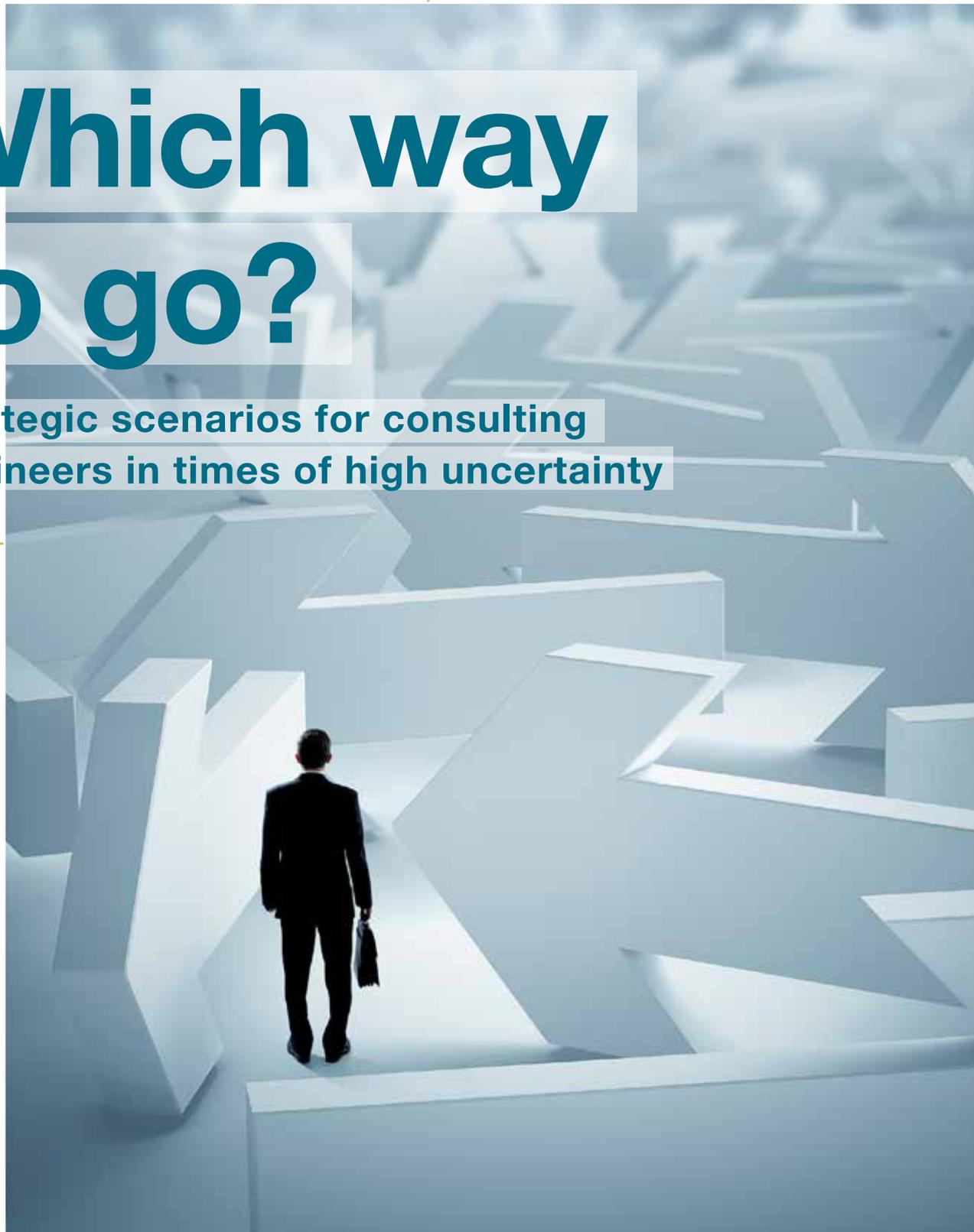


Which way to go?

Strategic scenarios for consulting
engineers in times of high uncertainty



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Preface

Who would have thought just a few months ago, that our business environment would be so fundamentally changed because of a virus that had unexpectedly circled the world?

In response, digital technologies became even more widespread, enabling a completely different norm in the way we communicate with each other, and in where and how we work. Economies were propped up. And the first real financial effects for the construction industry came through as dramatic inflationary price rises in construction materials.

To plan the way ahead, we need to better understand what other uncertainties our industry faces. Although digital technologies have turned a lot of our processes and work behaviour upside down, they are no longer regarded as 'uncertain'. We *know* we need to continue with digitalisation. What we are less aware of, or at least, less able to accept as a direct impact on our performance, is the mixture of external challenges: the daily threat of climate change, over-indebtedness and highly pressured global financial systems, an increasingly discordant European Union, even war, conflict and refugees affecting our borders.

Such issues can directly, and jointly, impact consulting engineers. But how? The future is foggy, and visibility is poor. Where will the changes end? Which trends will prove to be decisive in assessing the future? What will our industry look like in five years' time? Which key drivers will be formative for our market? How can our companies stay successful in a changing environment? These questions are not easy to answer in the increasingly volatile, uncertain, complex and ambiguous world that members of our associations face today.

We were very happy, therefore, that the EFCA Future Trends Committee was able to collaborate with the Centre for Strategy and Scenario Planning at HHL Graduate School of Management, Leipzig, Germany, in the development of a scenario-based strategic planning process for consulting engineers. The scenarios, around which this report is based, were systematically created from information and opinions gathered during a survey of 46 high-level experts in the engineering consultancy sector – engineers and partners and stakeholders. The report presents the process and its outcomes. It tells an interesting, and perhaps surprising, story about the possible presents in our future.

We, as a committee, feel that now is the right moment to explore the future and examine possible strategic developments. Representing industry associations, we want to give our member companies an overview of the current situation and support them as they navigate the fog, to find their individual strategic positions.

We thank all participants for taking part in the survey on which this study is based. Besides I am very grateful for the teamwork and the strong support of Nikola Matić, Marcin Mikulewicz, Magnus Höij, Maurizio Boi, Maximilian Grauvogl, Antoine Pigot, Géraldine Tondreau, Serhan Bakir, Inés Ferguson, Alison Eades, Prof. Dr. Torsten Wulf, Yannik Eisemann and Jan Van der Putten. Without their great commitment, this report would not have been possible.

Jeffrey Seeck

Chair of EFCA¹ Future Trends Committee,
Member of Verband Beratender Ingenieure
(VBI, the German Association of Consulting
Engineers)

¹ European Federation of Engineering Consultancy Associations

WHICH FUTURE ARE YOU PLANNING FOR?

EUROPEAN MARKETS

15TH APRIL 2025

It's a long honeymoon for small domestic engineering firms

Productivity has risen by 4% for the fifth year in a row and order books are still full but slow progress in harmonising regulations and standards to open up the EU construction and engineering sector means only small domestic firms are still enjoying a post-covid honeymoon.

Low borrowing costs, substantial subsidies for digitisation, and fragmented markets have combined to create another encouraging year for construction and engineering. While large companies are not gaining much through economies of scale, SMEs are flourishing under post-covid protectionism.

