

Central European Corporate R&D Report 2022

Innovation is a fundamental means of raising productivity, and it is empowered by R&D spending. It is no coincidence that successful economies such as South Korea, Japan, the USA, Germany and the Scandinavian countries are also the leaders when it comes to investing in R&D.

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Partner's foreword

Since 2020, we have been living in a very different world. We continue to face the global pandemic with its lasting impact on businesses. Moreover, the war against Ukraine has painfully reminded us that, even in Europe, respect for human life and security cannot be taken for granted in the 21st century.

Access to an affordable and sustainable energy supply has become questionable across Europe, and macroeconomic conditions have been deteriorating over recent months, posing challenges to corporate planning and operations. Against this background, beyond individual measures by governments across Central Europe, the European Commission is also implementing the NextGenEU recovery package that is contributing more than EUR 800bn to help improve the resilience of European economies.

This is the context in which we have carried out the seventh Deloitte Central European Corporate R&D survey, and I would like to express our gratitude to the more than 130 companies from seven countries that took part despite the turbulent times.

Our survey shows that while R&D expenditure is still much lower than the EU average in most Central European countries, some results are encouraging. Rather than decrease it, most companies in the region are planning to maintain or even increase their R&D spend – not just in the short term, but also over the next three to five years.

A lack of qualified researchers is the greatest barrier preventing companies in Central Europe from carrying out R&D, closely followed by the need for greater benefit volumes in the form of grants and tax allowances. That said, more than 30% of respondents do not apply for R&D tax benefits and more than 50% do not receive R&D cash grants when carrying out their R&D projects. Therefore, if companies are set to find it harder to finance their R&D projects from their own resources, greater volumes of – and easier access to – tax breaks and grants will be needed to support future corporate R&D projects. Governments will need to take on more responsibility to address this challenge.

A greater number of companies than in previous years are collaborating with third parties to carry out joint R&D projects. It is even more reassuring that the specific nature of an R&D project is the primary motivation for third-party R&D collaboration, and not simply a requirement for making grant applications or other factors. Collaborative R&D typically ensures greater knowledge, a deeper resource pool and better flexibility when carrying out a project.

Investment in the future must continue, and at Deloitte we are confident that Central Europe will keep attracting R&D projects – particularly in areas and industries of strategic importance.

