International Innovation Barometer

2022

ayming

FURTHER TOGETHER

Contents & Foreword

Our first Innovation Barometer in 2019 cautioned that demand for Research & Development (R&D) was about to surge. We could never have known how right those findings were.

Since the pandemic struck, businesses have faced previously unimaginable adversity. The drastic and rapid changes in social and economic behaviours have forced an adjustment to business models, both in terms of how they operate and sell.

But it is in this very environment that innovation flourishes. Such fundamental shifts bring both opportunity and risk for all firms. Competition has ramped up and markets are ripe for disruption. No doubt, future sector leaders have been founded during the pandemic. We can already see start-ups emerging with new, future-facing propositions.

In this report, we take a close look at the state of R&D. What effect has Covid had on innovation processes? What obstacles are keeping businesses from innovating? Has funding dried up? Or is it talent?

Our ability to compare to last year's data uncovers these details, while we have developed a third section specifically to explore sentiments towards disruption, whether businesses are keeping up with innovation and the lessons learned from the pandemic. Businesses have risen to the challenge. But to varying degrees.

The problem is the pandemic has created a conflicting paradigm wherein innovation is more essential, but also more difficult. Those who successfully pivot to new opportunities will flourish, while those who don't will be left behind. It's no exaggeration to say that what businesses are doing now is shaping the future.

As we move into the post-Covid economy, innovation will be vital. Not only are economies in desperate need of a boost, but several big challenges lie ahead, such as climate change. But if there's one thing innovators do best, it's solve problems. We have to empower businesses and individuals to innovate because, ultimately, we rely on them for the solutions.

Fortunately, the pandemic has taught some valuable lessons. It has re-enforced the value of R&D and businesses can take inspiration from the many successes, such as the vaccine, and apply it to enhancing the innovation process. The emergence of new technologies and new platforms that facilitate open innovation are cause for enthusiasm.

All of this, though, depends on funding. Businesses must have access to the funding to ramp up R&D activity, for which there is a role for us in helping to ensure they have all the funding possible and are making full use of the significant state funding that is now becoming available.

This report is our biggest and boldest yet, with almost twice as many respondents as last year. We hope you find it a helpful resource for your own innovation.

Hervé Amar
President
Ayming

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Section 1

The Innovation Landscape

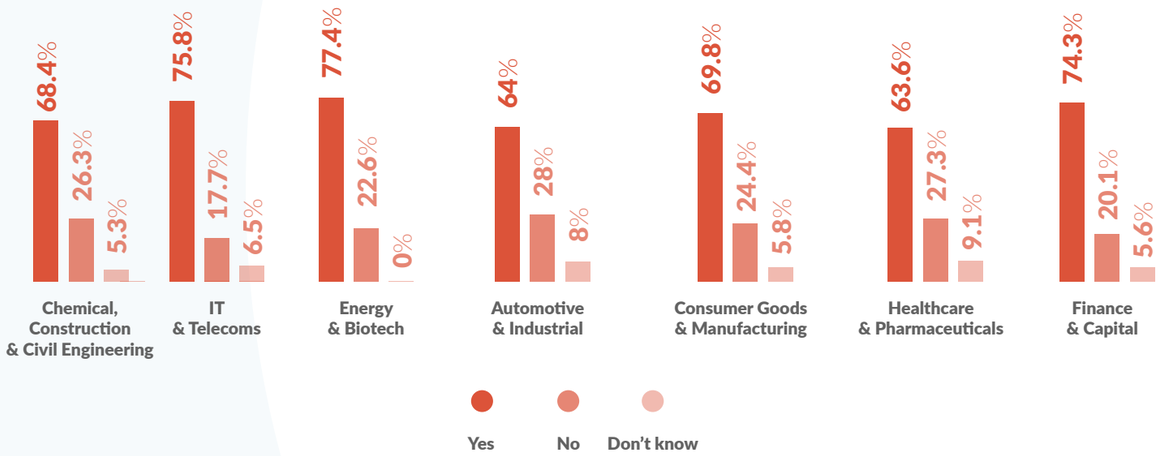
After one of the most turbulent and transformative years in living memory, in which radically innovative goods, services and inventions played a critical role, attitudes to innovation more generally have inevitably changed since we published the second International Innovation Barometer in 2020.

There is a growing pressure on organisations to do more, faster. Short-term growth has become a much more important driver. And public resources and funding are playing a more important role.

Complexity and confidence

Looking at the numbers in more depth, the number of respondents who feel their organisation undertakes enough innovation has fallen 14 points, from 85 per cent last year, to 71 per cent this year. Conversely, the share of respondents who feel that not enough innovation is being done has almost doubled: from 12 per cent to 23 per cent.

Does your organisation undertake enough R&D?



The number of respondents who believe that innovation is being driven by the increased capabilities of their own R&D team has also fallen, from 36 per cent to 20 per cent. Faith in internal R&D is particularly low among the Chemical, Construction & Civil Engineering sectors.

Part of this seeming loss of confidence can be attributed to timing. In 2020, the data was gathered at a time when many believed that Covid-19 would be a short, albeit dramatic, event. Now, as a more established feature of daily life, it has triggered a growing sense that current prosperity is rather fragile.

"We've been speaking about a VUCA world for about 30 years," says Fabien Mathieu, Partner and Managing Director at Ayming France. "Volatile, uncertain, complex, and ambiguous: really since the end of the Cold War, when some of our more simplistic assumptions and easy alliances swiftly eroded. Today it's the climate crisis. Given that the past year has put health risks – to us as individuals and as societies – under the spotlight, we perhaps shouldn't be too surprised that confidence in innovation strategies has dropped."

Innovation hotspots

As ever, there are sectoral differences and intra-country contrasts. The sector with the least confidence in its innovative capacities is now health and pharmaceuticals, despite dramatic breakthroughs in vaccine development. Lack of confidence is also most often expressed in Belgium, Spain and Ireland.

The most confident nation remains the US (alongside the Netherlands). There are inevitably long-term cultural reasons: the US has always considered itself the land of opportunity, which perpetuates the belief in itself as the home of innovation.

It also helps that the US is still riding high on a period of economic momentum that began during the previous administration and appears to have been given a boost by the new incumbent's willingness to provide more incentives for ambitious infrastructure projects.

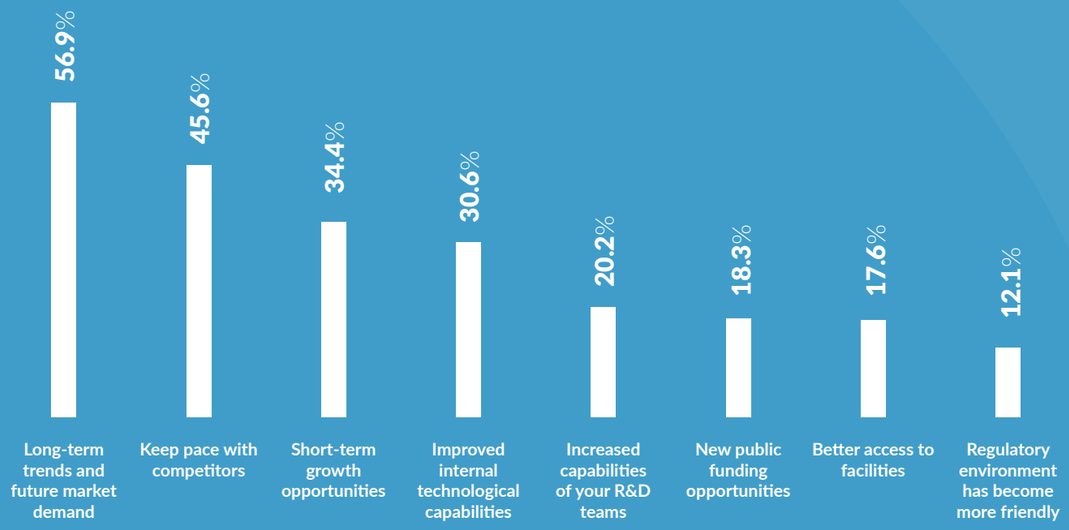
The long and the short of it

As to drivers of innovation, long-term trends and future market demand remains top of the list: in fact it has jumped from 38 per cent last year to 57 per cent this time – rising further still, to 72 per cent, among consumer goods companies. The number citing keeping pace with competitors as a driver also increased from 37 per cent to 46 per cent. Rounding out the top three, short-term growth opportunities are a driver for 34 per cent of respondents – an increase of 13 points and a leap from last place to third.

"Innovation strategies have always expressed a duality between the short term and long-term prospects, says Mathieu.

> "One is about surviving the current battle. One is about winning the war. That both have increased in influence suggests that businesses are looking at more sustainable innovation, knowing that current challenges have to be overcome to give the business a fighting chance of longevity."

What are the main drivers for your R&D strategy?



