



Inventing Europe

The past and future of the EU's 'Horizon' Framework Programme

A special report on the 40th anniversary of the EU's flagship R&D programme – its origins, its evolution and the issues that will shape its next decade

February 2024

About this report

Since its founding 40 years ago, the EU's Framework Programmes for research and innovation have grown into one of the world's largest, and most open, funders for science and technology. This report explains the origins and evolution of the programme since 1984, and summarises the issues now being debated as the EU plans the programme's next instalment, to run from 2028 to 2034. It also summarises the history of the company, Science|Business, which produced the report and in its news pages has chronicled much of that history daily since 2004.

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40 years of Framework, 20 years of Science|Business



In 1984, 10 European countries began a joint R&D programme they called Framework. Today, the programme (now called Horizon Europe) is one of the world's biggest and most successful public research funders.

This year, it will spend more than €13 billion. Since its start, it has awarded more than 127,000 grants to 85,000 unique participants in every scientific domain and industrial sector. It has played a vital role in EU cohesion, linking researchers, engineers, students, entrepreneurs and policy makers across all member-states. And it has grown to include 17 non-EU members, from Kosovo to Norway, with Canada and others to join soon. It is as close as the world has gotten to a global, civilian R&D funder.

As a journalist, I have witnessed all of this – from 1984 as a young tech reporter in London for the Wall Street Journal, and from 2004 in a media and communications company co-founded in Brussels. Science|Business is now a top meeting place for the public and private R&D communities in Europe – with 25,000 twice-weekly newsletter subscribers, 2.5 million web visitors a year, two dozen public and private conferences annually, and an unrivalled expertise in communications by and for the research community. Core to what we do is our Science|Business Network of more than 70 universities, companies and public-sector organisations that we help meet one another, share intelligence, and advance their profiles in the global R&D community.

This report sums up one of the most important stories we have followed in our 20 years of news, events and reports: the successes and failures of the EU's Framework Programmes. This year, as planning for the programme's next iteration picks up speed, you can track the developments live in our news service and events, at www.sciencebusiness.net.

We look forward to watching Framework's further evolution – and that of other European and global R&D initiatives, both public and private. As we said at the company's launch 20 years ago, science is “the most important story of our age.”

Richard L. Hudson
Co-founder, editorial director

I. A short history of the EU's Framework Programme for research and innovation



1957: European leaders admiring a poster promoting their signing of the Treaty of Rome.
© European Commission

After the horrors of World War II and its cataclysmic conclusion in the Manhattan Project, the importance of science was clear to all politicians. But the idea of pan-European cooperation for it only gradually emerged. An early step came in 1951, when European leaders began planning what would become the CERN physics lab in Geneva, and included some provisions for technical and economic research in the founding treaty for the European Coal and Steel Community, precursor to what is now the European Union. In 1957, they enlarged the scope for research to include agriculture in the Treaty of Rome, and began the first real attempt at scientific collaboration in the Euratom Treaty. But it was not easy. Germany and France launched national programmes in nuclear energy, competing with each other and against the European programme for budget, infrastructure and prestige.

- Because of the Member States' widely differing attitudes and interests regarding the nuclear sector, no common policy was possible. One of the main bones of contention was the choice of reactor type. Keen to preserve its military and energy independence, France had opted for natural uranium reactors and wanted Euratom to do the same. The other Member States preferred to build enriched uranium reactors using technology and fuel supplied by the Americans. In 1967, the Council failed to approve the 5-year plan for the Joint Nuclear Research Centre (JNRC) because of a lack of consensus on what it should be doing. So the JNRC had to operate with monthly provisional budgets and under the constant threat of widespread redundancies or even complete abolition. The JNRC's staff came out on strike and some even went on hunger strike.

- Brouwer 2019, P279

But there was progress in other domains. In 1962 European leaders agreed to build a telescope in Chile, and the following year established the European Molecular Biology Organisation. The first real attempt at a coordinated science and technology policy came in 1965, with the creation of a special planning committee, PREST. Six years of deliberation and many reports later, 19 countries agreed to form their first broad, cooperative organisation for science and technology, COST – still operating today.

The pace began picking up in 1970, with the appointment of Italy's Altiero Spinelli, an ardent federalist, as industry commissioner. Under him, the formerly separate industry, research and nuclear directorates-general were merged into what Spinelli, in his diary, called "a DG with imagination which needs to acquire power." (Bussière p503) In 1973 came the first Community agreement on a new research effort, in standards and environment, that wasn't explicitly mandated by treaty. And the year following, the Council created some relatively small "action programmes", and agreed that coordination of national policies and the definition of projects are in the Community interest. Still, budgeting was complicated, and the political consensus fragile.