The sector took a serious blow in 2020 with some EU Member States feeling the heat when their market all but collapsed under lockdown policies and disrupted international supply chains. Immediate action on interest rates by the European Central

Bank, and investors able to borrow at 2%, helped create huge 'recovery funds' which pushed digitisation and a greener, more efficient built environment. The sector has been bouncing back since as far ago as mid-2021 when the use of sub-contractors was the best it had been for 20 years, and job creation reached levels not seen for seven years. Demand rocketed for residential and commercial building alike; a consequent rush on supplies pushed up prices including those of subcontractors. Inflation for goods and raw materials reached a 25-year high.

It was the rise in nationalist politics, however, that served small businesses at the expense of their larger domestic competitors. In countries like Spain, Italy, Germany and Sweden federal elections were won on the back of protectionist promises. The EU market has not been welcoming to international players. A complex regulatory environment and numerous standards have held them at bay. "We're in a veritable El Dorado of status quo," says Mathieu Renault, CEO of a small French firm of consulting engineers, "and an era of national specialists."

ENGINEERING TODAY

15TH APRIL 2025

EU super firms see off Chinese competition

EU 'super firms' are expecting another year of high returns and are successfully pitting themselves against foreign competitors who have been eyeing up the newly harmonised European market.

The construction sector was quick to respond five years ago when renewed collaboration amongst Member States led to a massive investment in healthcare and a €720 billion green recovery fund – much of which targeted greening buildings and infrastructure.

Productivity in the sector is up by 7% in 2025, not least because of a rapid digitalisation, and particularly by large firms. Building information modelling (BIM) has been central for increased innovation, collaboration and efficiencies.



Other technologies are also becoming mainstream – drones for project oversight, artificial intelligence for design and claim management.

With less bureaucracy, and streamlined standards, regulations and even technical language, the European market has been transformed into one of dynamic growth – and opportunity. But only for large firms which can take advantage of economies of scale and build their capacity by buying it up.

Chinese firms have been circling. They cannot compete on innovation but as more EU companies are having to move to Eastern Europe to find low-cost services, their competitive labour costs may help them find a foothold yet.

THE EUROPEAN ENGINEER

15TH APRIL 2025

Investment in digital technologies could be the key to survival

Construction and engineering firms who strategically invested in digital technologies prior to 2023 are managing to keep their share of the pie in an ever-shrinking European market.

Despite the best efforts of many EU Governments implementing a sleuth of economic policies and market support measures, the construction sector has been in growing turmoil since 2022 when market demand dropped by 6%. Although the European Commission made a big effort to harmonise regulations and building standards, and Member States approved huge sums to be made available for green investment, lockdowns and other major disruptions have been taking their toll and demand has been steadily falling at a further 3% per year. It is still early days to comment on the success of the EU €1.8 trillion stimulus package announced in

2021, but industry sources say clients are keen to maximise their green credentials in new projects.

The use of digital technologies, however, appears to be an indicator of financial health. Those players, large or small, that didn't invest in technologies like BIM (3D, real-time digital modelling) or modularisation, and didn't find the 4% improvement in productivity, are largely facing insolvency or acquisition. Pressure is also coming from foreign, digitised companies keen to access the liberalised market.

If there is good news for domestic firms, it is that there is no longer a shortage of skills. As market demand for construction falls, the cost of human resources, raw materials and energy, is falling too, by about 2% a year.

THE DAILY CONSTRUCTION NEWS

15TH APRIL 2025

Fragile recovery for construction but small firms still on danger list

Construction and engineering firms without the means, the motivation or the public support to digitise, could be balancing on a cliff edge, enjoying early signs of recovery but unaware of competitive foreign players ready to move in when demand picks up.

A new report published this week reflects the optimism amongst smaller construction and engineering companies in the EU – that the recession is over and brighter days lie

ahead. The economy is finally back on track, growing at 1% so far this year, compared to the 5% contraction back in 2021 – mirrored by the construction sector. So they could be right.

When covid forced a re-evaluation of market positioning in 2021, progressive companies, based more in north and central Europe, sought to further digitise. But SMEs in particular, especially those falling under austerity policies further south, experienced a more fatal

squeeze on costs and many folded. Many were unable to bear the costs of digitalisation.

Those that survived have largely been protected by a fragmented European market and low demand which made the European market unattractive for international competition. The danger of rising demand, if accompanied by regulatory harmonisation, is that it could open the European market next year and there will be no shortage of highly digitised foreign companies to slip in.

>>>

DIFFERENT HEADLINES FOR DIFFERENT FUTURES – ANY OF THE ABOVE POTENTIAL REALITIES COULD COME TRUE IN 2025 (STORIES BASED ON FOUR FUTURE SCENARIOS, SEE PAGE 14).

Preparing for the future - is it time for scenarios?

INTERNATIONAL COMPETITION IS NOT A THREAT FOR CONSULTING ENGINEERS IN EUROPE. PROJECT DEMAND IS UP, NOT LEAST DUE TO THE MASSIVE FUNDING EXPECTED FROM THE EU, INCLUDING OVER €720 BILLION THROUGH ITS RECOVERY AND RESILIENCE FACILITY. AND PUBLIC CLIENTS ARE KEEN TO FOCUS ON PROJECT QUALITY AND LIFECYCLE COSTING RATHER THAN AWARDING TENDERS SIMPLY ON PRICE.

Is this the outlook for consulting engineers for 2025? Well, maybe not. According to a 2021 study by Yannick Eisemann¹ that systematically analysed contributions from high-level experts across the European consulting engineering sector, international competition, an anticipated rise in demand, and further shifts away from lowest cost tenders, could be three of the most *uncertain* factors in our future.

The future arrives more rapidly every year. As globalisation deepens and EU regulations try to open up, the volatility, uncertainty, complexity and ambiguity in the construction and engineering industries increase. Few saw covid coming and fewer still anticipated economy-shattering lockdowns. But the process of analysing expert opinions as well as describing what futures could arrive, could help consulting engineers survive the fickle, or stormy, weather ahead.

OVER-CONFIDENT

Professor Wulf of the HHL Leipzig Graduate School of Management's Center for Strategy and Scenario Planning, acts as advisor to the EFCA Future Trends Committee. He supervised the study and can see the difficulties for managers in facing uncertainty. "Your shareholders, your employees and many other stakeholder groups expect management to provide a clear strategic direction. But how can you do this in times of increasing uncertainty? Many managers find the easiest way is to pretend to know how the future will unfold. This over-confidence is common. And not only in top management. But it could be your downfall. A better way of providing direction in times of uncertainty could be to start with scenarios that show how the future might unfold in completely different ways."

OPENING THE FIELD OF VISION

"We are trying to open up the field of vision for consulting engineers," he continues, "and maybe prompt them to think of totally different solutions for their companies, that they just hadn't thought of before."

Professor Wulf is all too aware that uncertainties can catch businesses unprepared. "You can never be sure of the changing threats and opportunities," he warns, "in fact nobody is safe. But firms need to consider developments now and take the right steps early on."