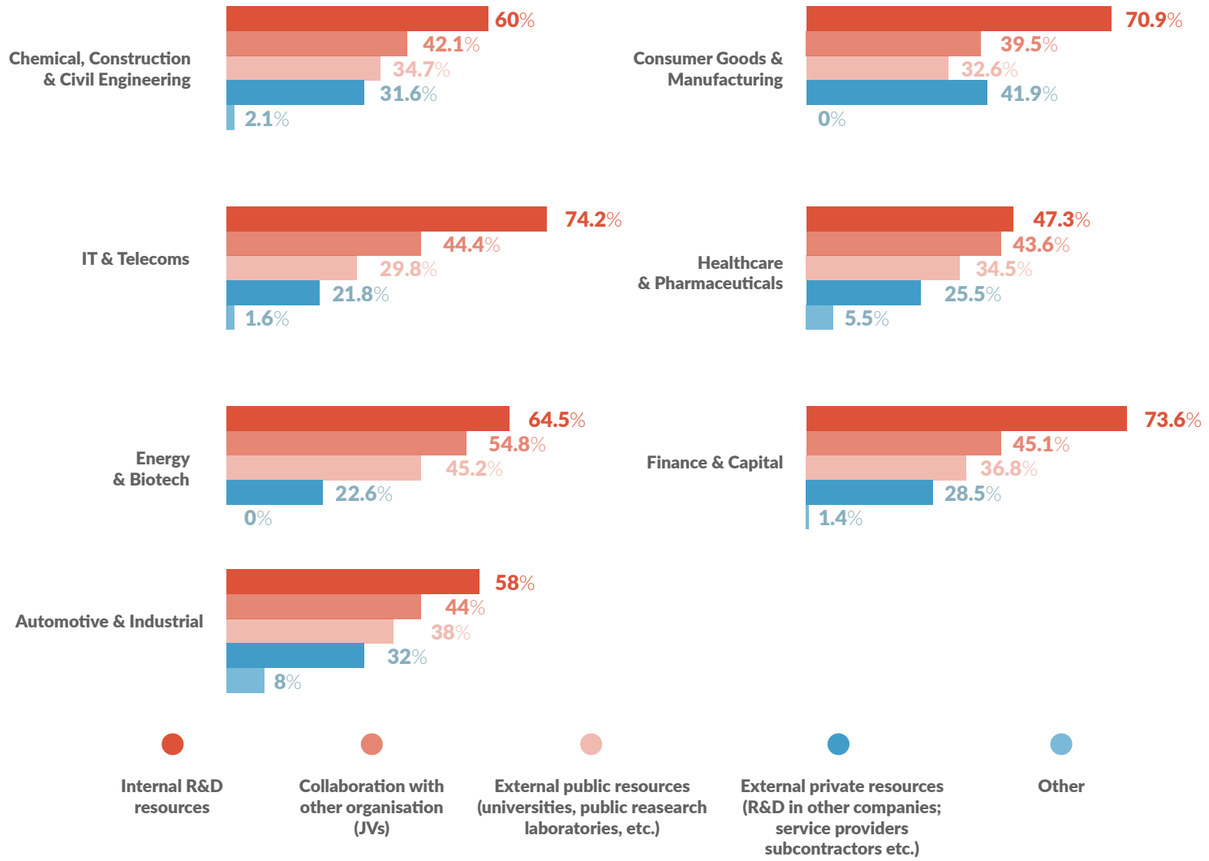
Business leaders will therefore need to manage and direct innovation over several timeframes, which will almost certainly increase demand for more predictability in product and service development and is likely to re-define what is expected of minimum viable products (MVPs).

Insiders and outsiders

When it comes to the resources firms rely on for innovation, the overall picture is one of growing dependence on internal R&D resources, as firms stuck with the trusted and familiar over the past twelve months. “Internally, you have people who are used to running customer projects to a certain rhythm,” says Olivier Taque, Innovation Project Manager at engineering services company Bertrandt, who is based in France.. “So while we always want to work with engineering schools and the like, there is a certain reliability and agility that comes with internal resources – something that will have been very important in the past year.”

External private resources, such as R&D from other companies, service providers, or subcontractors, remain the least relied on – but the spread between most and least preferred options has again increased. The share of companies turning to internal resources has grown from 58 per cent to 67 per cent, while the share using external private resources has decreased dramatically from 47 per cent to just 29 per cent. This is a major reversal from the position reported in 2020, when there was a major jump in the use of external private resources.

What resources do you rely on for your innovation/R&D?



However, the number of firms looking to external public resources, such as universities and public research laboratories for their innovation work has also seen a drop over the past year, albeit less severe – from 42 per cent to 35 per cent. What’s more, the share of organisations who say that their ability to access new public funding opportunities is a key driver of innovation has fallen from 25 per cent to 18 per cent. These changes can in part be laid at the door of recent changes to national schemes for R&D tax credits, which have altered the incentives for commercial cooperation of this nature.

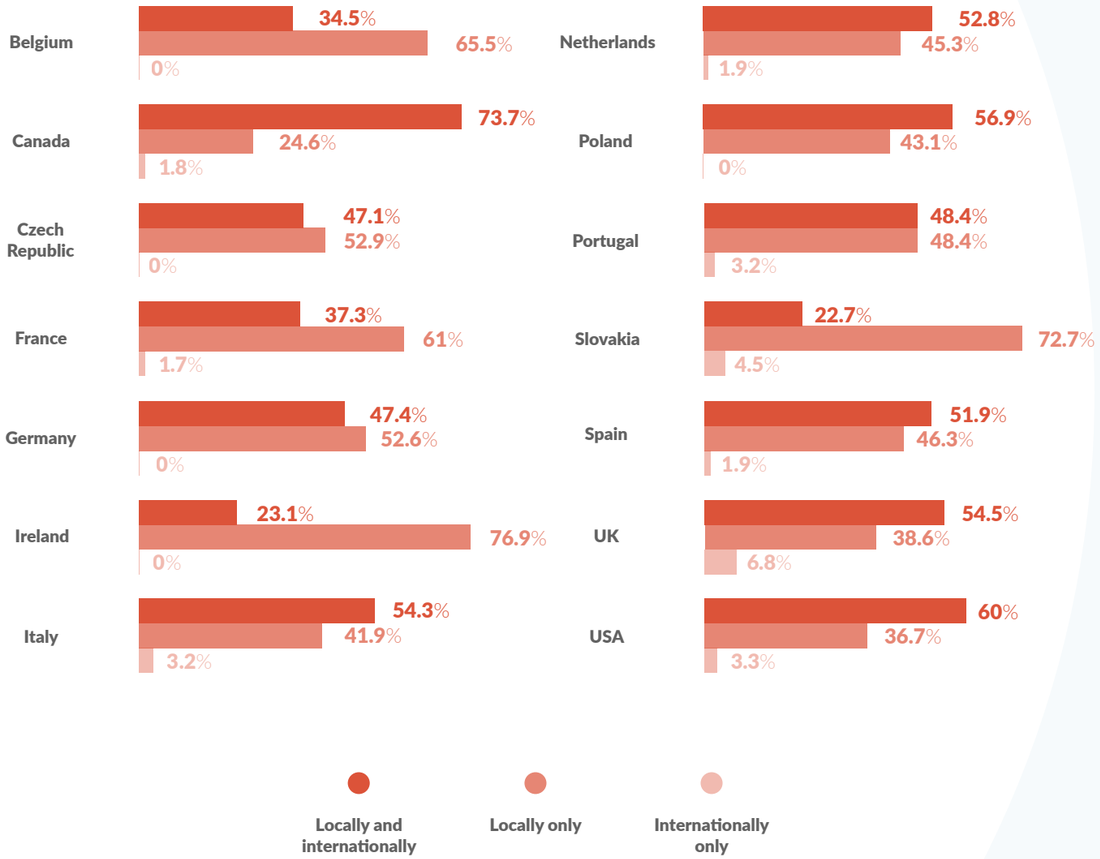
The area that has remained most steady – for now – is collaboration or joint ventures with other organisations, which was the preference for 43 per cent (last year) and 44 per cent (this year). Collaborations are more frequent in the US and Canada and run at their highest among Energy and Biotech firms but are lowest among consumer goods and manufacturing firms who are both more reliant on external private resources. This sector contrast is likely driven by the different competitive natures of these sectors.

Nonetheless, the amount of collaboration is likely to increase from this point. A more collective intelligence will be necessary to tackle the big projects of tomorrow: the challenge will be to harness the possibilities opened up by remote working, while overcoming the difficulties it presents in initiating and cementing effective partnerships. Nonetheless, we can expect a more open approach to building innovative ecosystems, driven by necessity if not self-interest.

Local vs global

There has been a subtle retraction from internationalism in the past year. Local-only innovation has increased from 42 per cent to 47 per cent, while international-only has dropped from 11 per cent to a mere two per cent. For those who do opt to innovate internationally, the US is the top choice, followed by Germany and the UK.

Do you carry out your innovation locally, internally, or both?



Given the pandemic mitigation measures that have made travel more difficult and logistics even more challenging, it is perhaps not surprising that firms have looked closer to home for their innovation sites. But there is also a more atavistic reason behind it: the urge to 'buy local' is still strong, and a local anchor is a key strength for many marketing campaigns.

For Taque, the reasons for local innovation are largely to do with language, culture, and customer expectations.

> "Innovation is about technique, but it's also about markets."