Towards a Framework Programme

In 1977, the Commission upped its ambition with a plan for a "Common Policy in the Field of Science and Technology" (COM(77)283) that argued it was time for a solid legal and operational "framework". The Council bought part of the plan, but not all.



Étienne Davignon
© European
Commission

What would make the difference, politically, was a clever lobbying strategy developed by a new commissioner, Étienne Davignon. A Belgian (though born in Budapest), Davignon had been an attaché to one of Europe's founding federalists, Paul-Henri Spaak, and first head of the International Energy Agency. Back in Brussels, he got a big Commission portfolio: industrial affairs, internal market and customs union. And he was busy:

The economic and geopolitical fortunes of Europe were uncertain. There was recession and inflation, industrial decline and labour strife, a growing dominance of American technology and a rapid rise of Japanese electronics. Davignon's department was busy with plans for industrial restructuring, while he himself was more and more preoccupied with information technology (Ruyssen 1981). The launch of Japan's Very Large Scale Integration (VLSI) semiconductor programme in 1978 reverberated around Europe (and the US) with worries of new technology gaps appearing in the world.

A critical part of Davignon's strategy was to enlist industry leaders to argue the case for action with their own national leaders; he started by developing a telematics strategy with industry. Then in 1981, when energy and research were added to his portfolio, he organised a series of roundtable meetings with the heads of the 12 largest European IT companies on the future of IT in Europe. In these meetings – with Philips, Bull, Siemens, ICL, Olivetti and others – Davignon explored the willingness of the companies to work together in the face of American and Japanese competition. The outcome was a Commission proposal for a pilot IT programme, ESPRIT – the European Strategic Programme of Research in Information Technology. They adopted the model of pre-competitive research from Japan's VLSI initiative, in which companies agreed to collaborate in research but to continue to compete in development and commercial exploitation of results. Some viewed this as a way to bypass competition rules, while others saw it as a condition the companies themselves set for working together.

Budget of the first Framework Programme

ANNEX III

Financial indications by objectives (1984 to 1987)

	(million ECU (1))	(%)
1. Promoting agricultural competitiveness:	130	3,5
— developing agricultural productivity and improving products:		
— agriculture	115	
— fisheries	15	
2. Promoting industrial competitiveness:	1 060	28,2
— removing and reducing barriers	30	
— new techniques and products for the traditional industries	350	
— new technologies	680	
3. Improving the management of raw materials	80	2,1
4. Improving the management of energy resources:	1 770	47,2
— developing nuclear fission energy	460	
— controlled thermonuclear fusion	480	
— developing renewable energy sources	310	
— rational use of energy	520	
5. Stepping up development aid	150	4,0
6. Improving living and working conditions:	385	10,3
— improving safety and protecting health	190	
— protecting the environment	195	
7. Improving the effectiveness of the Community's scientific and technical potential:	85	2,3 (2)
horizontal action	90	2,4
	<u>3 750</u>	<u>100,0</u>

About the same time, the Commission brought to the Council a series of other multi-annual, indirect action programmes building on previous efforts in environment, medical research, raw materials, and metrology, as well as in new areas like biomolecular engineering. Then, on 21 December 1982, the Commission published its "Proposals for a European Scientific and Technical Strategy Framework Programme 1984-1987" (COM(82)865). It argued for a coordinated approach to the challenges of the era. This required a strategy of Community R&D activities complementing those of the member states, jointly addressing important socio-economic challenges, including the technology gap:

- One should recall the extent to which European cooperation efforts during the last few decades have been a determining factor for the Member States in keeping them up with competition through innovation (nuclear fission, thermonuclear fusion, space, etc.). It should also be noted that, conversely, in those fields where European cooperation has not or has not yet been developed significant gaps are appearing between the Community, the USA and Japan (already apparent so far as computer science and biotechnology are concerned, weaknesses are beginning to emerge in more traditional sectors such as motor vehicles, chemicals and materials)".

- (COM(82)865, p12

The Council accepted the plan on 25 July 1983. (Council 1983.) It covered all the smaller programmes that had already been launched, and added more opportunities to promote industrial competitiveness for which the Commission was preparing new proposals. The overall budget: 3.75 billion European Currency Units (or euros, as they are counted today.)