According to the study, as change accelerates, such uncertainty poses an increasing threat for management and ignoring it or acting under wrong assumptions can, at best, lead to unrealised opportunities. It can also cost a firm its competitive advantage or even put it out of business.

HARMONISATION – CRITICAL UNCERTAINTY

The question of whether EU regulations for the construction industry will be harmonised over the next five years was one of eight critical uncertainties thrown up by the analysis. "Most companies are striving for this," says Professor Wulf, "because at a first glance it makes business in the EU simpler, easier and decreases costs. But if it gets easier for one player, it gets easier for all and foreign competitors might come in. So if the sector wants harmonisation, it needs to make sure someone somewhere is taking care of market development, maybe a strong national association, or EFCA. Perhaps the larger European players should not just look

¹ Eisemann, Y. (2021). *Strategic Scenario Analysis for the European Federation of Engineering Consultancy Associations (EFCA) until 2025. An Application of the HHL-Roland Berger Approach to Scenario-Based Strategic Planning to the European Engineering Consulting Industry. PhD Thesis.*

at their own company, but create an ecosystem with smaller players that surround them and work together on different kinds of projects. If the ecosystem works, then harmonisation can have overall benefits.

“In any case, you need to be aware of the uncertainties that lie ahead of you in your industry, and you need to think them through. This is where scenario planning might help.”

TIME TO JUMP

The analysis also revealed that ‘digital technology’ was less of an uncertainty and more of a prerequisite. “The study showed that technologies such as BIM were already regarded as a basic requirement. If companies haven’t got it, now is the time to jump,” says Professor Wulf. The current impasse with software providers pours fuel on this fire. With prices 25% higher in the EU than in America, for example, all companies are nervous about their technology costs, pointing perhaps to another potential area for joint action.

Traditional strategy tools are relatively static and not designed to consider a dynamically changing environment, usually formulating just one future projection with ‘one best strategy’ for the following three to five years. While they work in stable environments, their shortcomings are magnified in a highly volatile, uncertain and complex environment, such as that currently being faced by consulting engineers.

FLEXIBLE STRATEGIES

Professor Wulf points out that the uncertain days of the 2008/2009 financial crisis brought scenario-based strategic planning to the fore. “Managers wanted to make their strategies more flexible,” he says. “They needed a way to react to the ever-increasing uncertainty in their external environments.”

The scenarios are gold dust in many ways. “What is the most probable outcome?” the Professor asks. “Once you know that, you can also prepare for the less probable.”

But how well do scenarios work?

Reading the scenarios through just once was enough for Marcin Mikulewicz, Vice President of SIDiR (the Polish Association of Consulting Engineers) and member of EFCA’s Future Trends Committee, to feel a certain impact.

“I heard on the news this morning that we might be welcoming another wave of migrants this autumn, through Belarus. My mind immediately made a link to one of the Scenarios. I could see down the line what it might mean for us, consulting engineers in Poland. And with that picture in mind, I broadly knew what aspects of the business we could revisit now to prepare for such a future.

“Knowing all of these scenarios,” he continues, “even though they might not fully happen, let the reader locate their thoughts within a well-described reality that might actually occur to a certain extent.”

“What you read in the scenarios will happen in some way,” confirms Professor Wulf, who also reports the growing use of scenarios by international management consultancies. “They may never become a complete reality but there will be a tendency for aspects to come true. Therefore, to fully benefit from working with scenarios, you need to define indicators and continuously monitor them to understand which scenario will be most likely to emerge – and therefore which strategies you might have to implement in your company.

“These indicators help you to recognise early on which scenario is more likely to come true, and to be able to make more sense of the future,” he says.

Construction and engineering — where are we now?

THE MARKET ENVIRONMENT IN 2019/2020 IS DESCRIBED BELOW TO HELP SET THE CONTEXT FOR NOW BEING A PRIME TIME TO DEVELOP FUTURE SCENARIOS.

Construction and engineering and covid

An EU population growing at 1.1%, and an economy growing at 1.6%, were the overriding **drivers** for construction in 2019. The industry contributed 9.5% to EU GDP that year, employed 12.7 million workers, and witnessed investments growing at 2.6% due, in part, to attractive borrowing costs.

Innovation mainly by large companies was pushing **productivity** up and production costs down but the sector as a whole had seen no improvement in productivity in the 22 years to 2018. This compares to EU manufacturing, for example, which improved by 60% between 1996 and 2018. The reasons included: a highly fragmented construction and engineering market limiting benefits of scale, extensive standards and complex regulations, bureaucracy, law suits and project delays, short-term project-based thinking, and a



rigid culture. The industry had also long suffered from a lack of skills which, by 2019, was particularly noticeable for new digital talent.

The European construction industry is a slow adopter of **digital technologies** compared, for example, to the USA, largely due to the number of smaller sized companies and their limited capabilities to invest. However, the following digital technologies were becoming mainstreamed by 2019:

- BIM – 3D, real-time digital twin – at the core of the industry's digital revolution
- Smart buildings - transmitting data and improving operational efficiency
- Modularized construction and off-site manufacturing
- Drones and virtual reality - improving site inspections and construction oversight
- Off- and on-site 3D printing of construction components

Sustainability trends were becoming embedded in industrial practice by 2019 including ‘whole life cycle’ approach to projects and use of value- rather than price-based tendering in public procurement. This enabled projects to better incorporate quality, accessibility, social and environmental characteristics, after-sales service, and delivery. 62% of tenders had used MEAT¹ by 2016, enabling consulting engineers to develop a competitive advantage by specialisation and differentiation and win public tenders on a basis other than cost.

Environmental impact and sustainability were also being supported by EU Directives and special programmes to reduce emissions in the construction industry, including the Energy Performance of Buildings Directive and Renovation Wave (schools and hospitals, decarbonizing heating and cooling). 160,000 green jobs are expected in the construction industry by 2030. Principles for Buildings Design and the Circular Economy Action Plan focus on reducing waste and increasing the recyclability of construction materials and building elements. The European Green Deal was passed in December 2019.

The situation **changed dramatically in early 2020**. Lockdowns, travel restrictions and new health and safety protocols hit the construction industry hard. While almost all construction activities had to be stopped in countries like Italy or Spain in early 2020, there were significant challenges elsewhere related to supply chain bottlenecks, increased costs for protective gear, and increased labour shortages. The annual average construction output fell by 5.7% in 2020. The impact was strongest in the second quarter of 2020 when construction output declined by 13% compared with 2019.

Total construction output is expected to recover by 4% in 2021, but full recovery to pre-pandemic levels in 2021 or 2022 is unlikely. Rising private and public debt levels may curb further investments in 2021. Such forecasts heavily depend on how Covid-19 plays out. The outlook for the construction industry remains highly uncertain and could change quickly in either direction.

In 2020 the **EU committed to becoming climate-neutral by 2050** and to cutting greenhouse gas emissions by at least 50% by 2030. It launched several initiatives under the European Green Deal, such as offshore renewable energies, biodiversity, rail transportation, safe and sustainable chemicals, and building emissions. NextGenerationEU,

as part of the Covid-19-related stimulus package from the EU, is focused on green and digital investments.