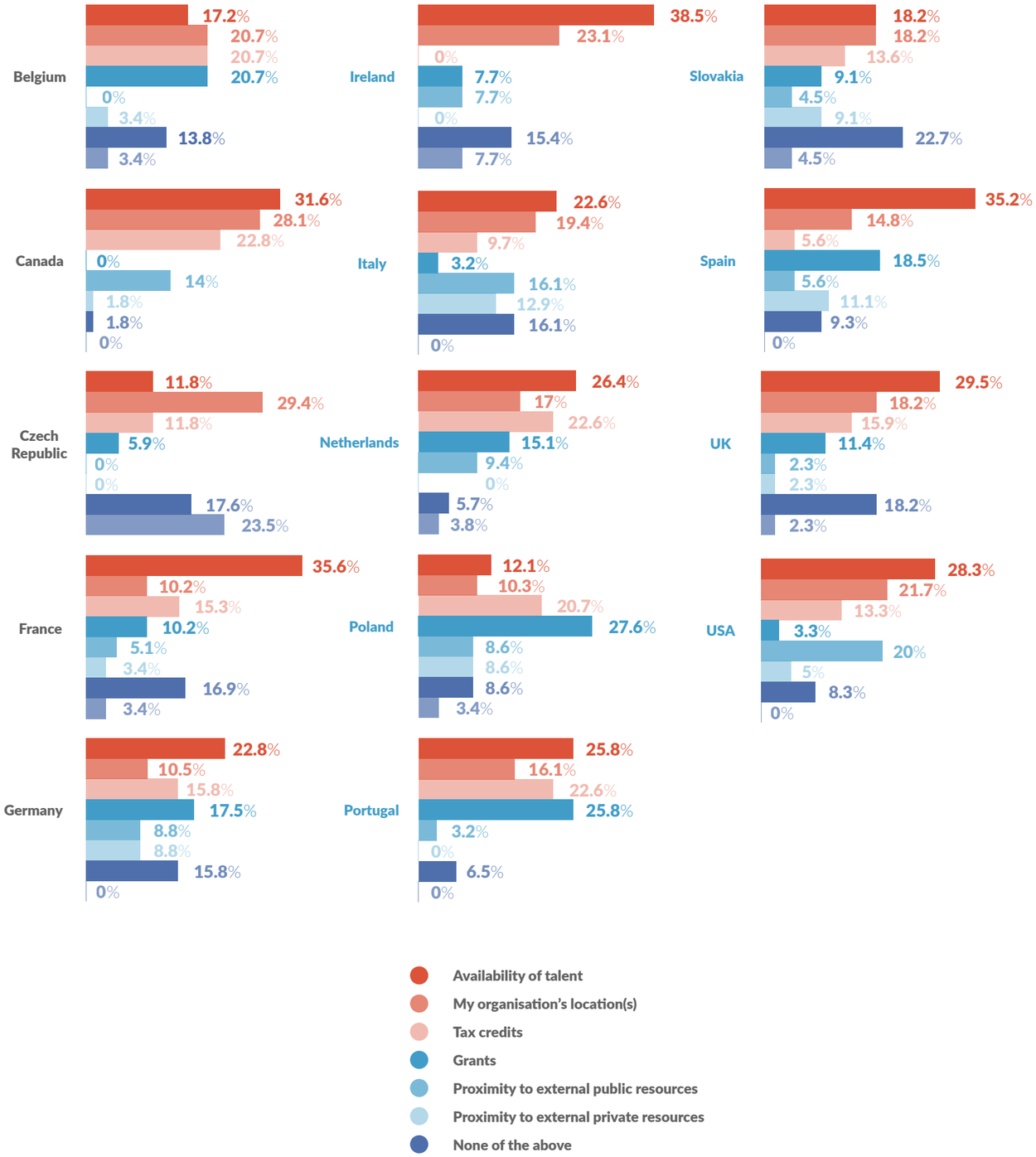
"Is the market ready at the right time for your preferred innovation? Are customer demands the same in different locations? They go at different speeds, so there is rarely a universal requirement or demand."

However, the number of firms who combine local with international innovation has increased slightly from 47 to 51 per cent and remained the most popular option. The mixed model is most prominent in the US and Canada, where businesses are also more likely to look to collaborations to resource their innovation.

Follow the talent

We also asked respondents which factors influence their choice of innovation location. Once again, availability of talent tops the list, and is most likely to influence companies in France and Ireland, as well as companies in the Healthcare & Pharmaceutical sectors

Which of the following influences where you decide to carry out your innovation?



"The way we view talent has shifted over the past year, says Mathieu. "There's growing concern surrounding the current cohort of graduates, who have missed out on important aspects of their university education. The pipeline is perhaps not as gold-plated as once it was."

"Access to talent is obviously a key driver of innovation," says Tina Carling, Innovation Director at Morgan Sindall Infrastructure & Innovation.

> "But the world is changing, and people could well be reassessing their priorities, so companies need to think about how they continue to attract them, and that could well be a question of location."

However, this year the availability of tax credits (16 per cent) has moved up the rankings and is now ahead of grants (13 per cent) as the funding mechanism most likely to influence the location of innovation effort. "Grant schemes have not necessarily proved their value over the past few years, with success rates lower than expected," says Mathieu. "Tax credits present less risk to the public purse. With Covid recovery packages coming into play, I expect a more complementary balance between grants and credits to be the norm."

Key observations

Given the upheaval faced over the past year, it is perhaps not surprising that many businesses have struggled to innovate as much as they might like. This is reflected in the general shape of R&D activity, which has become a more insular affair. Companies are more likely than in the past to depend on their own internal resources to innovate and slightly less likely to look to international innovation efforts to drive progression.

As the world begins to open back up over the coming year, we hope to see a reversal of these trends – and a resurgence in confidence in R&D teams' abilities to be real drivers of innovation.

Talent will be central to this and companies will be keeping a close eye on the health of the next generation of innovators as they plan their R&D efforts moving forward.

Section 2

Financing Innovation

After a year of extreme uncertainty, it is recognised that more innovation is needed to face the next wave of challenges – whatever form they take. “R&D growth is really driven by the customer base,” says Carling.

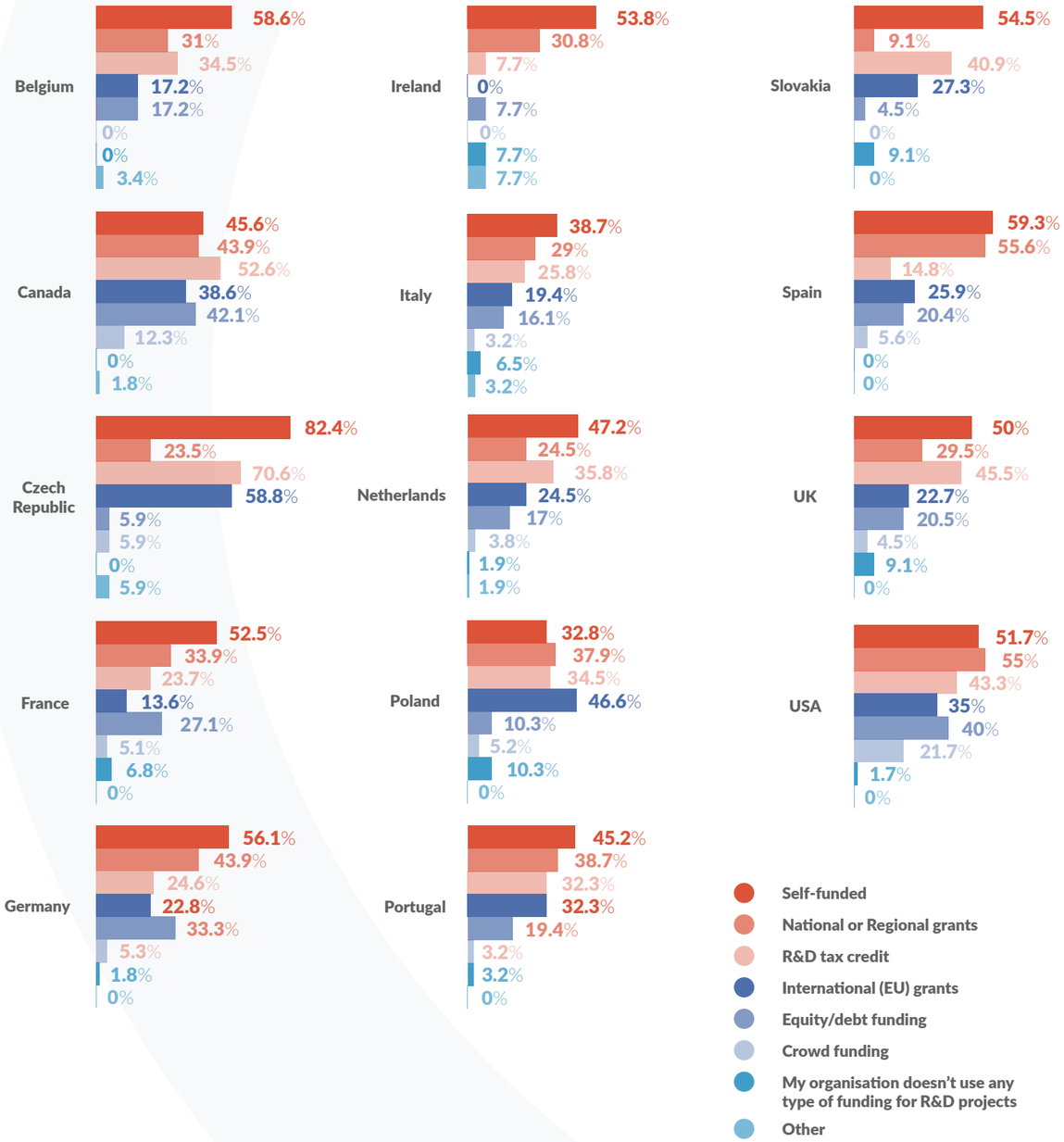
“All the new contracts are demanding innovation. Government is demanding innovation. They know the old way of doing things isn’t going to get us where we need to be – especially around decarbonisation.”