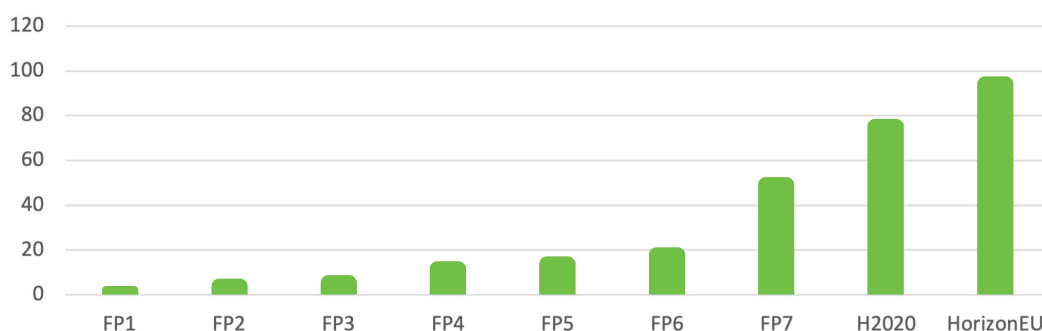
Framework evolving

The Framework Programme's start in 1984 was important – but other trends were underway. The US Star Wars programme, while intended as a Cold War threat to Russia, also spooked European policy makers about US tech leadership. Meanwhile, the signing in 1986 of the Single European Act provided a stronger legal basis to expand the Community's R&D programmes, on the grounds that it would boost industrial competitiveness. But the politics were still messy. In 1985 France and Germany pushed an alternate approach to R&D: creating the Eureka programme, an intergovernmental rather than Community initiative to collaborate on science and technology. And inside the Commission, individual programme decisions with different time horizons continued, creating a complex web of future commitments. In August 1986 the Commission proposed a 2nd Framework Programme. But economic times were difficult, and the budget adopted by the Council, 5.4 billion ECU, was 30% less than the Commission proposal. Alain Devaquet, the French research minister, summarised his country's position: "The Commission's approach is enthusiastic, but what we want is rigour" (Scotto 2019).

By 1989, however, as the Soviet empire began unravelling and talk of European integration rose, the future started to look brighter. Amidst such enthusiasm the Commission published "a Framework for Community RTD Actions for the 1990's" (SEC(89)675), to test the waters in the Council for revising the programme. The paper emphasised the opportunity that the planned completion of the Single Market in 1992 offered Europe's industry, while highlighting the continuing challenges that the technology gap entailed. Shortly after, the Commission proposed a third Framework Programme (1990-1994). With a proposed budget of 7.7 billion ECU, it covered all the ground of the previous programme in five thematic areas and added a transversal priority on "Human Capital Mobility". At first, the Council granted only 5.7 billion ECU – but then a rift emerged between the Council and the European Parliament which wanted a bigger, 8.2 billion ECU budget. The fight stretched on for a few years, but in the end the Council agreed to a bit more, 6.6 billion ECU. That little tussle began what is today a regular feature of Framework planning: A prolonged, three-way fight among Council, Parliament and Commission over budget and priorities in each programme.

In 1992, the newly signed Treaty of Maastricht brought a small but important change in the way the legal basis for EU research policy was phrased. For the first time, it linked research to EU needs beyond the competitiveness of industry, kick-starting discussion about the possibility that the EU

FP budgets through the years (€ billions)



could also support basic research as well. The Commission argued the case publicly, and Germany's Max Planck Society organised conferences on "European Research Structures" advocating support for basic research. The Commission presented its first discussion document for the preparation of FP4 (1994-1998) in September 1992 with a planned budget of 14.7 billion ECU, more than doubling the resources of the rather modest 3rd Framework Programme. The plan cleared the Council in 1994, with a budget of 12.5 billion ECU (11.625 billion ECU, excluding EURATOM).

This period also saw the rise of projects on forecasting, monitoring and evaluating technology, which generated a community of analysts preoccupied with EU policy and how to improve it. Through their work, by the mid-1990s it was obvious that the EU Framework Programme was reaching far and wide across Europe's scientific and technological community, and was shaping diverse networks of expertise. All this led to heightened recognition among policy makers that EU research programmes were essential for Europe's future, and they needed to do many things at once: support more basic research, better align with market developments and put more emphasis in exploiting the results. That view was reflected in the 5th Framework Programme, which in 1998 the Council approved with a budget of 13.7 billion ECU (excluding Euratom), just 7% less than the Commission had proposed. The 5th Framework Programme made a strong effort to link the research agenda to concrete societal challenges. It was organized by "Key Actions", each focussing on a specific societal concern. Its coverage was widened by the inclusion of Key Actions on "Strengthening the Socioeconomic Knowledge Base", "space" and "security".

Towards the European Research Area

On 15 March 1999, a few weeks before the entry into force of the Treaty of Amsterdam, the Santer Commission resigned in scandal – including fraud allegations against the science commissioner, Edith Cresson. The next Commission embarked on a process of reform that, blessed by the happy chance that the old Commission headquarters building was closed to remove asbestos, saw the commissioners sharing offices with their own civil servants, rather than sequestered with political aides. Named to the research portfolio was another influential Belgian politician and former MEP, Philippe Busquin, who made a point of professing his personal interest in science and embarked on a project of creating a "European Research Area" – the equivalent of the Single Market for the world of science and technology. The Commission then published a communication, "Towards a European Research Area" (COM(2000)0006 final), in which it argued that a Community effort must help structure European research:



Philippe Busquin
© European
Commission

- Decompartmentalisation and better integration of Europe's scientific and technological area is an indispensable condition for invigorating research in Europe.... Without concerted action...the current trend could lead to a loss of growth and competitiveness in an increasingly global economy. The leeway to be made up on the other technological powers in the world will grow still further. And Europe might not successfully achieve the transition
- to a knowledge-based economy.

