influence the increase of your R&D spending in the coming 1-2 years? (%)

- Availability of more types of benefits (cash grant, tax allowance, etc.) 64%
- Availability of skilled and experienced researchers 63%
- More R&D cash grants as compared to R&D tax incentives 50%
- Access to and co-operation with universities / research institutes 49%
- Stability and transparency of the regulatory environment / state administration 47%
- Lower costs of researchers 35%
- Access to the R&D sectoral and competitors ' benchmarks 33%
- Possibility of co-financing costs of IP protection procedures, including costs of protection maintenance period 27%
- Effective management of IPR resulting from R&D activities 25%
Collaboration with third parties in R&D projects

The good news is that, similar to last year’s survey, most respondents (71%) do collaborate with universities or research institutes. This can benefit both sides. Private companies with sufficient capital gain from access to experienced experts. And universities not only get the opportunity to focus on practical projects – working with the private sector may also be financially beneficial to them.

The main reason why companies co-operate with a third party in this way (be it a university, a research institute or another company) is to complete a development task (75%). A rather lower number of respondents said that working with a third party was a prerequisite for applying for or receiving a subsidy (32%) or receiving a higher subsidy (24%).

Are you cooperating with third parties when you are carrying out R&D projects?

Leaders in collaboration

So where, according to the survey, is third party collaboration most common? The two leading countries are the Czech Republic (82%) and Lithuania (78%), while the least collaboration takes place in Hungary (64%) and Slovenia (50%).

However, a quarter of respondents do not work with any third parties. This is because they have their own R&D centres (36%) where projects can be taken right through to completion.
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