For that to happen, however, steady and sustainable funding is necessary.

Finding funding

As expected, most innovation remains self-funded. Half of all respondents finance their innovation this way, slightly up from last year. All other forms of funding declined over the past year.

What types of funding does your organisation use for R&D projects?



National or regional grants remain the second most common source, and the choice of a steady 38 per cent. R&D tax credits are in third place, but here there has been a substantial shift. A year ago, 46 per cent saw tax credits as a source of funding: that has fallen to 34 per cent.

"Tax credits are normally counter-cyclical: when the economy shrinks, the appeal of 'free' money goes up," says Mark Smith, Partner R&D Incentives at Ayming UK. "Maybe excessive uncertainty upset the normal rules. But maybe the economic impact of Covid-19 was less severe than anticipated. Substantial amounts of government funds were returned, which adds weight to the latter view."

Reliance on international (EU) grants fell from 37 per cent to 28 per cent of respondents. The recent launch of the €800 billion EU fund could well see a reverse of this in the near future, but Taque adds a note of caution, pointing out that: "It depends on the size of your company. Under EU rules, once you have 500+ employees your access to EU funds is limited. Local grants therefore will still play a major role, even in the single market."

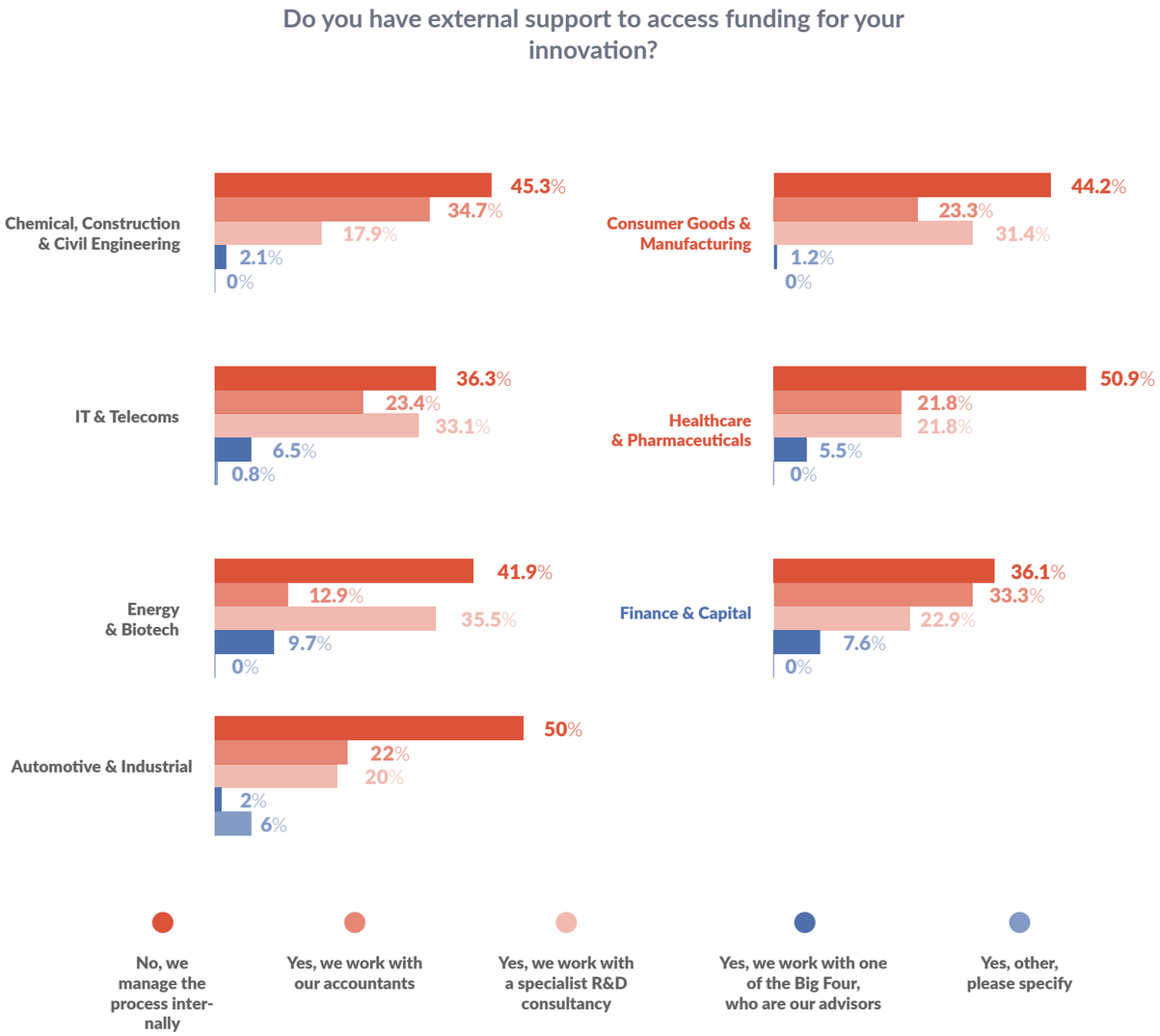
As for private funding, equity and debt funding, previously relied on by 33 per cent, are now a funding source for only 23 per cent of firms. Widespread availability of cheap debt from government recovery schemes has not necessarily led to widespread take-up, while greater risk aversion may account for reluctance to embrace equity funding. Crowdfunding has fallen a massive 22 points: from 29 per cent to just seven per cent.

"Through the pandemic, people have been spending less and saving more. So, there are untapped retail resources out there – especially in Europe," says Smith.

> "The question is more about how best to match those investors with investment opportunities. Crowdfunding is often about feel-good factors, like early product access, over solid returns. That's not where people want to put their savings right now."

Asking for advice

As funding has decreased, so too has the number of firms looking for external support to access it. Last year, 27 per cent managed funding access internally: this year it is 42 per cent.



The number who work with accountants in general has increased by a few points, but the Big Four are an option for only five per cent – down from 15 per cent last year. One factor here is that companies have recognised that generalists at giant consultancies often do not have the R&D knowledge required. However, even specialist R&D consultancies have become less popular, albeit with a smaller decline from 33 per cent to 26 per cent. This fits the broader trend of firms cutting spend on external advisors in times of economic adversity. But companies have also recognised that generalists at giant consultancies are not necessarily providing the service and skill required.

According to Smith, this could be a false economy:

> “A good advisor more than pays for themself, either by introducing a more efficient process for accessing funding, by standing up more robustly to tax-authority audits, or just by optimising a claim. That’s why the benefits of a specialist adviser more than outweigh the fees paid.”

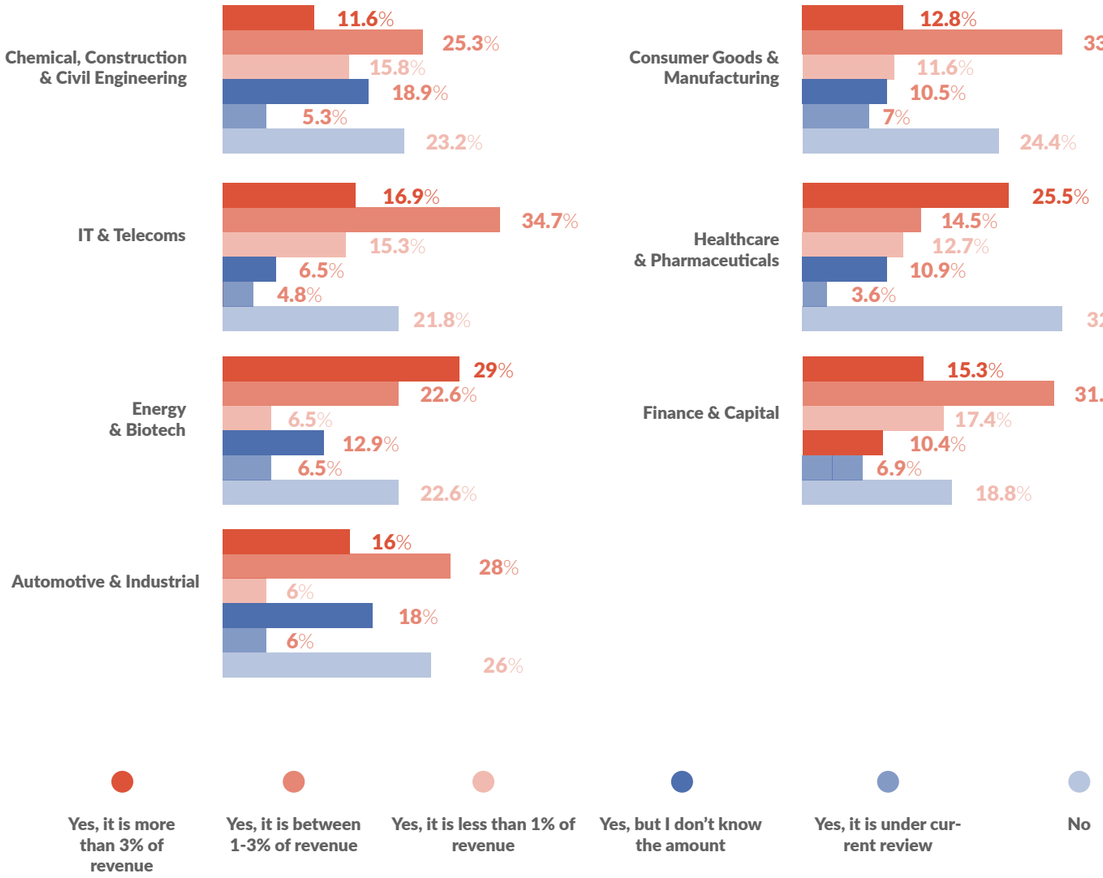
Carling agrees: “Private funding could actually be a really exciting opportunity, as lots of major players have funds to distribute. The thing is, you need really good peripheral vision to see it all and engage with it all. And many businesses, especially SMEs, don’t have that resource in-house.”