Propelled by Millenium-era optimism and rising prosperity, EU leaders embraced science and technology as central to Europe's future. With the 6th Framework Programme, for the first (and last) time in history the Council accepted the budget as proposed by the Commission: €16.27 billion (later increased to €17.9 billion as the EU enlarged.) They also set an objective of raising EU-wide investment in R&D to 3% of gross domestic product by 2010; this goal has yet to be reached – hitting a peak of 2.27% in 2021. Still, FP6 left some important legacies towards a true ERA. One was the creation of instruments to link national, regional, industrial and other organisations that fund R&D across the EU. Also important was a programme on "New and Emerging Science and Technology" as a precursor to what is now the European Research Council.

In November 2004 Janez Potočnik, a Slovenian economist and politician, succeeded Busquin as research commissioner. Having led negotiations of the accession of Slovenia to the EU, he was very aware of budget issues and the need to convince finance ministers of the value of R&D programmes. He enlisted economic advisors, and pushed for more econometric support for policy. He advocated for recognition of a “5th Freedom” – of ideas – in the EU. And he called his proposal for the 7th Framework Programme (COM(2005) 118 final) “Building the ERA of knowledge for growth”. It emphasised research themes rather than legal instruments, formally established the European Research Council for frontier research, and sought a doubling of the research budget over a seven-year period (2007-2013) that would coordinate it with the Commission’s overall budgeting mechanism, the Multiannual Financial Framework. He ended up with €51 billion, 30% less than requested, but still a huge increase marking the first time the EU research budget exceeded that of the US National Science Foundation. Notably, he also clashed with then-President José Manuel Barroso who wanted to create what he called “an MIT of Europe”, the European Institute of Innovation and Technology. Barroso won the fight.



Janez Potočnik, at Science|Business conference
26 September 2012

The next decade saw rapid growth of Framework, plus a steady shift in priorities – emphasising innovation and jobs, greater administrative efficiency and attention to public outreach. In February 2010, Irish politician Máire Geoghegan-Quinn became research commissioner, and began planning the next Framework Programme. A series of consultations followed, with experts and member states. They emphasised the importance of simplifying the grant-application process and programme management, and of coordinating funding streams from the Commission, the member states and Industry. Also suggested was a shift towards funding R&D to meet “Grand Challenges” – health, climate action, energy and other issues targeted in the EU’s new Lisbon Strategy. The final proposal, in November 2011, involved a tripartite structure: “excellent science”; “industrial leadership”; and “societal challenges”, with a budget of €87.74 billion. As finally agreed, the budget was €77 billion, with an effort to standardise and simplify the grant process, expand collaboration with industry, and bridge the “innovation gap” between eastern and western Europe. It formalised a series of large, quasi-autonomous public-private partnerships to fund industry-focused R&D, in medicines, aviation, rail, electronics, fuel cells and bio-based industries. And there was some political word-smithing: To engage more public interest, the Commission invited suggestions for a better programme name than “FP8.” The outcome: “Horizon 2020”.

The next Framework Programme – the current one – also turned on some carefully chosen words. Under the new commissioner, Carlos Moedas, a Portuguese investment banker and politician, “open innovation, open science and open to the world” became watchwords, posted on walls in Commission offices. The first flagged what became Moedas’ plan for a new agency, the European Innovation Council, to fund commercial innovation with grants, loans and equity (a first in Framework). The second reflected expanded support for the ERC’s fundamental research and the Marie Skłodowska Curie Actions for student exchanges. The third signalled further expansion of Horizon to include more non-EU members. As the formal programme proposals came together, the Commission also undertook the most extensive econometric analysis of Framework and R&D spending yet attempted, resulting in a claim that each euro spent on FP7 had produced about €11 “of estimated direct and indirect economic effects through innovations, new technologies and products” (Fresco p5). (In its latest report, in January 2024, the Commission changed its econometric methodologies and came up with a more modest multiplier, of 5:1, for Horizon 2020. Commission 2024). At the same time, attempts at administrative efficiency accelerated, with more paper-pushing tasks moved out of the core civil service and into specialised executive agencies with less-costly contract workers. And a new approach to Grand Challenge R&D was developed: the mission. The



Carlos Moedas, at Science|Business conference
16 February 2016

idea: choose a few attention-getting goals – for instance, curing cancer and climate-proofing cities – around which to solicit hyper-ambitious R&D proposals.