Market forecasts from: IFO Institute. (2020, December 24). *Construction activity expected to fall by 7.8% – complete recovery not before 2023* [Press release]; van Sante, M. (2021, March 2). 2021 European Construction Outlook: Output to recover by 4%. *ING Think*; FIEC. (2020). *Statistical Report N°63 (Edition 2020): European Union*. European Construction Industry Federation. Eurostat. (2021). *Production in construction down by 3.7% in euro area and by 3.3% in EU*. Eurostat, the statistical office of the European Union.

¹ MEAT, the ‘most-economically advantageous tender’, was first included in the 2004/18/EC Directive on public procurement. It evolved into the ‘most advantageous tender’ in the 2014/24/EU Directive.

Creating scenarios

The process

The creation of the four future scenarios for the engineering consulting industry in Europe followed the HHL-Roland Berger process of scenario-based strategy planning. This process contains six steps (see Figure 1).

- 1 Define scope.** This study set out to develop scenarios for the engineering consulting industry in Europe over a five-year period, i.e. until 2025.
- 2 Analyse perceptions.** Perceptions were gathered from 46 high-level experts representing consulting engineers and external stakeholders i.e. construction firms, digital/construction/software providers, financial investors, private and communal customers, regulatory bodies, and management consultants from Central, Eastern and Southern Europe, and Scandinavia. They identified 45 important influence factors which they felt might impact the consulting engineering industry in Europe over the next five years.

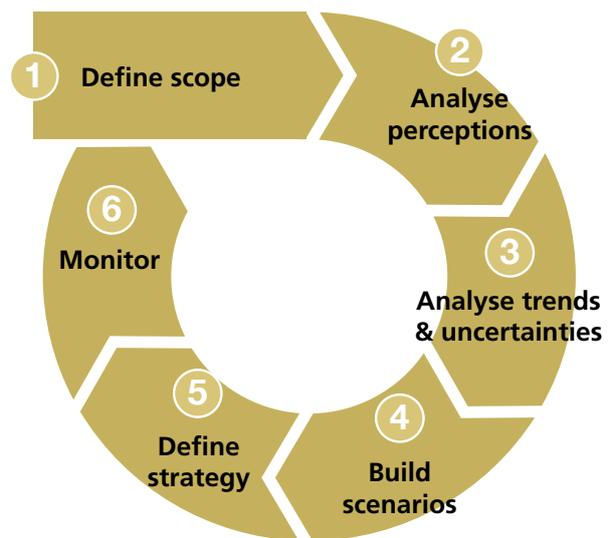


Figure 1: Scenario development (the HHL Roland-Berger process¹)

They then evaluated these factors regarding their impact on the future profitability of the industry and their levels of uncertainty.

- 3 Analyse trends and uncertainties.** The 45 factors were plotted according to their impact and degree of uncertainty (see Figure 2). The 'critical uncertainties' that emerged were marked for deeper investigation.

¹ The HHL Roland-Berger process was developed by Schwenker and Wulf in 2013 for use alongside more traditional strategic planning tools.

- 4 Build scenarios.** Two key uncertainties, ‘project demand’ and ‘degree of openness/fragmentation of the market’, formed the two dimensions of a matrix (see Figure 3) designed to identify four extreme future scenarios. An influence diagram shows the chain of causes and effects that explain different states of these key uncertainties (see Figure 4).
- 5 Define strategy.** The findings (including the most uncertain of the influencing factors) can now be used to develop a core strategy for a company as well as strategic options for each of the four scenarios.
- 6 Monitor.** By comparing the scenarios with real-world developments, strategic options can be selected to go along with the core strategy.

MORE CERTAIN

The ‘trends’ of the top left of the grid (see Figures 2) show which developments are viewed as being more certain and were used to explain the developments that led to the state described in the final scenarios. Some aspects had developed in the industry to such an extent that they were almost taken for granted, such as the societal dot (a) ‘rising environmental awareness’.

BIM, already noted as the core of the industry’s digital revolution, unsurprisingly has the greatest impact on profitability; the industry has little doubt about this, see dot (b) ‘faster adoption of BIM², big data and the internet of things’. Dot (c) ‘increased usage of sustainable materials, processes, and machinery’ is also widely accepted, and recognised for its economic advantages. Dot (d) ‘investment and subsidies for green energy’ receives strong political support and experts strongly believe it will continue into the future; it has a big impact

What is certain and what is not

The whole process of developing scenarios revolves around identifying what influencing factors can be relied upon as more or less ‘certain’, i.e. as trends, and which are the ‘critical uncertainties’ that demand more attention. These critical uncertainties are the basis for designing the four future scenarios.

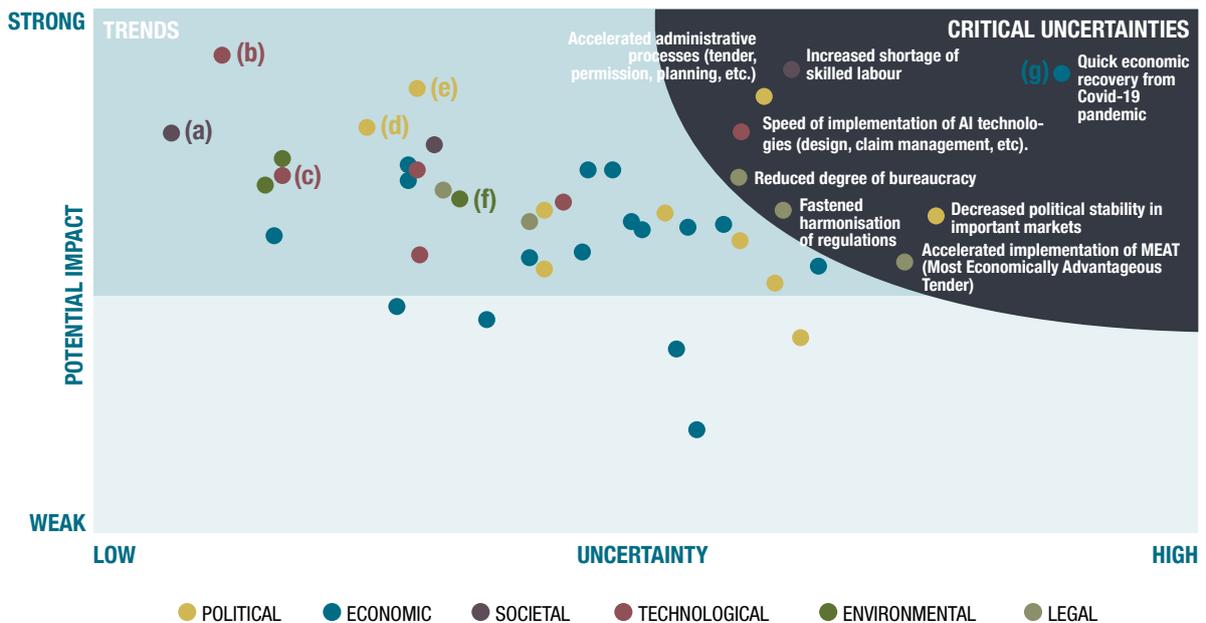


Figure 2: The most important factors influencing the profitability of the consulting and engineering sector – their level of impact and degree of uncertainty.