Uncertainty around budgets

The number of firms with a defined R&D budget has fallen from 90 per cent to 77 per cent, although it is notable that the number of respondents who know the size of the budget has increased slightly.

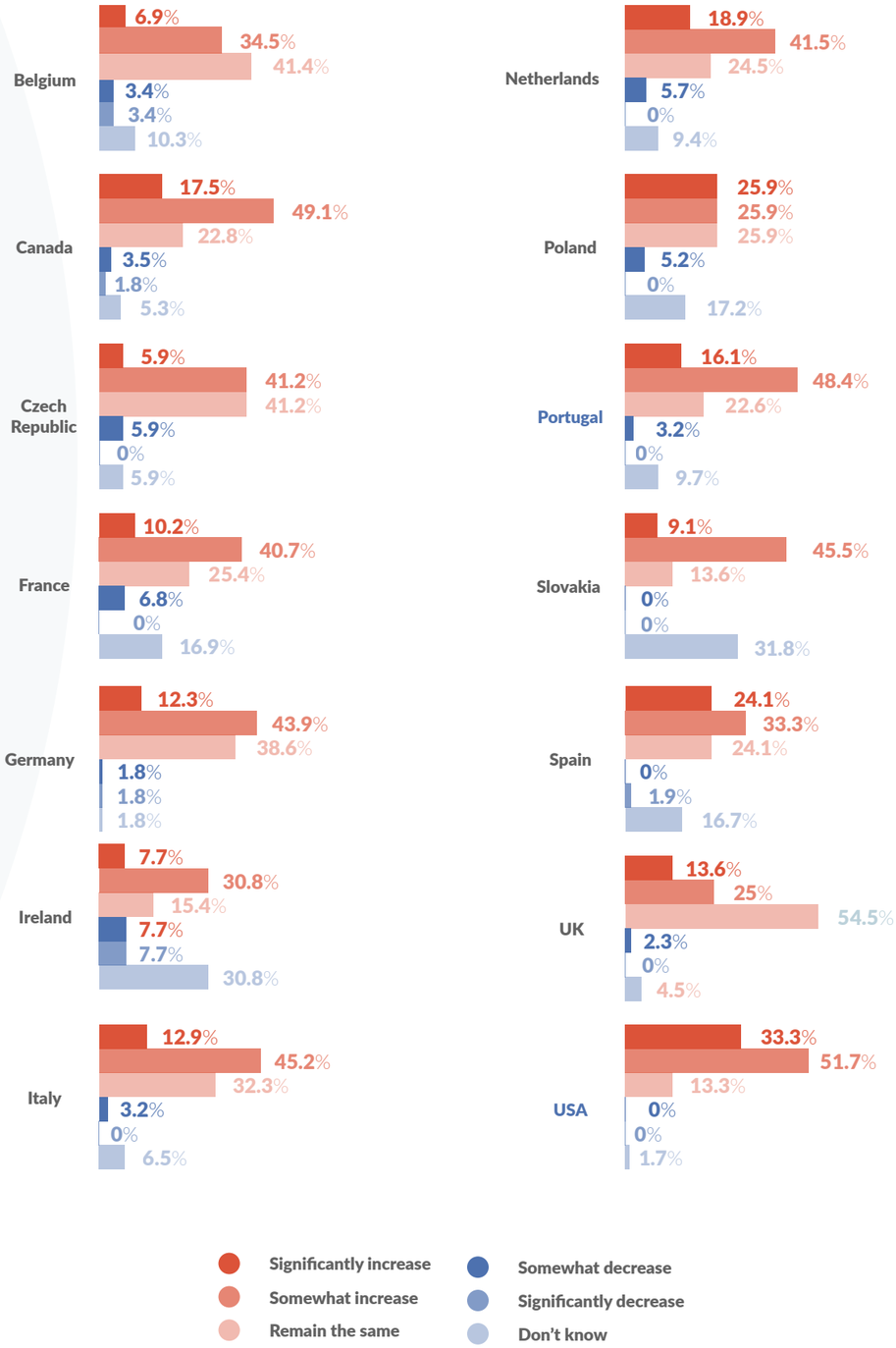
Looking at innovation cost as share of revenue, the number who say it is less than one per cent or more than three per cent of revenue have remained (almost) identical. The big shift is in the mid-range, where companies’ R&D budget is between one per cent and three per cent of revenue. Forty-one per cent of firms fell into this category last year; this year it is 29 per cent.

Does your organisation have a defined budget for R&D?



"This is concerning – and a little surprising. Now is not the time to cut R&D budgets. The most successful companies are those that spend more on R&D, and post-pandemic growth will involve investment and even taking some risks," says Smith. "Cut expenditure too hard now, and you cut your ability to do business – and with it, your ability to bounce back."

In the next 3 years, will your organisation's R&D budget:



Will those budgets return over the next three years? Fifty-seven per cent say budget will increase, although the number who say it will be a significant increase is down five points from last year. The share of respondents expecting a decrease of some kind has also fallen marginally. The slightly bigger shift is among those who simply don't know: up four points to 10 per cent. Covid-19, climate uncertainty and a changing regulatory regime in specific sectors appear to be taking their toll.

Influencing investment

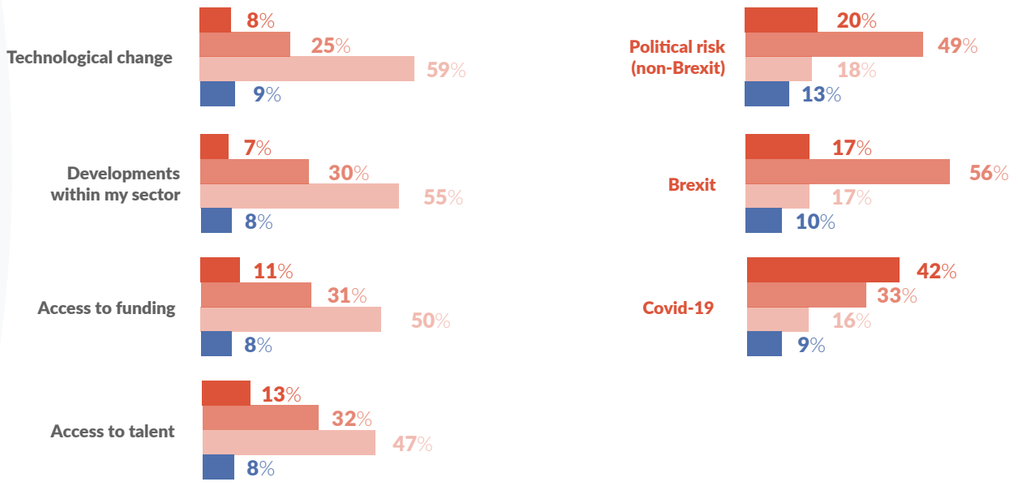
As to the factors that will have a beneficial effect on R&D budgets, technology is still number one, although belief in its positive impact has decreased over the year. Many believe technology is finally living up to the promises that have been espoused for so long, and regard technology as central to what they do. It is increasingly rare to submit a claim for R&D tax relief that does not have a technology-related component to it, and even traditional companies are increasing their investment in technology development, and with it, their future.

If anything, there are some indications that technology has become more 'business as usual' and less an enabler of new development. The number of respondents expecting it to have no impact at all has gone from 21 per cent last year to 25 per cent this year.

The potential impact of sector-specific developments on budget shows a similar pattern. Here too, there is a slight but discernible drop in positive sentiment overall. Those who believe these developments will have a positive impact on budget has fallen from 62 per cent to 55 per cent, while those who believe they will have no impact at all has risen slightly from 27 per cent to 30 per cent.

Given the funding situation outlined above, it is no surprise that the share of respondents who believe funding will have a positive impact has declined. But only by a few points. However, because the number who believe it will have a negative impact has gone up by a similar number there is a decrease in net positivity.

How will the following factors impact your organisations R&D budget over the next three years?



Nonetheless, access to funding has overtaken access to talent as a positive influencer of budget. Less than half now think that access to talent will have a positive impact on budgets, compared to 57 per cent last year. The net positivity score (the number who believe it will have a positive impact, less those who believe the opposite) has dramatically fallen from 49 to 34 points.

“Talent is the big one. Most people think that companies innovate. They don’t. People do,” says Carling.

> “Innovation should be democratised. It’s everyone’s job. So, you need to encourage the culture, and language and behaviours to allow that to happen – and provide the right tools to empower and enable collaboration. But it starts with having the right people.”

Politics and the future

There is better news around (non-Brexit) political risk. Almost half of respondents (49 per cent) believe that political risk will have no impact on their business at all, and the number who believe it will have a negative impact has dropped from 25 per cent to 20 per cent. Nonetheless, the number who think it will have a positive impact has also fallen from 38 per cent to 18 per cent. The number of ‘don’t knows’ is also slightly higher, at 13 per cent.