The resulting proposal for the 9th Framework Programme – renamed Horizon Europe – was published in June 2018. For the first time it covered the programme and the rules for participation in a single, rather short document of 56 pages. The proposed structure involved three “pillars” – open science, open innovation, and global challenges and industrial competitiveness – plus a horizontal programme called “Widening” to strengthen the European Research Area. The Horizon Europe plan also included the EIC for small and medium-size business funding, and Barroso’s EIT for university-industry cooperation. Industry partnerships were to be fewer but bigger with greater impact. And six – later five – EU missions were planned. It took almost three years to get Council agreement. In the interim, a new Commission arrived, including Bulgarian politician Mariya Gabriel as research commissioner. A fierce legislative battle broke out between eastern and western EU members over how the FP grant money was being distributed between the two. Endless Brexit negotiations distracted EU leaders, as did mounting trade tensions with an isolationist Trump administration. But in the end, a deal was finalised in 2021, after the programme was already supposed to have started. The final budget: €95.5 billion.

By now, Horizon Europe has been operating for three years. In that time, more than 20,000 grants, with 68,000 participants, have been awarded, with €28.6 billion in EU funds. They involve 17 non-EU members, from Kosovo to Norway, with Canada and others to join soon. Notable was the speed with which the Commission mobilised more than €1 billion in the spring of 2020 for urgent COVID research (actually, under Horizon 2020); stepped up funding in new strategic fields like hydrogen fuel, artificial intelligence, quantum computing and semiconductors; successfully engaged more east European researchers; and wielded the programme for diplomatic ends: health and climate research with Africa, rapid support for Ukrainian science and education, an end (almost) to quarrels with Britain and Switzerland, and a distancing from China. At the same time, however, the research community is fretting over the member-states’ new habit of raiding the FP budget for urgent priorities.

Now, the seemingly endless process of FP planning has started again. The next Framework, provisionally called FP10, will run from 2028 through 2034.

II. What will the next Framework look like?

We are nearly four years from the start of the next Framework Programme, No.10 – but this is Brussels, and the planning is already underway.

The work kicked off publicly in February 2023, when the Commission released the results of a public consultation on FP10. The conclusion was a call from the research community for the programme to grow, with a clear vision and a good balance between basic and applied science.

Throughout 2023 there were repeated calls from MEPs, research associations, universities and industry for FP10 to have a budget of €200 billion – more than double the existing programme. But even the MEPs know that's unrealistic; as it is, they had to fight to claw back cuts of €400 million that the economically challenged member states were pushing in the annual 2024 budget. And on 1 February 2024, the Council ordered another cut of €2.1 billion from the current, €95.5 billion seven-year Horizon Europe research programme – in part to help fund a €50 billion support package for Ukraine.

So a battle for a new, strong and well-funded research programme is brewing. Here are the key processes that will shape FP10, where the budget battle lines will be drawn and what areas of the Framework Programme will be most contested.

What's the Commission up to?

For an expert view, the Commission has set up a 15-member group chaired by former Portuguese science minister Manuel Heitor, to look at the strategic plan for the final three years of Horizon Europe and lay out recommendations for FP10. This group is expected to deliver its advice by October

The road to FP10 – key dates

- **June 2024** – member states outline their vision in the European Research Area and Innovation Committee (ERAC) FP10 task force report
- **October 2024** – Commission expert group led by former Portuguese science minister Manuel Heitor publishes its independent report on the future of European research and innovation
- **Early 2025** – the interim evaluation of Horizon Europe is due to be published
- **By 1 July 2025** – the official Commission proposal for FP10 is unveiled
- **Autumn 2025** – member states start negotiations on the proposed framework programme
- **Beginning of 2026** – member states reach a deal and negotiations with the European Parliament start
- **End of 2026** – (hopefully) a deal on FP10, leaving the Commission a year to prepare the programme
- **2027** – heads of state and Parliament set the seven-year EU budget, including funding for FP10
- **2028** – FP10 starts

2024. Before that, the expert group promises to gather feedback from all quarters on what the next research programme should look like and will hold an interactive event with stakeholders during the Commission's annual R&I Days conference in March. Inside the Commission, a dedicated taskforce has been set up bringing together relevant directorates-general with links to research, including health, transport and digital. The Commission is also gathering position papers, data and analysis to assemble the Horizon Europe interim evaluation, which will be finalised and published at the beginning of 2025. Documents that will feed into this include the expert group report, input from stakeholders, and a report being put together by a special task force made up of representatives from the member states through ERAC, a long-standing committee of Council experts on research policy.

What are the member states up to?