² BIM is a 3-D, real-time digital twin enabling better collaboration, information management, planning, etc.

for consulting engineers who have been designing green installations for decades. There has also been sufficient movement on dot (e) 'increased public investments in infrastructure and transportation' for the sector to plan, knowing its expertise in this area will be needed by future clients. And dot (f) the 'increased impact of climate change' is similarly important, driving much of future funding.

LESS CERTAIN

The factors of the top right of the grid are those that industry experts felt were uncertain and yet seriously affect industry profitability. They are external, out of the control of consulting engineers, especially dot (g) 'quick economic recovery from Covid-19'. But if companies are to prosper, how they respond to these factors is vitally important.

The eight 'critical uncertainties', in their most optimistic or pessimistic states, provide the framework for the development of the four different future scenarios. The eight, ranked by potential impact, include:

1. Rapid recovery from 'covid' (economic)
2. Shortage of skilled labour (societal)
3. Accelerated administrative processes (political)
4. Speed of artificial intelligence, A.I., uptake (technological)
5. Less bureaucracy (legal)
6. Speed of harmonisation of regulations (legal)
7. Less political stability in important markets (political)
8. Faster implementation of MEAT³ (legal)

Only one factor in the top eight relates to technology, and none relate to the environment. Generally, technological disruptions and green investment are already well on the way to being a mainstay of the construction industry, and most consulting engineers are aware that they should be taking both seriously. However, the 'critical eight' are not so certain and CEOs are wary of how they may play out.

Looking for dimensions from the list, (1) and (7) both heavily affect investment, and therefore 'project demand'. This was therefore taken to form the first of two dimensions needed for scenario development (see Figure 3) – Step 4 of the process.

(3), (5), (6) and (8) determine how smoothly the permission / tender processes are affecting the development speed of construction projects. But they also determine how fragmented the regulations are across Europe, and therefore how easy it might be to establish cross-border projects, or to enter foreign markets. (2) and (4) are closely related because in a market where regulations are harmonised, artificial intelligence can extend further and be better at improving productivity. In a more fragmented market, skilled labour has to be more specialised, and therefore runs the risk of being in short supply.

Uncertainty (8), faster implementation of MEAT, was not picked up by as many study participants as expected despite its high importance. Despite lobbying for it, consulting engineers as a group have limited influence on its development. Other weak signals and blind spots in this process step were further considered as scenarios and subsequently developed and described.

These six uncertainties together (2, 3, 4, 5, 7, 8) affect 'market openness and fragmentation', which was taken as the second dimension.

...

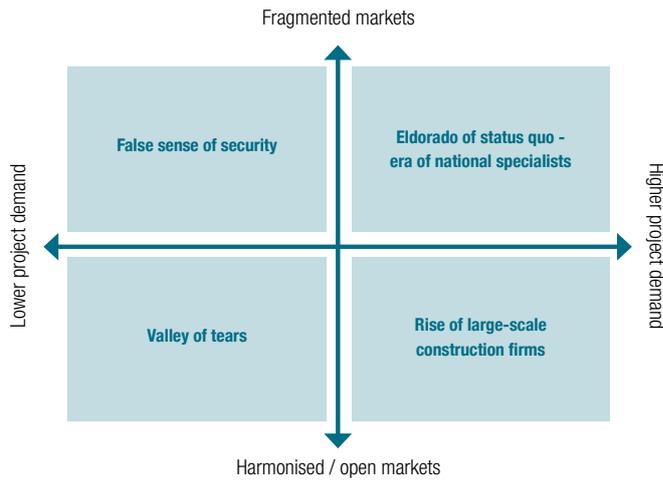
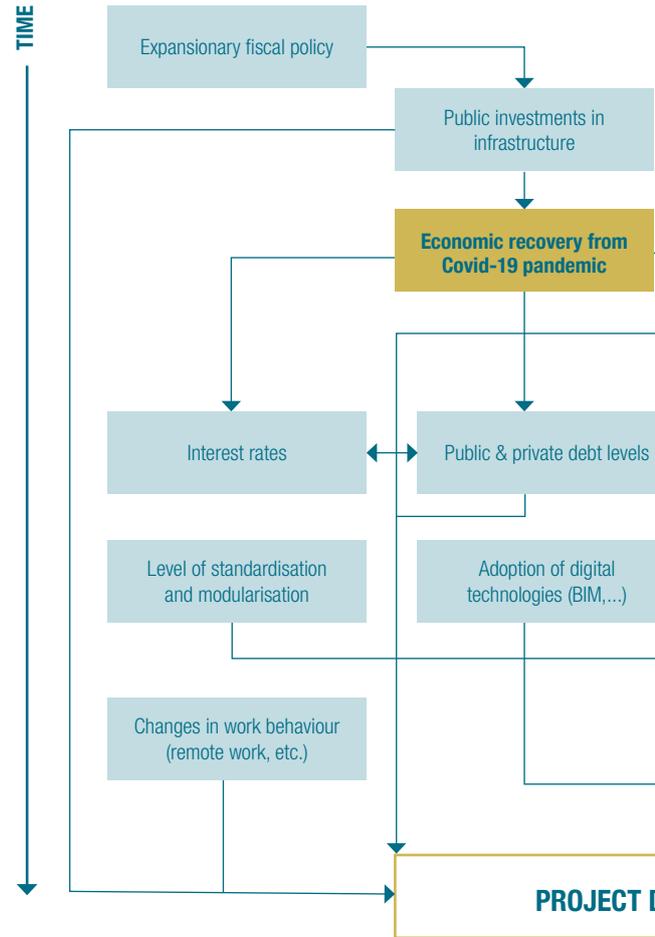


Figure 3: Matrix showing four future scenarios emerging from the two dimensions of 'project demand' and 'openness of markets' (derived from the sector survey)



Emerging scenarios

'Project demand' and 'market openness and fragmentation' form the dimensions of the matrix (see Figure 3) which, when extended to their most positive and most negative, give rise to four distinct scenarios. Each quadrant is then given an expressive name to capture the essence of that scenario.

DETAILING POSSIBLE FUTURES

Having identified the four scenarios, a deeper study of the causes and influences of both 'project demand' and 'market openness and fragmentation' can start to show the complexity behind them and provide some understanding of how each scenario might play out.

The 25 most important trends and eight critical uncertainties (from Figure 2) are structured into an influence diagram which shows complex chains of causes and effects which

explain different states of the two scenario dimensions (see Figure 4).

Increasing environmental awareness, for example, affects green energy investments which might increase project demand in the engineering consulting industry. At the same time, increasing political stability in important markets might speed up administrative processes which results in a stronger harmonisation of regulations across European markets. Thus, the influence diagram helps to describe the individual scenarios in a more structured way.