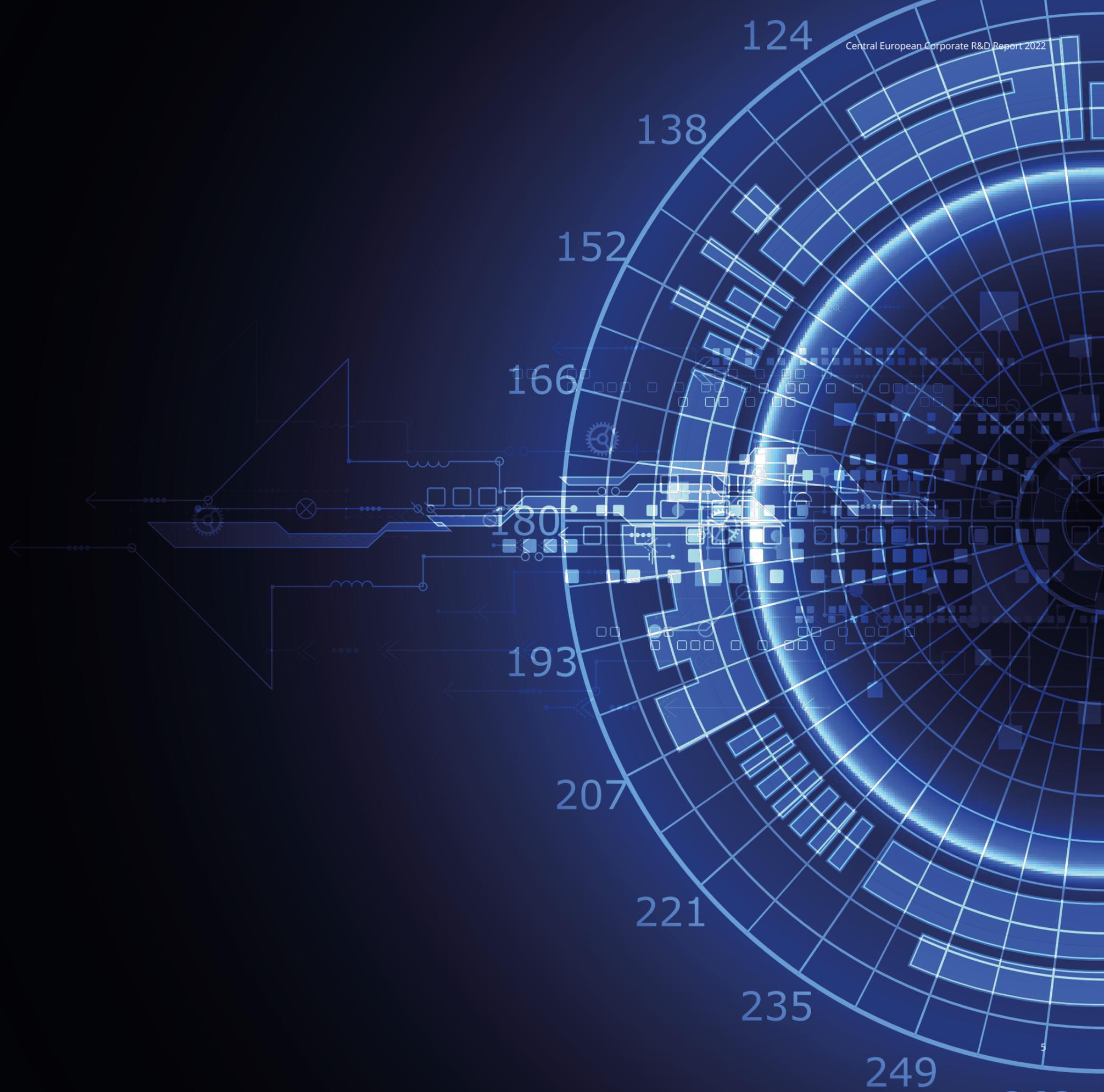


Csaba Márkus
Partner

Analysis

Deloitte's ongoing focus on research and development (R&D) is what has inspired us to carry out this survey – our first research project of this kind since the outbreak of COVID-19 in 2020. As in previous years, the survey's key aim is to map the attitudes of companies in Central Europe to investing in R&D. It also enables us to understand the difficulties companies face relating to R&D, how they protect their know-how and Intellectual Property (IP), and what kinds of government support they use the most.

The survey was conducted between March and June 2022 in seven Central European countries: Croatia, the Czech Republic, Hungary, Lithuania, Poland, Romania and Slovakia.



Macroeconomic view

Similarly to the rest of the world, some countries in Central Europe (the Czech Republic, Slovakia, Poland and Hungary) went through a recession in 2020 due to the onset of the COVID-19 pandemic. Economies remained almost at a standstill for many months while governments used fiscal policies in a bid to mitigate the effects of the crisis.

However, these countries experienced very different fortunes during 2021. While Poland and Hungary returned to their pre-pandemic levels of GDP, the Czech Republic and Slovakia failed to do so. This was mainly due to the highly industrialised structure of these countries' economies: with industry severely affected, significant economic and logistical problems emerged. The backlog of shipments from China and the rest of the world brought about major supply chain disruptions, causing shortages of semiconductor chips used mainly by the automotive sector, as well as other materials and components.

Although the worst seemed to be over for these countries, the beginning of 2022 brought the war in Ukraine, which has had a profound impact on Central Europe. Further supply chain disruption has again adversely affected automotive companies in particular, due to large numbers of subcontractors being based in Ukraine. Production facilities in Russia, meanwhile, have been suspended or written off altogether.

Ukraine and Russia are mineral-rich countries. As a result, there have been widespread shortages of iron ore, oils and, most importantly, oil and gas, increasing the prices of these commodities. In addition, those Central European exporters who used to provide goods to these countries are also struggling.

The EU has introduced several packages of sanctions intended to suppress Russia economically, including a ban on the import of oil, which can be sourced from other countries. A major problem arises when it comes to natural gas, as some countries (including the Czech Republic) are 100% dependent on imports from Russia. Poland has the advantage of existing offshore LNG terminals, enabling it to source LNG from the US. Not all countries have this option, however, and intensive negotiations are taking place at a European level on how to replace Russian natural gas.

Meanwhile, the gas price is rising steadily, and some TTF (Title Transfer Facility) contracts for this winter include prices that have rocketed to several times their pre-war values. This is one of the reasons why countries are trying to fill their gas reservoirs as much as possible so that their economies can survive the months ahead without restrictions.

All these developments were inevitably going to be reflected in rising inflation across the world. Sure enough, this started to grow significantly around mid-2021, due at first to growing global demand and subsequently for the reasons described above.

In a less expected development, rising property prices, which have been growing annually by up to 20% in some countries, have also started to play a role in fuelling inflation. This is less apparent in Poland, where property developers are successfully increasing the supply of new housing to keep up with demand.

Central banks have responded to inflation by gradually raising their interest rates. Countries with their own central banks (the Czech Republic, Poland and Hungary) reacted early by raising interest rates by 7 - 10 percentage points. Monetary policy in the eurozone, including Slovakia, has however only recently started to be tightened. To bring inflation back to within the tolerance band of around 2% over an inflation horizon of 1.5 years, central banks need to prevent those households and companies that are struggling to maintain real wage growth and sustain their margins from resigning themselves to expectations of higher inflation. Failure to do so could lead to an inflationary spiral that would dramatically increase the cost of reducing inflation.

Fiscal support means that none of the countries in the region have been hit by high unemployment rates. The Czech Republic has the lowest unemployment in the EU, and this has risen only slightly to 2.5%. Poland has the second lowest rate with 3.3%, and Hungary's rate stands at 4%. At 8%, the region's highest unemployment rate is in Slovakia.

Economies in Central Europe are now facing lower demand due to the higher inflation that's reducing real household incomes. The energy crisis, which could lead to a complete cessation of natural gas imports from Russia, is a significant risk to which we currently have no viable response. Solutions must be found in mutually supportive redistribution at an EU level and by driving down consumption at a member-state level. While countries are likely to go through an economic recession in the next few quarters, unless further unexpected events emerge inflation may start to recede from next year and household consumption may gradually resume growth. This in turn would kickstart growth across the whole economy. On the other hand, energy prices are set to be high for many years, and companies with low margins may be forced out of business.

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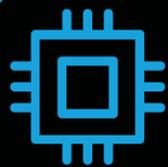
The economy and R&D spend

Investments in R&D play a crucial role in long-term economic development. While economists use GDP as the primary indicator of economic activity, it is not a perfect measure of a country's prosperity. However, there is a strong correlation between GDP and quality-of-life indicators. Economic growth is therefore an essential prerequisite for raising the population's standard of living. GDP can be increased by strengthening the following production factors: labour; capital; and overall productivity.

The most important of these for driving long-term sustainable growth in economic performance and living standards is the last one: increasing productivity. Innovation is a fundamental means of raising productivity, and it is empowered by R&D spending. It is no coincidence that successful economies such as South Korea, Japan, the USA, Germany and the Scandinavian countries are also the leaders when it comes to investing in R&D.