While the Commission prepares the ground, the member states will set out their demands through the special ERAC task force, which will provide the main input on FP10 from national governments. Each member state's research policy representatives have a seat on ERAC. Gathering the opinion of every government comes with a high risk of a watered-down report, in which each idea is reduced to the smallest denominator. But insiders say talks have been productive and there's an appetite to produce something substantial. The final report might not see member states speaking with one voice, but will spell out the differences of opinion and a way forward. The group has four meetings left, with a near-finished report up for discussion in April. The final version will be adopted in June. After that, the member states will start lobbying the Commission individually. We can expect camps to form (and these factions are already being assembled): big member states, small ones, the five budget-conscious "frugals" (Denmark, Netherlands, Finland, Sweden and Austria), a Franco-German coalition, the Widening countries, Mediterranean groupings and others.

Budget worries and guesswork

The big question will be the budget, which is not in the gift of the Commission, but of the finance ministers and, ultimately, heads of state, alongside the European Parliament. The budget will be proposed as an element of the seven-year EU Multiannual Financial Framework that governs overall EU spending. The numbers will be determined largely by politics and informed by the spending review, which will assess how the current budget has managed to meet its goals in areas like climate and digital policies.

The research community wants to double the current €95.5 billion Horizon Europe budget. But it is unlikely to get its way, not least because of a recent German Constitutional Court ruling forcing that government to cut spending. On top of the stress at a national level, there are the loans the EU will have to pay off from its COVID-era "recovery" funds. Some insiders now speculate FP10 will be lucky to get more than the existing Horizon Europe budget, plus a top-up to counter inflation.

On previous form, the decision on the FP10 budget will be last-minute. When the previous MFF was being negotiated, the budget proposal was not agreed until the very last day possible by the College of Commissioners. The proposal then landed in the hands of the member states and the Parliament, which only reached a deal on the seven-year EU budget in mid-December 2020 after a 14-hour negotiating session. That was just 20 days before the new budget was due to kick off in 2021. And while the Commission claimed an on-time start that January, in fact few of the expected calls for grant proposals made it out the door until that spring. Upshot: relatively little of the new Horizon Europe money got spent that year, and the Commission has been playing catch-up ever since.

Commission insiders are hopeful that MFF negotiations are smoother this time round because, once this June's elections seat a new European Parliament and a new Commission takes over by

the end of this year, everybody should be in place to push on with negotiations in 2025. Still, the budget will be tricky. While member states are unlikely to go into budget considerations in the ERAC report, they are drafting their plans with different budgets in mind, from as little as €50 billion to €200 billion. Heitor meanwhile has promised the expert group won't shy away from talking budget, and will highlight the importance of member states putting money in national R&I budgets to help Europe achieve its green and digital sovereignty goals.

Areas of FP10 up for debate

Various new initiatives, funds and instruments were introduced in Horizon Europe and not all of them are popular. The following are contentious and could attract the most debate:

Basic vs applied: There's agreement across the board that there is an imbalance in Horizon Europe's Pillar 2, the catchall 'Global challenges and European industrial competitiveness', which has more than half the Horizon budget. But there is little agreement about how to address this, with universities saying research to establish basic concepts and validate them in the lab is being neglected, while industry argues now is the time to focus resources on demonstrating technologies at scale and getting innovation to market. As Horizon Europe's main basic-research funding body, the European Research Council says it needs more money. The main innovation funder, the European Innovation Council, says Europe needs more strategic technologies fast. Getting the balance right will only get easier if FP10 is given a significantly higher budget than Horizon Europe.

Governing an international research programme: Horizon Europe is the first Framework Programme to open its doors to many overseas participants on a (mostly) equal footing. It has become an engine of global scientific cooperation as the likes of Canada and New Zealand join. This is great for science but may spell trouble for the governance of the next FP. At present, the basic membership deal is that rich countries pay varying amounts into the EU money pot so their researchers can apply on equal terms for Horizon funding with colleagues in EU member states. But most of these non-EU countries don't get a formal vote on the programme priorities. What topics will be funded, and when? How will grantees be chosen? How will the projects, and the overall budget, be managed? It raises the question why a country like Japan should commit big sums to an EU programme it doesn't really control, when its own national programmes are struggling for cash.

Lump sums: Under Horizon 2020, the Commission piloted a new (for it) kind of funding mechanism. Instead of a grant dribbled out as costs are documented, the Commission tried a "lump sum" arrangement that ties disbursement to specific milestones. In Horizon Europe, the Commission expanded the methodology to more parts of the programme, and plans to hand out as much as half of Horizon grants this way by the end of the programme. But some say there is still too little evidence lump sum funding actually simplifies the lives of beneficiaries enough to justify the mass roll out. Getting rid of real-cost reporting means less paperwork for the Commission and less tracking of expenses; but much of the burden of calculating costs now falls on the applicants at the proposal stage. One big issue has been calculating salaries for researchers and staff on lump sum projects, as the Commission's wage estimates quickly become outdated with rising inflation. It's a very nerdy issue, but one of vital importance to big and small labs and companies hoping for Framework funding.