As for Brexit, it seems to have fallen out of the risk factors: the number who feel it will have no impact has increased from 38 per cent to 56 per cent, while those who feel it will be negative has dropped 14 points from 31 per cent to 17 per cent. The number who believe it will have a positive impact has also fallen, but only by four points.

Finally, there’s the unavoidable impact of Covid-19, which we consider in more detail in the next chapter. Unsurprisingly, most respondents consider it to be a negative impact on their R&D budget. But the number who believe it will have no impact is an encouraging 33 per cent, double the number who think it will be positive.

Key observations

Reflecting the wider innovation landscape, companies have taken a more insular approach to financing innovation over the past year, with a greater dependence on internal sources of funding – and a reduction in the use of external support to access broader sources of budget.

This echoes a reduction in budgetary certainty, with fewer firms reporting defined pots set aside for R&D than in the past. That said, there remain reasons for optimism.

> “Obviously there have been fundamental changes in the economy over the past year. This creates problems but it also creates huge opportunities,” says Smith. “Companies can look to how they exploit these changes, and while there are plenty of indications of uncertainty here, there are also promising signs. The pandemic has not flattened business or its desire to innovate. That is very encouraging.”

Section 3

Innovation in a crisis

Businesses may have run into some challenges this year. Most have faced circumstances that have demanded rapid adaptation.

However, it is how businesses have reacted that will determine their future success. History tells us that it's vital to innovate through a period of significant change.
In this section, we examine sentiments about the sudden changes across the economy, how businesses have reacted, and the lessons they can learn as we emerge out of the crisis.

As Carling says, "It's made business leaders think 'hang on a minute, everything could change in a moment, so we need to be more agile. We need to be more flexible.' Agile was a word that people just used to use without knowing what it meant, and now you really have to practice it."

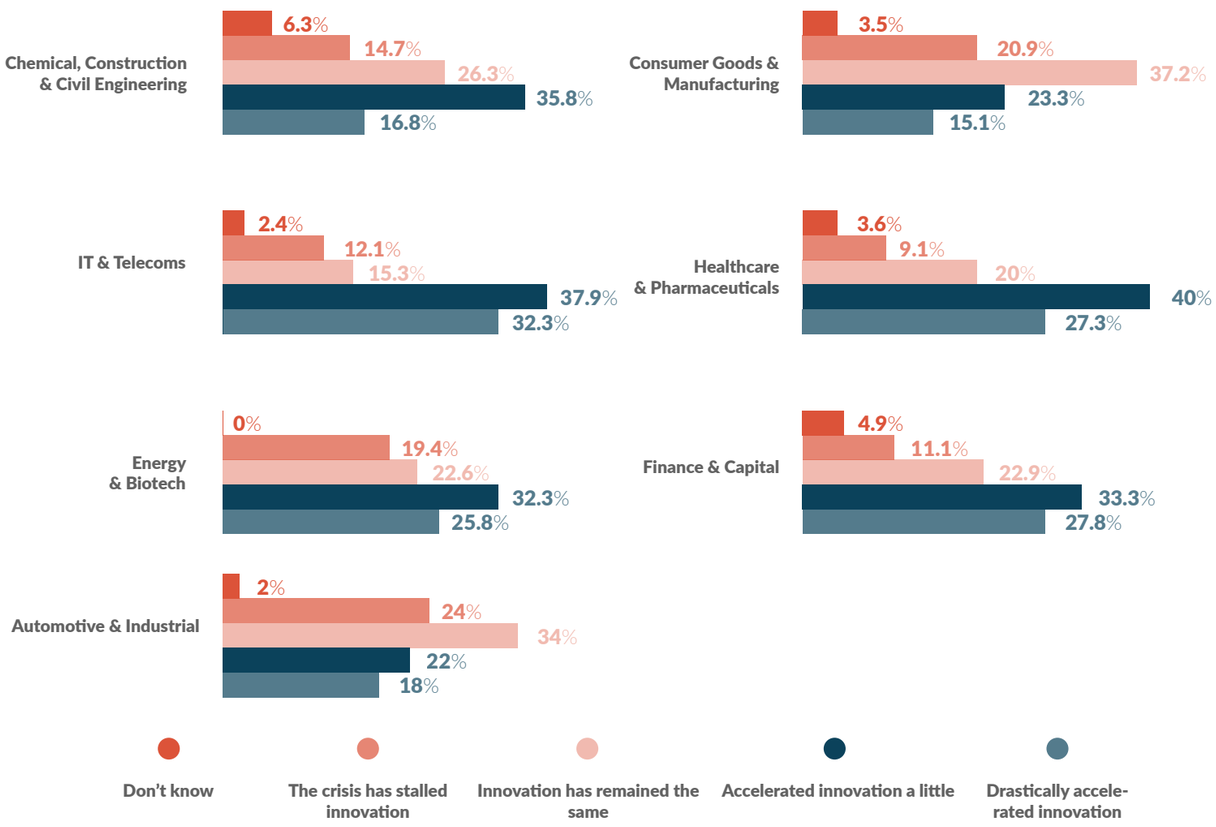
Levels of disruption

The last year has created the perfect opportunity for disruption. The majority (57 per cent) believe that Covid-19 has accelerated innovation in their market. A quarter of total respondents say this change has been drastic.

There's been a mixed impact across the economy and the effects have varied sector to sector. Retail, Hospitality and Tourism businesses have obviously been hugely impacted whereas some sectors are thriving.

Among our respondents, IT and Telecoms firms are most likely to believe Covid-19 has drastically accelerated innovation in their market. "The pandemic has demanded significant digitalisation," says Thomas Folsom, Managing Director at Ayming USA. "When thinking about innovation through the pandemic, that's what often comes to mind. It's been key to survival. Both in terms of pivoting selling to online and setting up systems for working at home."

How has the Covid-19 crisis impacted innovation in your market?



Fifteen per cent say that the crisis has stalled innovation, led by the Automotive and Industrials sectors. In part, this is due to the physical problems of lockdowns. Businesses in this sector depend on a hands-on type of developmental process, whereby they develop a tool that needs to be tested. This was delayed when people were at home.

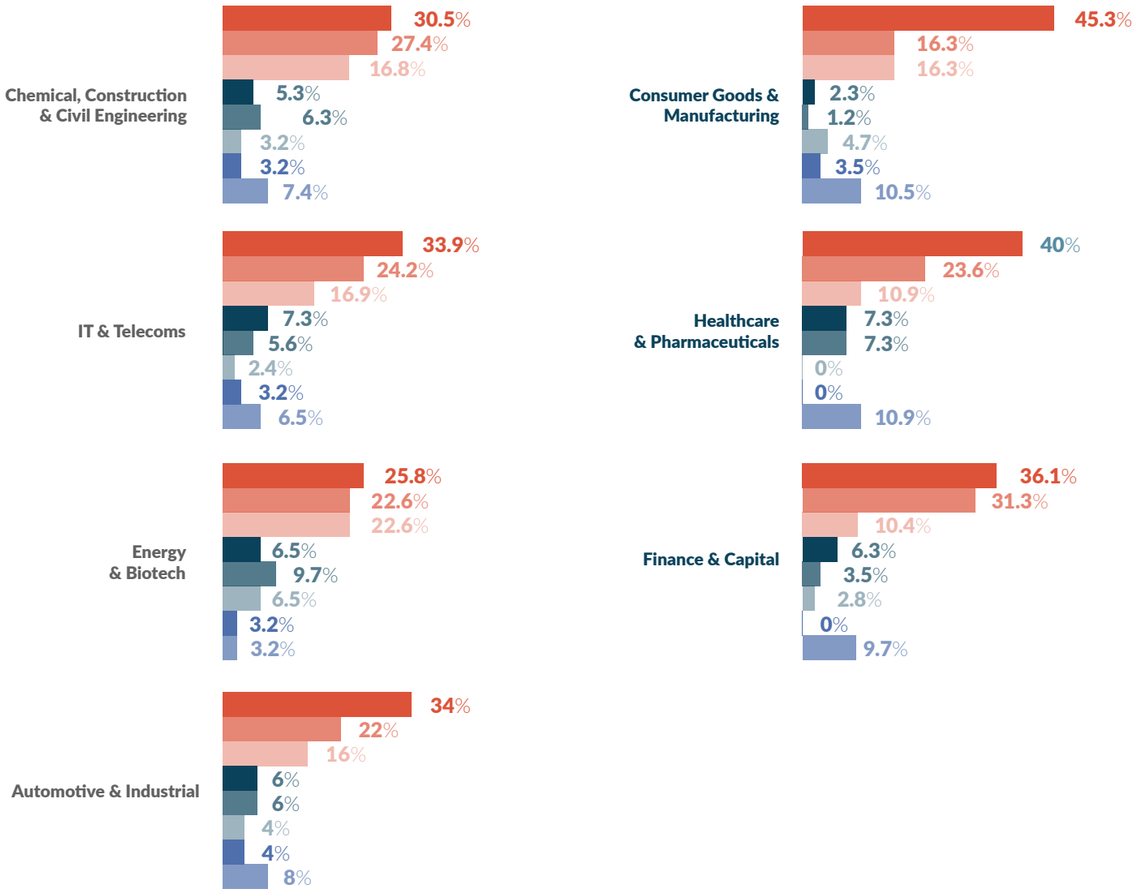
However, Taque suggests,

> "The main reason here is funding. R&D budgets are calculated on the income of the company, so some have come down drastically. The second part is the human implications of the pandemic. Lockdowns have caused some businesses to furlough staff, which I think has had an impact on confidence. I suspect we will have fewer responses to our internal innovation programme this year because we've had 300 people who have not worked for a year-and-a-half, and innovation projects require a certain energy and pragmatism."