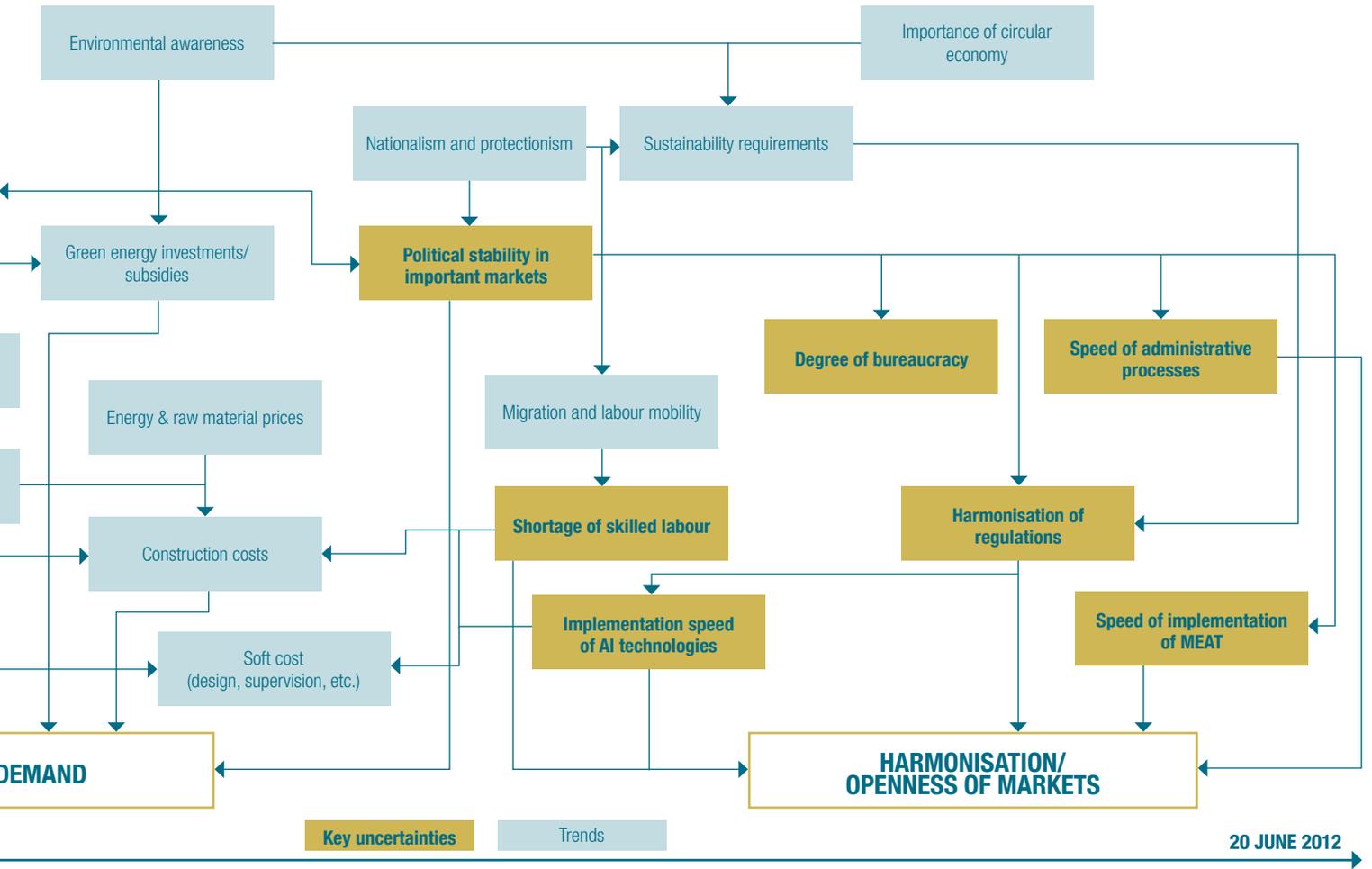
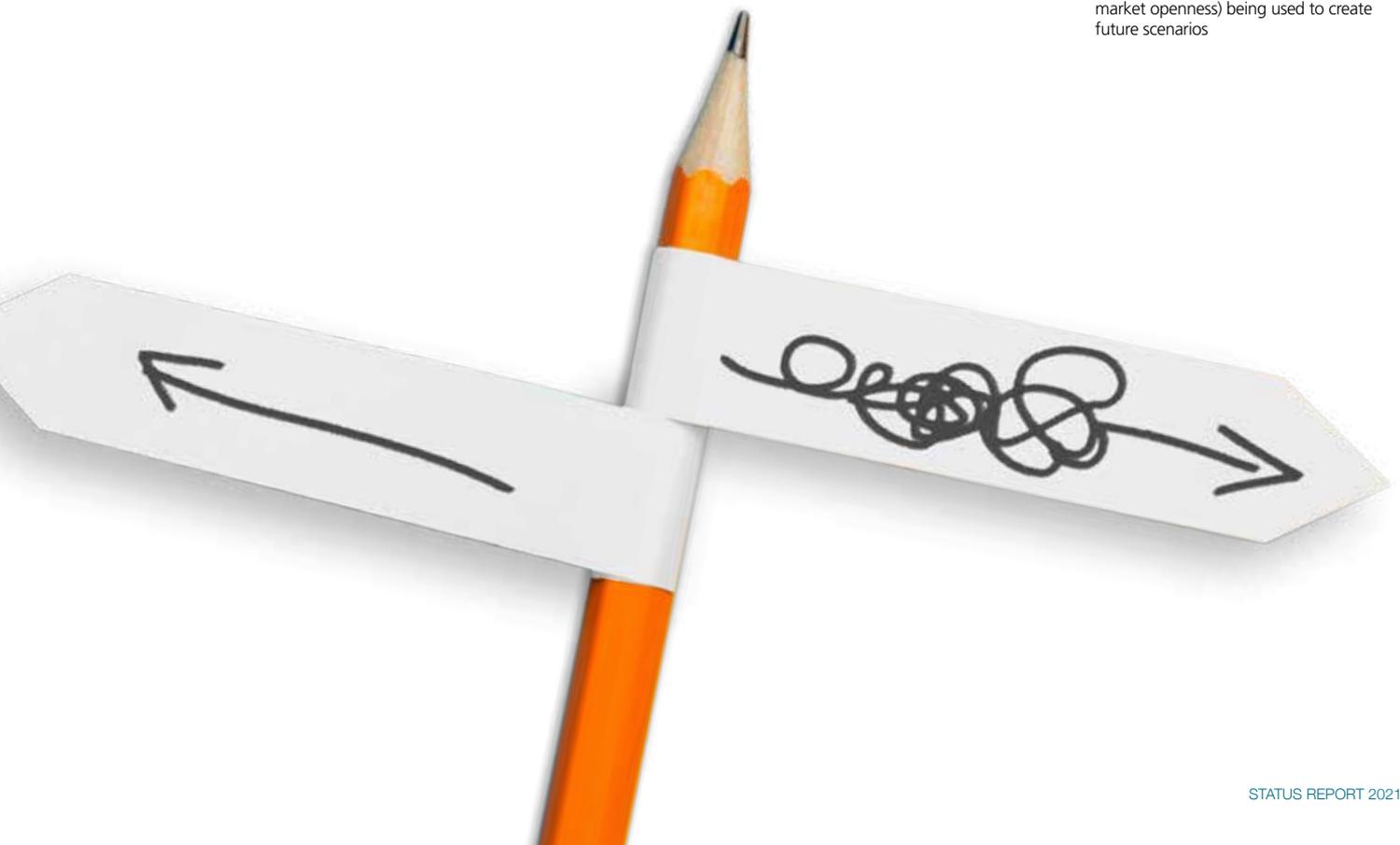


Figure 4: Influence diagram showing complex causes of both dimensions (project demand and market openness) being used to create future scenarios



The four potential futures

THE NEWSPAPER ARTICLES ON PAGE 4 WERE EACH BASED ON ONE OF THE FOLLOWING FOUR SCENARIOS.