Key findings



In total, two-thirds of respondents are planning to invest the same amount in their R&D activities in each of the next two years as they did in each of the last three years. Only **25%** of the companies surveyed are planning to increase their R&D investments.



The principal drivers that are motivating companies to invest more in R&D are the availability of skilled and experienced researchers (**38%**) and the potential for using a greater volume of grant/tax allowance (**26%**) to have a cost advantage over other countries.



Most companies (**65%**) are collaborating with third parties, such as universities and research institutes, which is proving beneficial for all parties.



The highest proportion of companies protect their know-how and intellectual property by using a company confidentiality policy (**70%**), followed by trademarks (**43%**) and patents and utility designs (**40%**).

Predictions of R&D spending in the years ahead

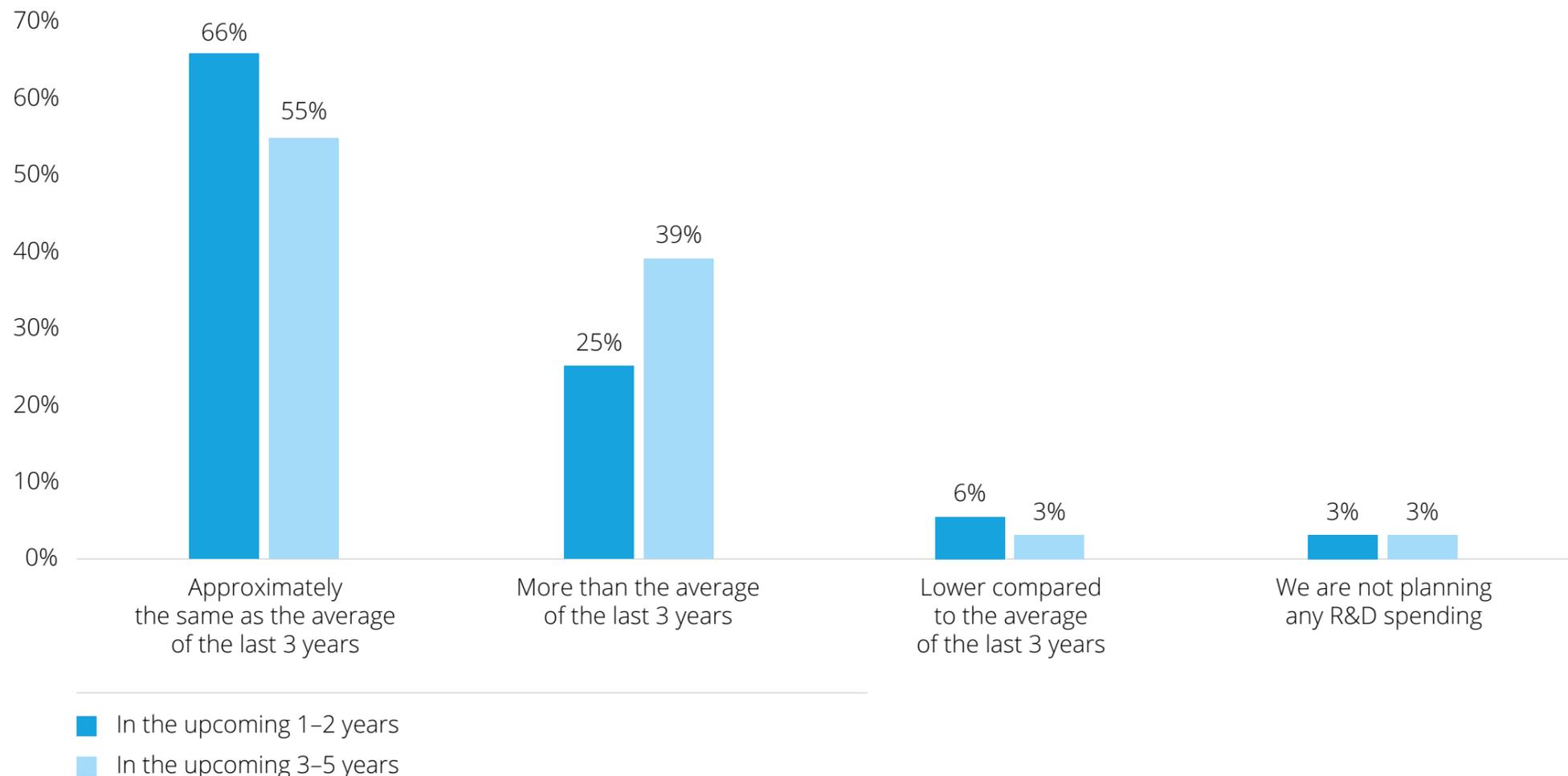
Data from this year’s survey show that two-thirds of respondents plan to invest in each of the next two years approximately the same in R&D as the average of the last three years. Only 25% of respondents are planning to increase their R&D investments.

This means, for the first time since we launched the survey, a majority of companies have no plans to invest more in the next two years than in the previous year. By way of comparison, 52% of companies in 2018 and almost 50% in 2016 were planning to invest more.

Companies are more optimistic about their R&D investments in the longer term (i.e. in the next 3-5 years), with almost 40% of respondents expecting to invest more than in previous years.

This change in attitude can be explained by the circumstances that have occurred since 2020, which we discuss in more detail in the macroeconomic introduction to this report. The global COVID-19 pandemic caused an economic recession and subsequently disrupted international transportation accompanied by extreme increases in the costs of freight. These factors negatively impacted the performance of most companies in the CE region. In 2022, at the time of this survey’s launch, the military conflict in Ukraine broke out. The war, the imposition of economic sanctions against Russia, and the subsequent energy crisis coupled with rising inflation have made most companies cautious in their investment planning.