Rising to the challenge

When asked for thoughts on how their businesses had reacted, respondents are generally optimistic. Thirty-six per cent of businesses believe they have innovated a little with minor adjustments, indicating that, while most firms didn't stop innovating, they also haven't done anything too ground-breaking.

Which of the following statements best relates to your business's innovation during Covid-19?



A quarter of respondents are proud of their reaction and say they have fully adapted to seize Covid-19 opportunities. Finance and Capital firms believe they have innovated most successfully through the crisis. Banks and Fintechs have successfully pivoted to new demands. People have taken up digital banking, trading and payments in record-breaking numbers. "They're almost technology companies at this point. Most interactions are digital," says Folsom.

Some companies have focused on keeping the lights on, meaning innovation has taken a back seat. Comfortably the most popular reason for not innovating is that business survival has taken priority, cited by 15 per cent of respondents. But this is exactly the wrong attitude in times like these. We've entered a period of disruption and R&D is essential to weathering the storm. If companies fail to keep up in this competitive environment, not only is it a missed opportunity but it is a visible signal they are failing to keep up with tomorrow.

The second biggest obstacle to innovation is sourcing talent, at six per cent. We know there's a growing talent drought in R&D. Innovation often requires a certain skillset, so the shortage of the right people is driving those responses. What's more, this problem is likely to worsen.

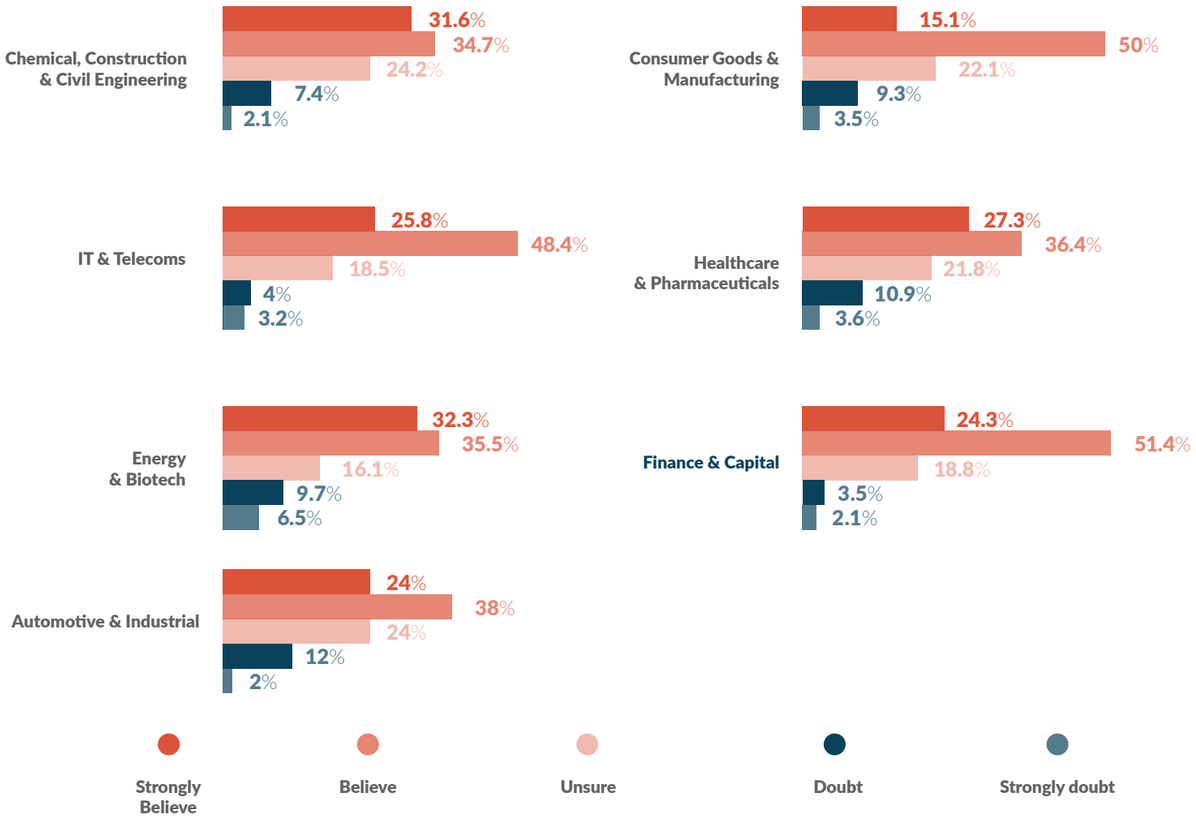
Smith says, "The talent pipeline is a concern. We've had a series of graduates completing degrees remotely. Are they getting the same quality education? It's also understandable to see why students question the value and some might not bother altogether. Companies need to be mindful of this pipeline and adapt to attract the best people. For example, people are reassessing their priorities, and many are demanding flexible working."

Surprisingly, people did not cite remote working as a barrier to innovation. Folsom says, "Perhaps they are underestimating the impact of remote working. A mechanical engineer that's trying to build a new widget couldn't work with his team to put the widget together and test it. But there's more to this. Innovation often stems from human interaction. It's often face-to-face spontaneous interaction that sparks ideas and gets people innovating."

Staying in the race

We wanted to see how our respondents felt about their innovation. Most respondents (69 per cent) believe they are innovating enough to keep pace with the changes in their market, with a quarter of respondents saying they strongly believe this. Finance and Capital are most likely to believe they are keeping pace with innovation – in line with the success story of this sector.

Do you believe your business's current level of innovation is keeping pace with the level of innovation in your market?

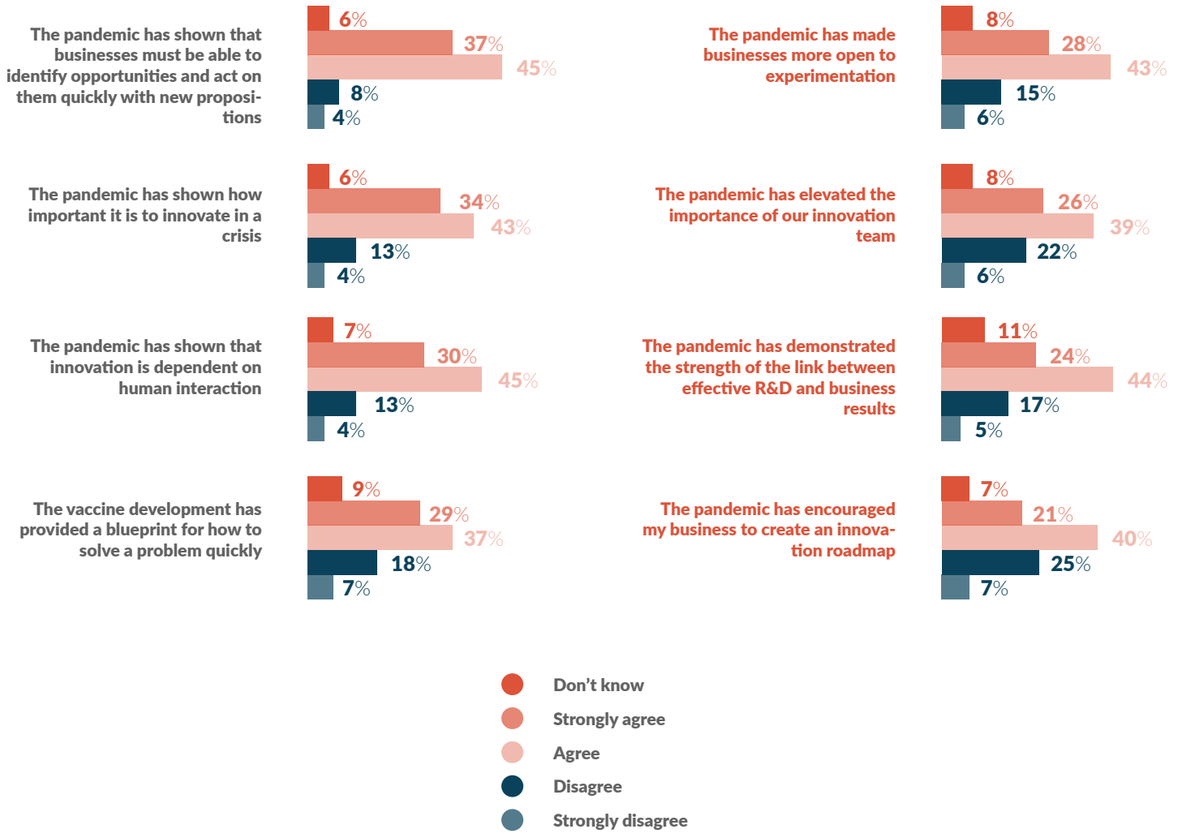


While positive, this presents a danger of complacency. The media narrative is one of doom and gloom, meaning those businesses surviving feel like they are doing well. But businesses must be wary of disruption. They may not be fully aware of the innovation that is due to come to market, both from peers and startups.