Scenario A – Eldorado of status quo / an era of national specialists

It's the 15th April 2025 – turnover is high and small domestic firms are thriving



- Rapid post-covid recovery
- Protectionist barriers
- Record high turnover, full order books
- Rising demand for greener building/infrastructure
- Digital tools widespread
- Domestic firms dominate, SMEs thrive
- Large firms unable to exploit scale
- Slowing consolidation and vertical integration of large firms

WHAT HAPPENED IN THE FIVE YEARS 2021 TO 2025?

Covid prompted an expansionary fiscal policy in the EU which served to boost the economy and accelerate its recovery. In early 2021, subsidies and supporting measures were passed for health, digitisation, education and households. By May 2021, unprecedentedly high investment had resulted in a broad covid testing and vaccination strategy to avoid the need for further lockdowns and to stabilise infection rates. Borders were re-opened, enabling cross-border trade to quickly return to pre-lockdown levels which eliminated bottlenecks in the supply chain and pushed up overall production. Hospitality, tourism and transportation particularly benefited from the removal of travel restrictions in late 2021. Leisure travel recovered particularly quickly as high consumer demand followed the imposed cut in spending. Demand for business travel reverted to pre-lockdown levels at a slower pace as home-working prevailed.

All measures helped the economy to quickly reboot which then boosted demand for construction projects. However, the high level of spending came at a cost and public debt went through the roof. The European Central Bank (ECB) continued its policy

of low-to-negative interest rates to mitigate a potential debt and solvency crisis. Long-term borrowing rates thus remained low in all European countries, at around 2%, allowing investors and developers to enjoy low financing costs.

Despite the successful collaboration that dealt with covid at a European level, national tendencies have strengthened over recent years. Parties like Vox in Spain or the Five Star Movement in Italy promised protective measures in their election manifestos and as they won, federal governments followed a protective agenda to sustain their economies and reduce national debts. Federal elections in key markets were heavily influenced by Alternative for Germany in 2021, Sweden Democrats in 2022, Vox in 2023 and the Five Star Movement in 2023. Opposing views on how to manage debt in southern countries emerged in 2022 and began to drive a wedge between EU Member States.

Such nationalism upset the mutual recognition of professional qualifications between countries and curtailed labour mobility. Tendencies to reach consensus on technical standards, environmental requirements, and overall regulations, came to a halt, leaving a highly fragmented regulatory environment across Europe. Tenders, building permits and other administrative processes requiring compliance have become more time-consuming and resource-intensive and still remain slow. The average time taken to receive a permit in 2025 is the same as in 2020 – 165 days.

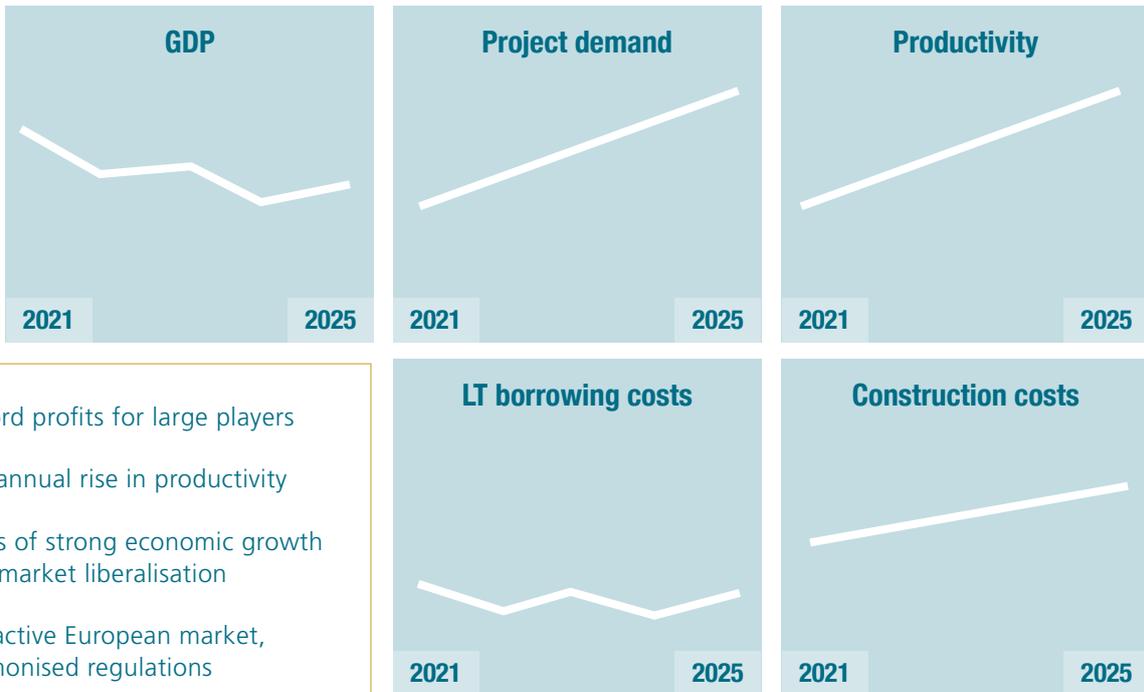
There have been encouragingly high investments in the digital transformation of the construction industry, largely as a result of subsidies for digitisation and the low costs of borrowing. There has also been a greater uptake of BIM, 60% of projects in 2024 were using it, and more off-site manufacturing. The industry can increase modularisation and develop better 3D printing technologies. All these changes have been improving productivity by about 4% a year.

The developments and constraints of the last five years mean construction has remained in a status quo. Consolidation slowed as large firms could no longer exploit their comparative advantage of scale, and highly fragmented markets protected domestic players from foreign competition. This protection, plus high demand, has led to full order books and order backlogs for domestic construction and engineering consultants who are flourishing in the current political-economic environment.

“A fragmented regulatory environment and market entry barriers for foreign competition provide us with a favourable political-economic environment, where we can offer competitive solutions to our clients.”
CEO of a small German engineering consulting firm.

Scenario B – the rise of large-scale construction firms

It's the 15th of April 2025 – open markets are attracting domestic and foreign players



- Record profits for large players
- 7% annual rise in productivity
- Years of strong economic growth and market liberalisation
- Attractive European market, harmonised regulations
- Big technology players using new digital business models to win parts of the value chain
- International players interested in EU market, especially Chinese and American

WHAT HAPPENED IN THE FIVE YEARS 2021 TO 2025?