How much do you expect your company to spend on R&D?



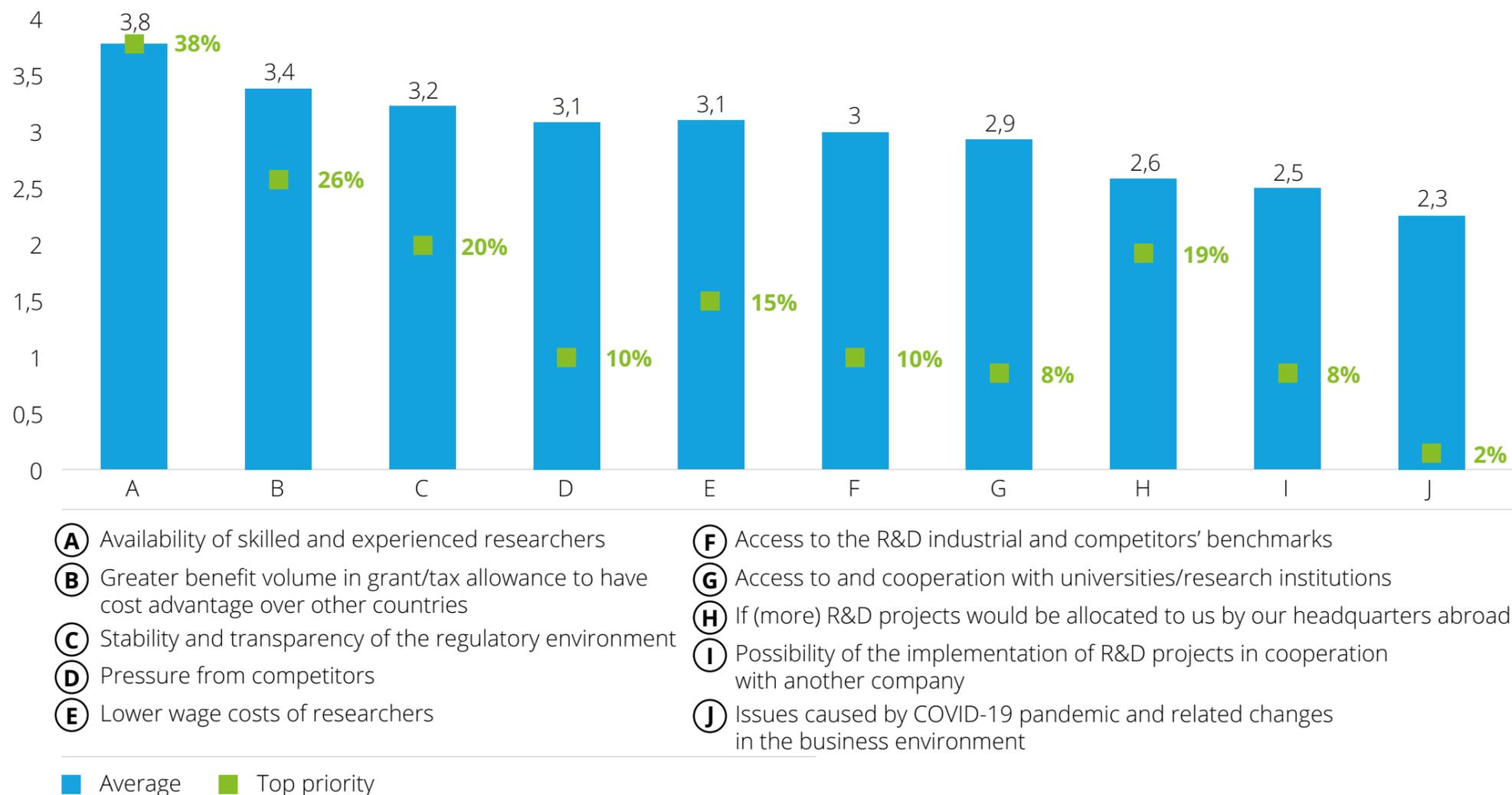
Key factors influencing R&D spending

The companies surveyed consider the availability of skilled and experienced R&D researchers (38%), the potential for using a greater volume of grant allowance (26%) and the stability and transparency of the regulatory environment (20%) to be the most important factors that motivate them to increase their R&D investments.

This year's survey confirmed the long-term consistency in the attitudes of the surveyed companies. Interestingly, despite the challenging economic situation, the availability of researchers (38%) is a more important factor in persuading companies to increase their R&D investments than an increase in existing financial support (26%) would be. Yet, as recently as 2016 and 2018, respondents saw the availability of more financial support (i.e. grants, deductions) and the availability of qualified and experienced staff as almost equally important.

The shortage of skilled workers has plagued companies for many years, and the situation is still not improving despite several proposed solutions. One option is to attract foreign professionals and young graduates. Another could be the adoption of the German model of encouraging collaboration between large multinational industrial companies, which, due to the shortage of skilled workers in the manufacturing sector, agree to share and retrain their employees as needed, so increasing employment opportunities in industrial production.

To what extent will the external factors listed below affect your company's R&D spending over the next 1-2 years?



- (A) Availability of skilled and experienced researchers
- (B) Greater benefit volume in grant/tax allowance to have cost advantage over other countries
- (C) Stability and transparency of the regulatory environment
- (D) Pressure from competitors
- (E) Lower wage costs of researchers
- (F) Access to the R&D industrial and competitors' benchmarks
- (G) Access to and cooperation with universities/research institutions
- (H) If (more) R&D projects would be allocated to us by our headquarters abroad
- (I) Possibility of the implementation of R&D projects in cooperation with another company
- (J) Issues caused by COVID-19 pandemic and related changes in the business environment

■ Average ■ Top priority

The survey also finds that lower R&D staff costs would persuade just 15% of companies to increase their investments in R&D.