Folsom says, "This race isn't out in the open. People don't know what their competitors are up to. They're swinging the bat half-heartedly because they're hearing about others having problems. But they might be sleepwalking into a problem. Only time will tell."

Our respondents have some noteworthy reflections on the pandemic. Generally, the results are positive, and the respondents have agreed with most of the statements to varying degrees. What is interesting here is which statements have come out on top.

How far do you agree with the following statements regarding learnings about innovation?



At 82 per cent, the statement most commonly agreed with was that the pandemic had shown that businesses must be able to identify and react to opportunities. If businesses embrace and take forward a reactive mindset, that is a valuable and positive learning. Unsurprisingly, this sentiment is felt most strongly among the Healthcare & Pharmaceutical sector – almost certainly due to the success of those who have developed vaccines.

The second most agreed with statement is that businesses must innovate in a crisis, with 76 per cent agreeing. This is certainly an important learning from the crisis. However, although most agree, 17 per cent of people do not believe it's important to innovate during a crisis, which is alarming. Businesses that fail to realise the importance of innovating during a crisis are really setting themselves up to struggle.

There are some other surprises in the research. The least agreed with response was that the pandemic had encouraged respondent's business to create an innovation roadmap, with 37 per cent disagreeing. One would hope that this is because these companies already have a roadmap. If they don't have one, it is essential they put one in place.

The opinions of Automotive and Industrials respondents are an outlier here. These firms are least likely to believe that Covid has elevated the importance of their R&D team and are least likely to have set up an innovation roadmap. Taque says, "The R&D objectives of car companies haven't changed much at the hands of the pandemic. We are mainly driven by what Europe decides regarding emission rules, or the kinds of cars and fuel we can use. But everything changes every year, and you have new rules. It's really difficult to know where exactly to invest but it's generally targeted towards electric vehicles."

As for the vaccine, two-thirds of people say that the development of a vaccine has provided them with a blueprint from which to think about how they might solve problems more quickly – a lower statistic than expected. This idea is not to be ignored.

As Smith says, "The one big thing for the last year for me is looking at what we can do if we have a coordinated response. We can identify a novel disease and develop a vaccine in a very short space of time if we are focused on it.

"We face a lot of big challenges as a globe and we should realise that we've got it within our power to solve these challenges and solve them much, much quicker than people would think. Challenges like the climate crisis are solvable with innovation, but we need to spend the money, we need to be targeted, we need to be co-ordinated."

Key observations

If anything, the pandemic has proved that necessity is indeed the mother of invention. Already, we have seen the emergence of pandemic-induced innovation, and there is surely plenty more in development. It's clear that businesses are thinking differently and that's going to lead to positive change.

The crisis is something that we're going to have to watch and learn from. Unfortunately, we'll never know when there's going to be another Covid-19. What we can do is be bold in our ambitions.

Innovation is trickling down the supply chain

– Olivier Taque, Bertrandt

“

Automotive R&D is usually driven by efforts to become more environmentally friendly, moving away from gasoline engines towards fully electric vehicles. That often demands new parts, new resources and new raw materials.

The question emerging is: who has responsibility to innovate where? As a supplier, you may be best positioned to make something more sustainable or lighter, but it means businesses are asking their suppliers if they can innovate for them, shifting the responsibility, and associated cost, of the R&D effort onto the supplier. That’s a relatively new phenomenon.

In our business, we were always focused on the “D” in R&D. A client would come with an idea and ask us to develop a specific tool or part that might not want to develop internally. Now we have to research and propose a solution according to their prediction plans. We’ve pivoted more to the “R”.

The responsibility to build knowledge is being outsourced. This may be a good thing, though. It’s led us to make new discoveries, both with our own materials and test systems and using our customers’.

Re-thinking the creative process

– Tina Carling, Morgan Sindall

“

Brainstorming is a terrible creative concept. It was invented in the ‘70s by an ad man.

Dissent, debate and discussion is really healthy, but there’s a time and place for that. Not every idea is a good idea. Engineers can be quite linear in their thinking, and you don’t want anyone sucking all the good vibes out of the air saying, “oh that won’t work” or “that’s too ambitious”. It’s an intimidating environment for people who are introverted and is bad for cognitive diversity.

You’ve got to give them the tools to stimulate creativity. We’re using a platform called MURAL for collaborative workshops. It’s a very creative space where you’ve got unlimited pens, unlimited post-it notes and unlimited whiteboards.

Platforms like this will play a greater role in innovation. The best way to have a good idea is to have lots of ideas, and the best way to have lots of ideas is to ask lots of people. If we had two engineers in a room brainstorming, you’d only get their ideas. Much better to have a system that enables open innovation, which is what lots of people are doing. You can post your challenge online and you can say to the world, “this is our problem, has anybody out there got an answer?” That’s the future.

Executive Summary

Confidence down on last year:

The impact of the pandemic has caused a decline in the proportion of respondents who feel their organisation undertakes enough innovation, down from 85 per cent to 71 per cent.

Long-term planning:

Although the short-term has become a bigger priority, long-term trends and future market demand remains the biggest driver of innovation, selected by 57 per cent of respondents, up significantly from 38 per cent last year.

Jump in internal resources:

The percentage of companies who have kept innovation in-house is up from 58 per cent to 67 per cent, driven by a desire for increased reliability, simplicity and speed. External private resources have decreased dramatically from 47 per cent to just 29 per cent.

Keeping things close to home:

Pandemic-induced logistical challenges have shrunk international-only innovation from 11 per cent to only two per cent while local-only innovation is up from 42 per cent to 47 per cent.

In search of talent:

The biggest factor influencing the location of business innovation is talent, at 26 per cent. Demand for R&D has surged but there's a dwindling supply of people to do it.

Troubles with funding:

Aside from internal funding, all other forms of funding have declined. R&D tax credits have seen a substantial decline, used by 46 per cent of respondents compared to 34 per cent last year. Equity/debt funding and crowdfunding are both also being used less, down 10 per cent and 22 per cent respectively.

Boosting the budget:

Firms are managing access to funding internally, which is now the preferred method for 42 per cent of respondents, up from 27 per cent last year. Meanwhile, use of the Big Four and specialist consultancies is down as businesses have sought to cut spend on external advisors.

Uncertainty around budgets:

Having a defined R&D budget is less common this year, down from 90 per cent to 77 per cent. Fifty-seven per cent of businesses are expecting budget increases, but the percentage who simply don't know is up and now sits at one in ten respondents.

A new pace of innovation:

Fifty-seven per cent believe that Covid-19 has accelerated innovation in their market, with a quarter of total respondents saying this change has been drastic. However, 15 per cent say it has stalled innovation, which often depends on the sector.

Reacting to the pandemic:

Thirty-six per cent say they have innovated a little, whereas 25 per cent say they have fully adapted to seize Covid-19 opportunities. In terms of obstacles, the most popular reason for not innovating is that survival took priority, cited by 15 per cent of respondents.

Is it enough?

Sixty-nine per cent believe their businesses are innovating enough to keep up with the changes in their market, which may suggest some complacency. Businesses may not be aware of competitor innovation and must be wary of disruption.

Reflections on the pandemic:

With 82 per cent agreeing, our respondents view the biggest lesson learned during the pandemic is that a business must be able to identify and react to opportunities. Conversely, the pandemic is least likely to have encouraged them to create an innovation roadmap, with 37 per cent disagreeing.

Methodology

This report, our third annual International Innovation Barometer, continues our research and analysis of R&D from the last two years. For this, we have surveyed 585 senior R&D professionals, Chief Financial Officers, Chief Executive Officers, and business owners. Thirteen per cent of total respondents were representatives of Ayming clients.

Our findings are split into three sections analysing specific areas: as in previous editions, the first two chapters focus on the innovation landscape and financing, with our third section this year looking into innovation in a crisis to explore the reaction and lessons of Covid-19. Questions for the first two sections remain consistent with last year's survey to allow for year-on-year comparisons to be drawn and trends identified.

These finding have then been analysed by three of the Ayming's senior management as well as two external contributors. These include:

Fabien Mathieu
Partner and Managing Director at Ayming France

Mark Smith
Partner R&D Incentives at Ayming UK

Thomas Folsom
Managing Director at Ayming USA

Tina Carling
Innovation Director at Morgan Sindall Infrastructure & Innovation

Olivier Taque
Innovation Project Manager at Bertrandt

Our respondents were from the following 14 countries, adding the Netherlands to the research from last year's report.

Belgium

Canada

Czech Republic

France

Germany

Ireland

Italy

Poland

Portugal

Slovakia

Spain

United Kingdom

United States

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The Ayming Institute is the think tank of the Ayming Group.

It brings together all the value-added knowledge produced by experts to think about tomorrow's business performance.

THE POST-COVID ERA : TOWARDS A BUSINESS RESET

COVID-19 has upset our equilibrium as a society, causing far-reaching changes in the business landscape.

At Ayming Institute, we know how hard it's been to find ways to adapt and face these changes. With urgent deadlines, family commitments and the constant sense of uncertainty, days seem to slip by.

Authors Thomas Courtois, Marie Degrand, Marc Mézard, Martin Hook and François de Montaudouin have lived this very same story, but they found a way to adapt. In this new Ayming Institute book The Post Covid Era : Towards a Business Reset, they will teach you how to do the same.

The authors share simple principles to help you stop drifting and design a fail-proof workplace training plan.

The Post Covid Era : Towards a Business Reset will teach you everything you need to know to get your business back on track and become a more confident professional.

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