European Innovation Council: To help out Europe's struggling entrepreneurs, Horizon Europe introduced a €10 billion EU-own start-up fund, in the European Innovation Council. It wasn't smooth sailing for the EIC in the beginning as the Commission grappled with the consequences of declaring itself a hot-shot tech investor overnight. Some companies had to wait for their money for months and deal with myriad unexpected hiccups, including an unplanned shut down of the entire submissions platform five days ahead of a call deadline. But the EIC is wildly popular and start-ups are constantly demanding more money. Policymakers will have to figure out how to manage the EIC equity fund as it grows bigger and whether to award it more independence from the Commission.

Strategic Technologies for Europe Platform: The EIC is pumping billions into tech start-ups, but that won't be nearly enough to achieve the bloc's tech sovereignty ambitions. To plug the green tech funding gap, the Commission masterminded a European Sovereignty Fund, urged by European Commission President Ursula von der Leyen. It eventually turned into the Strategic Technologies for Europe Platform (STEP), a fund to develop deep tech, clean tech and biotech. It was supposed to be an amalgamation of existing funds topped up with a €10 billion injection of fresh funds from member states. Some of this money was going to go to the EIC. But with no appetite for budget top-ups, the member states whittled down the fund to a meagre €1.5 billion top-up for the European Defence Fund. The lack of momentum for a dedicated tech fund leaves an open question on how the EU plans to finance its road to tech sovereignty, with wide-ranging implications for the next FP.

Synergies: Framework isn't the only source of R&D-related funding in Brussels. They can be found in Structural Funds, the European Defence Fund, various European Investment Bank instruments and more. But each has its own rules and procedures; and the Commission has been trying for years to get it all better coordinated – find “synergies” – so an applicant in one programme can move on to funding in another as a project advances rather than be cut off dead. The debate is likely to ramp up in the approach to FP10. The member states' draft ERAC report on FP10 singled out synergies as one of the key priorities. And there are lots of ideas floating around how to deliver on their promises. One university group suggests earmarking money for R&I in other EU programmes. Others believe more synergies within FP could make the money go further.

Future of Widening measures: A key feature of Horizon Europe was an expansion, to €3.3 billion, of programmes to network east European researchers into western grant consortia; it was called “Widening.” Some are opposed to that idea of ring-fencing funding for countries that struggle to win grants in regular calls. Others say it's a necessity to remove east-west disparities. But many say the current mix of Widening instruments isn't working well. We can expect anything from minor adjustments to a complete overhaul – and a guaranteed political battle.

Future of the Missions: A new feature of Horizon Europe are its five “Missions” – special efforts to cluster grants around some high-profile, politically sexy goals like curing cancer or climate-proofing cities. Alas, most agree, they haven't delivered much tangible success yet. Under Council orders late in 2023, a planned sixth mission was downgraded to a relatively small €20 million initiative. But the idea isn't dead. In what shape and form these projects should continue will be contested.

Research careers: 2023 saw some progress for those fighting to improve research careers, with EU ministers adopting joint recommendations on this. But as one of the people spearheading this, Heitor wants more, describing the recommendations as a very, very small step. He is calling for a monitoring system for research careers, and a new pilot funding scheme to improve working conditions.

Game rules: With each FP, simplifying paperwork has been a key goal. As projects grew in size, the Commission also added or expanded a myriad of new requirements each application must meet. In Horizon Europe, this includes gender equality plans, data management plans, ensuring the project does no harm to the environment, and respect for open science principles. Some want to see a thorough assessment on which of these new measures have a real impact on proposal quality and implementation. Every new requirement adds more work for the applicants, and they want to know if it's worth their time.

Dual use: With geopolitical tensions on the rise, the Commission is looking to fund defence research and innovation. In January 2024, it proposed to allow technologies with both civil and defence applications to be funded in the next framework programme. There are three options for how this can be done, and consultations are ongoing. Member states will have to grant approval, but much resistance is unlikely. Change is imminent and could have an impact on third-country participation in FP10, including of researchers from associated countries. Today, EU states have the option to shut out associated countries like the UK, Canada or New Zealand from sensitive calls, and the inclusion of dual use projects could widen the use of this practice.

III. Science|Business – a short history

In the 20 years since its founding, Science|Business has grown to be a leading media and communications company in the European research and innovation community. Here's how.

Science|Business, like most start-ups, began with an idea. In the first years of the new Millennium, it was apparent that science and technology were booming in Europe, attracting new investment and political attention. But the media industry didn't seem to be taking much notice. R&D policy, grant decisions, tech transfer, spin-out formation, early-stage investments, R&D policy – none of these were on the news radar across Europe. There was a gap in the information market. And that gap, if unfilled, would hamper the continued growth of European science and technology.