When asked about their planned CAPEX investments, the greatest proportion of the surveyed companies told us they expected to spend less than EUR 1 million, mainly on i) technical equipment or new technologies that would enable increased efficiency of internal processes; ii) more transparent administration; and iii) the protection of internal data. Specifically, this would include investments in the equipment and facilities of the in-house R&D department (62%), data protection and cybersecurity (62%), the implementation of new technologies (such as biometrics and AI) and ITC solutions, and the purchase of new software tools (such as CRM and ERP) and hardware like tablets and QR readers (58%).

When it comes to current trends relating to environmental protection (including ESG requirements) and rising energy costs, companies frequently told us about their planned investments of up to EUR 1 million in new travel and transport solutions such as eMobility, Hydrogen, CNG/LNG, etc. (57%) and energy and water-saving solutions (59%).

The survey also showed that many companies are planning to invest between EUR 1 million and EUR 10 million in R&D relating to new products or processes (38%) and those aspects of automation and digitalisation that are linked to Industry 4.0 (34%).

This year's survey confirmed that companies are familiar with R&D incentives, such as grants and tax allowances, although they do not always use these forms of support either singly or in combination with one another. Companies see identifying activities that qualify as R&D as the biggest obstacle to using grants or claiming tax allowances. The vast majority (93%) of the grants actually received by the companies we surveyed are the so-called 'national grants'.

A lack of qualified researchers is the greatest barrier preventing companies in Central Europe from carrying out R&D, closely followed by the need for greater benefit volumes in the form of grants and tax allowances. That said, more than 30% of respondents do not apply for R&D tax benefits and more than 50% do not receive R&D cash grants when carrying out their R&D projects.

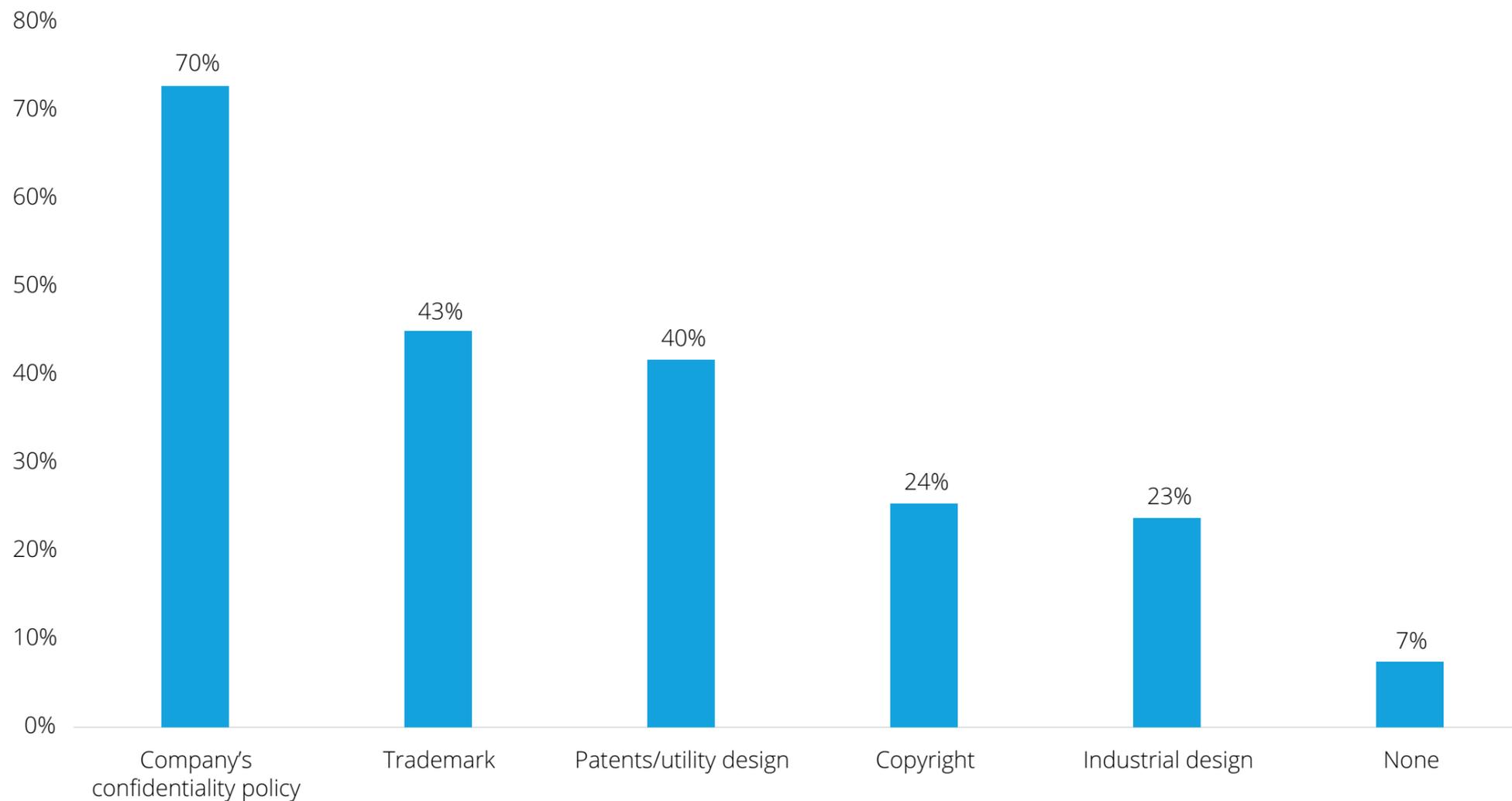
Intellectual Property protection

The survey confirmed the importance of protecting IP, with the vast majority of surveyed companies considering it crucial. There are several different approaches to protecting corporate know-how, which are straightforward to combine.

The company confidentiality policy proved the most popular choice among respondents (chosen by 70%). Protection by trademark was the runner-up, selected by 43% of respondents. A similar share of companies (40%) told us they use patent protection. Copyright and industrial design are popular among a significant minority of Central European companies, chosen respectively by 24% and 23% of respondents.

This year's survey confirmed the consistency of the attitudes among the companies we surveyed. In the two most recent previous editions, the company confidentiality policy was the most popular way of protecting their know-how (chosen by 67% in 2018 and 69% in 2016). The next most popular measures continue to be protection by trademark (chosen by 47% in 2018 and 31% in 2016) and by patent/utility design (chosen by 44% in 2018 and 40% in 2016).

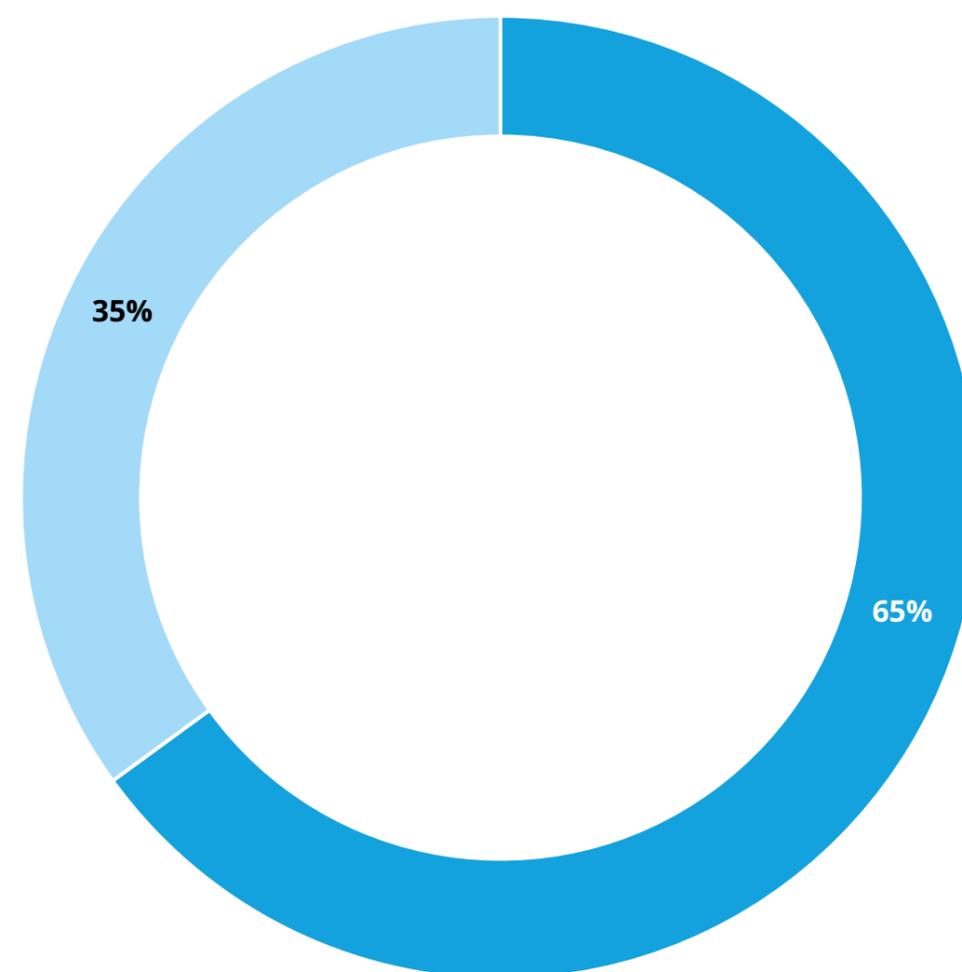
How do you protect your company's Intellectual Property / know-how?



Collaboration with third parties in R&D projects

Collaboration between private companies and academia or other partners can be interesting and rewarding for all parties. It is therefore very popular nowadays, as confirmed by 65% of the companies we surveyed. By working together, companies can get qualified experts to work on their projects, while universities and research organisations can participate in interesting practical projects and get extra funding.