Three newsmen noticed the problem, and started talking about a new publication to solve it. They were Richard L. Hudson, then managing editor of the *Wall Street Journal Europe*; Malcolm Laws, group publishing director of Advanstar's technology and telecoms titles; and Peter Wrobel, managing editor of *Nature*.

Some industry colleagues were sceptical the audience would be big enough to support it. As one news executive told Hudson: "You're dreaming. Scientists have no money." Still, the three decided to start a magazine, and a community of readers for it, on their own. They would create "a *Nature* of business, a *Fortune* of science." In its news, conferences and reports, it would be the place "where ideas meet money."

The starting team, 2004-5



John Browning, Fabrice Delaye, Richard Flaye, Diane Fresquez, Richard L. Hudson, Mike Kenward, Thomas Lau, Malcolm Laws (d.2005), Tessa Laws, Tara Lindstedt, Steven Maisel, Kevin McGeehan, Nuala Moran, Terri Robinson, Peter Wrobel, Tom Wrobel, John Wyles, Lori Valigra

With thanks for their help at the earliest stages of Science|Business – and to all our members, investors, readers and supporters over the years

November 2004:
Cover of the
Science|Business
prototype magazine



On 13 April 2004 the company, Science Business Publishing Ltd., was formed in Britain, where two of the three were based. With their own capital and help from friends, including Cambridge-based venture capitalist Hermann Hauser, they made a pilot issue. It ran to 60 pages, featuring a profile of physicist-cum-entrepreneur Sir Richard Friend: "Confessions of a serial entrepreneur" was the headline. And it opened with an editorial promise: with its focus on funding in science, it will further "the promotion and understanding of science in society – the most important story of our age."

High ambitions. But alas, as most entrepreneurs can attest, things seldom go as planned with a new business. Of the 9,850 trial copies mailed out to potential readers across Europe, fewer than 1% wanted to see another issue. Were the naysayers right? Time for rewrite.

7 March 2006:
First
Science|Business
roundtable – École
des Mines, Paris



So, a new strategy. First, switch from print to the emerging online publishing sector, to lower costs and broaden audience. Second, engage that audience with a membership organisation of universities and companies that needed help finding new partners and funders across borders and sectors.

The new strategy worked, albeit slowly. The news service launched as a weekly electronic newsletter on Friday the 13th of October 2005. The top story in the first issue: Fraunhofer's launch of a venture fund to finance the growing number of companies spinning off from its technologies. And the membership organisation, the Science|Business Network, grew with the help of a few core supporters at Microsoft, Imperial College London, Karolinska Institutet, ETH-Zurich, ParisTech and Chalmers. As the news, meetings and reports multiplied, other organisations joined. In Brussels, the research commissioner, Janez Potočnik, and his cabinet began taking note, speaking at Science|Business events. Annual membership dues helped support the company as its readership and staff grew.

Over time, its activities broadened to include special, multi-year communications projects with its members and the wider European R&D community, including:

13 June 2006:
Stockholm
Biotech Roundtable



10 December 2009:
Second Academic
Enterprise Awards,
La Mairie, Paris



- > **The Academic Enterprise Awards**, or ACES, an annual series of contests and events to name the best university spin-outs in Europe
- > **The Innovation Board**, a non-profit club for corporate and academic research leaders to debate and develop policy proposals for EU research
- > **Healthy Measures**, a series of events and reports on R&D for emerging “patient-centric” treatment methods such as personalised medicine
- > **Energy Futures**, a series of events and reports on energy R&D across Europe
- > **ERC=Science²**, an online science magazine and event series for the European Research Council, under Horizon 2020
- > **Science Cloud Consultation Group**, workshops and reports on EU policy for cloud computing
- > **The Widening**, a bi-weekly newsletter and network focused on central and east European research and innovation policy

Today the company, now led by CEO Maryline Fiaschi, has more than 25,000 subscribers to its twice-weekly open access newsletter on European R&D policy, and another 6,000 to its bi-weekly newsletter on central and eastern European innovation (The Widening). Its Web site has 2.5 million Web visitors annually. It manages two dozen in-person and online events a year. And the Science|Business Network now has more than 70 university, industry and public-sector organisations across Europe and beyond to Canada, Japan, South Africa and the US.

And its mission remains: to be an independent and informed voice bringing together the worlds of research, industry and policy – for the advancement of science, technology and society in Europe and beyond.

Interested in your organisation joining the Network? Want to subscribe to our newsletters? Attend our events? Visit www.sciencebusiness.net for more information and contacts.

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EUREKA	National Research, Development and Innovation Office of Hungary (NRDIO)
European Centre for Medium-Range Weather Forecasts (ECMWF)	Quebec Research Fund
European Investment Bank	Republic of South Africa - Department of Science and Innovation
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INESC Brussels HUB	Vinnova

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EIT Health	

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