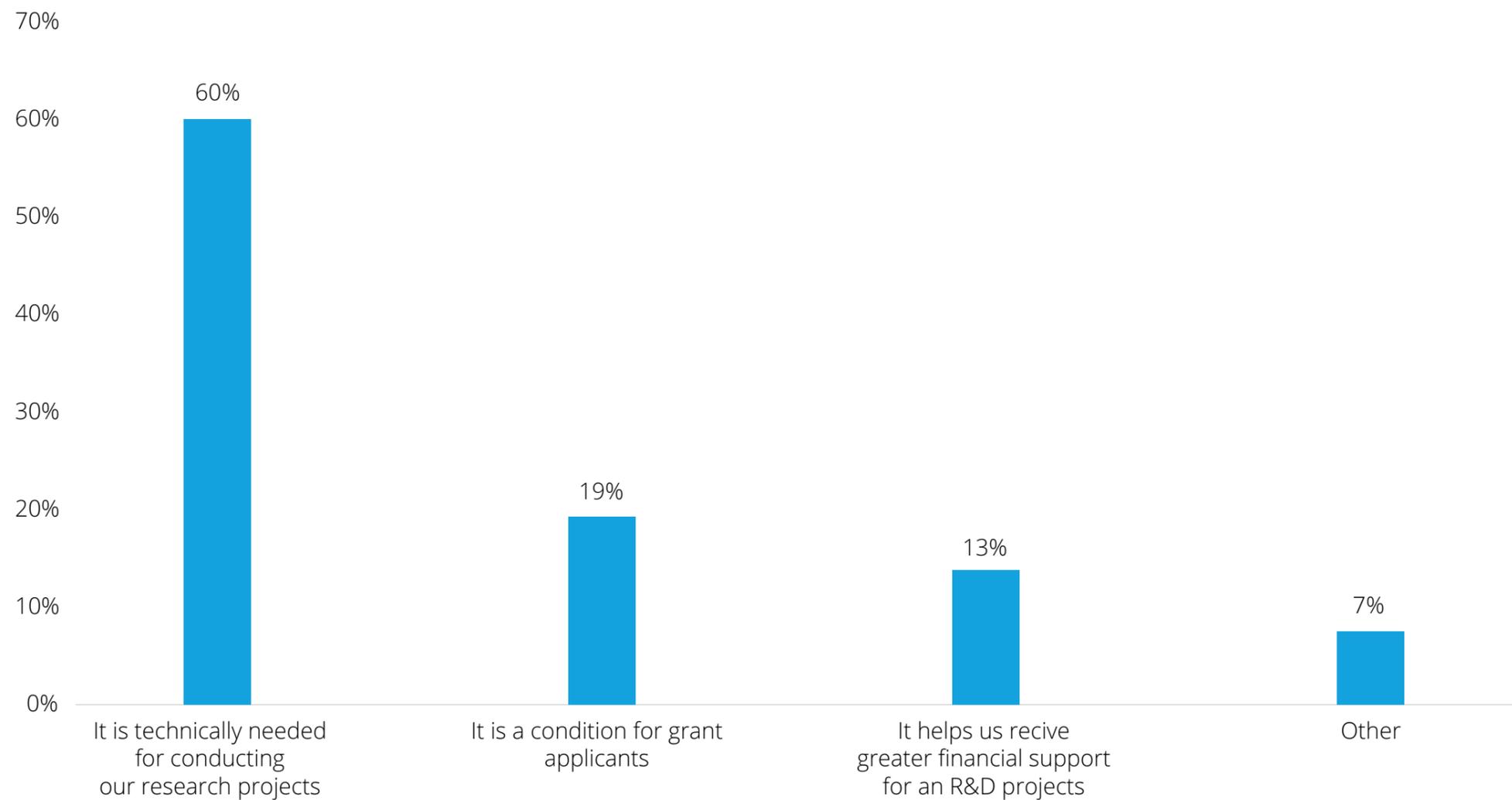
Do you collaborate with third parties when carrying out R&D projects?



■ Yes
■ No

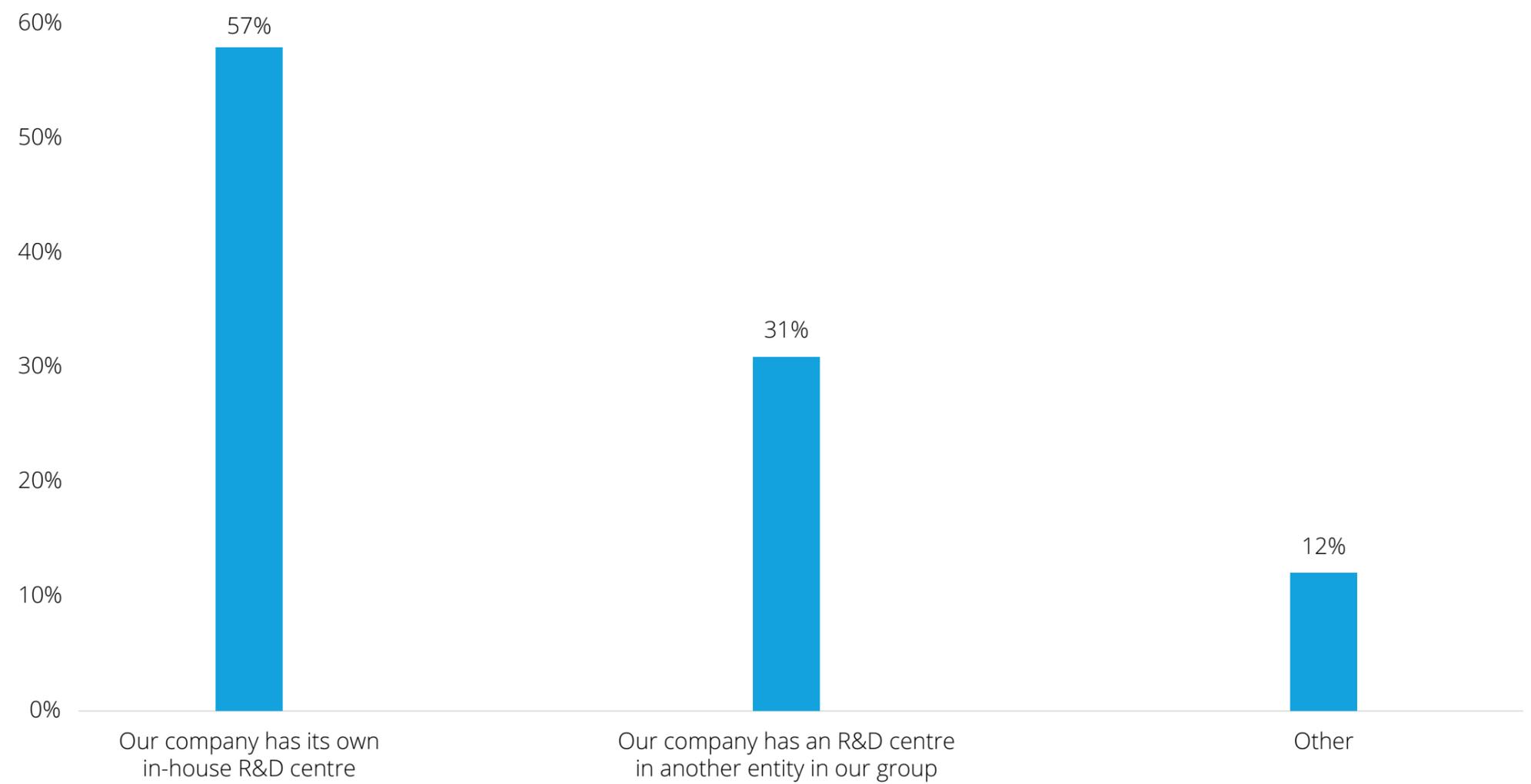
Building an in-house centre of expertise closely focused on a specific area is a time-consuming, costly and lengthy process which may ultimately not be the best solution for a company. For the majority (60%) of the companies we surveyed, collaboration with a third party is essential for the successful resolution of an R&D project.

Why you collaborate with third parties when carrying out R&D projects?



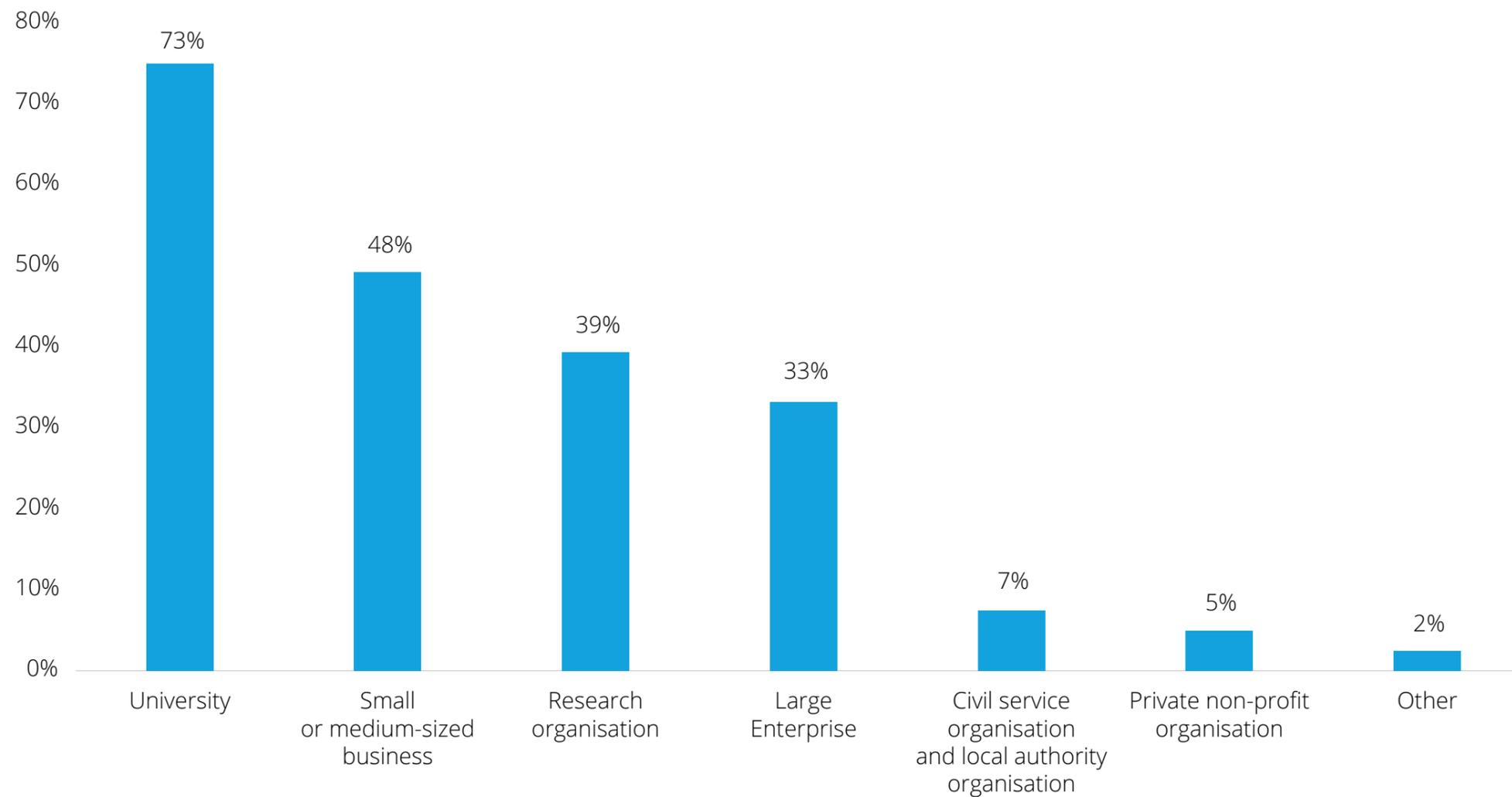
More than a third (35%) of the respondent companies do not collaborate with a third party in their R&D projects, as they have an existing R&D centre, either in house or within the group (90%).

Why you don't collaborate with third parties when carrying out R&D projects?



Universities are the most valuable source of inspiration in the R&D ventures of the companies we surveyed, confirmed by close to three-quarters of respondents. Roughly 50% told us they team up with small or medium-sized businesses when carrying out R&D projects, and 40% reach out to research organisations. A third are affiliated with large enterprises.

Which third party are you collaborating with when carrying out R&D projects?



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