Economies suffered tremendously from the lockdowns and disrupted international supply chains of 2020 as Governments responded to Covid-19. EU Member States stepped up collaboration, particularly with investments and strategies for testing and vaccination. At the same time, they pushed for green growth and development, doing their utmost to avoid a long-term recession.

As incidences of Covid-19 fell, lockdowns were eased and industrial production picked up. Extensive support measures helped to mitigate the risk of recession and stimulate the economy, like the new tax. A concerted effort was made to reduce bureaucracy. This, along with a surge in digitalisation and harmonisation, helped speed up public procurement procedures, knocking 45 days off tender lead times. As migration policies eased, labour also became more mobile; the booming construction industry with its high salaries attracted plenty of foreign workers.

The ECB held interest rates below 0% to stabilise the markets, and long-term borrowing remained around 2% across all Member States – providing much-needed capital for the capital-intensive

construction sector. Foreign investment, attracted by the policies of pro-EU Governments, also brought in new capital and helped to boost demand for construction.

Surprisingly quick overcoming of the covid upset in the second half of 2021 trust in Governments grew and by late 2021 pro-EU tendencies increased. This supported the quest for harmonised regulations, standards and a common technical language across Europe, which had been in defence mode in recent years. Innovation was given a boost by the strong uptake of the MEAT procedure and by 2023 virtually all construction projects were using it. This shift away from simply building projects on the basis of price, and procedures actively encouraging digital technologies, has led to the greater uptake of BIM (real-time, 3D digital construction tools) and other innovations such as drones for project oversight or artificial intelligence for design and claim management.

It was clear, even in 2020, that the dramatic drop in industrial production and fewer people travelling would lower carbon emissions. The public remained conscious of the benefits on the natural environmental and elected Governments who promised to stick to Paris climate agreements: regulations were directed strongly towards green investments in early 2022. Elections at the European Parliament in 2024, and at a federal level up to today, put political parties in power who also promoted (and still do) growth policies, digitalisation, sustainability and market liberalisation.

In recent years construction costs have been more contained than in the growth days of 2016-2019. Sharp rises in construction cost in 2021 were contained by 2022 and have been rising at just 3% a year since. This is despite tighter environmental requirements and digital investments. Soft costs for architectural, design and engineering services have been stable, even decreasing in real terms, after inflation, as international competitors move in.

The new policies, including those for harmonisation, were a boon to large companies. They took full advantage of their pre-covid financial health and potential for economies of scale and continued their digital investments. They now also began acquiring those smaller businesses that had suffered significantly during the lockdowns and consolidation has continued up to 2025.

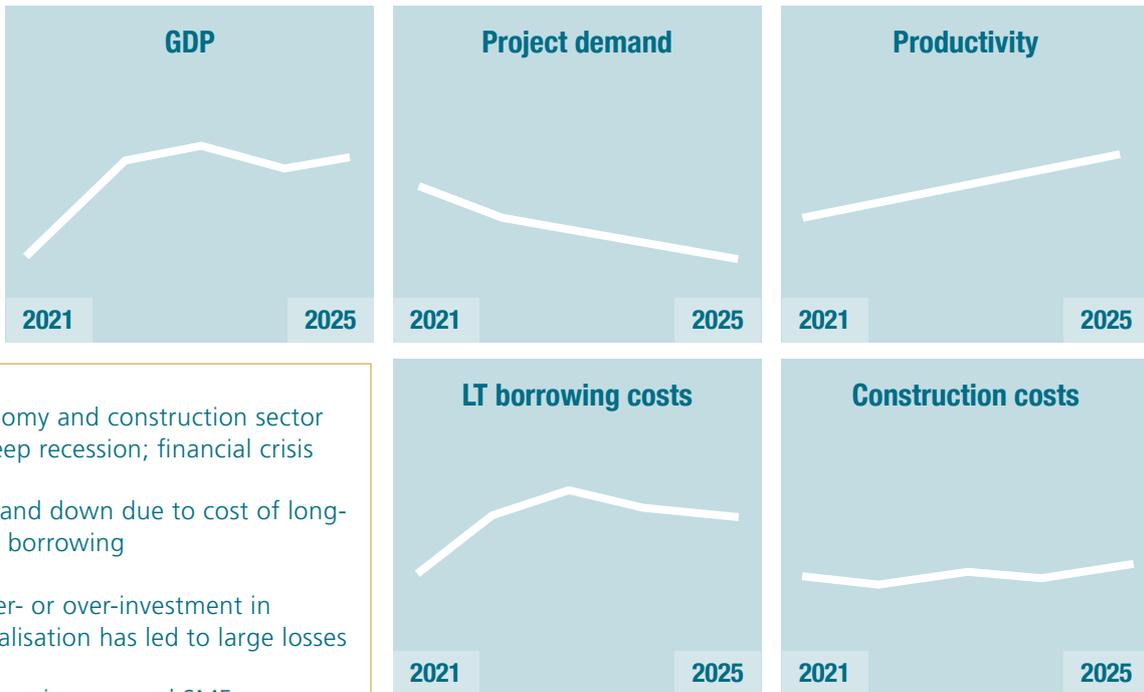
Subcontracting simpler and highly standardised services to low-cost countries was used as an arbitrage opportunity from 2023 onwards. This enabled large engineering firms to offer more capacity and to exploit cost differences, boosting their own profit margins. Productivity has risen by a healthy 7% a year – more than offsetting any price increases in raw materials, salaries or energy.

On the downside, small engineering firms struggled to benefit from market developments. They still need to invest in technology to achieve the necessary productivity gains in 2025, but rising prices for software and digital tools, limited financial capacity, and intense competition has put the blocks on their spending. They remain in a weaker position in the market than their larger competitors.

“We were early to invest in digital systems and then we acquired several SMEs, so we strengthened our competitive position in cost and quality. The market is strong, and because regulations are so well harmonised these days, we are really exploiting our benefits of scale for further growth, and harvesting the fruits of our hard work,” says the Chief Finance Officer of a highly integrated construction firm.

Scenario C – Valley of tears

It's the 15th of April 2025 – the recession continues and firms are squeezing margins to win bids



- Economy and construction sector in deep recession; financial crisis
- Demand down due to cost of long-term borrowing
- Under- or over-investment in digitalisation has led to large losses
- Fierce price war and SME bankruptcies
- Market consolidation
- Foreign players moving in to a liberalised market
- Worst sector performance in a decade

WHAT HAPPENED IN THE FIVE YEARS 2021 TO 2025

GDP in the EU shrunk by 6% in 2020 when Governments brought in lockdowns, people stopped travelling, and supply chains became seriously disrupted as a response to SARS-Cov-2.

EU Member States launched a European-wide vaccination strategy – including 1.1 billion doses for 450 million citizens. The strategy was a disaster. Vaccines were not delivered on time, and AstraZeneca's product developed serious complications in the spring of 2021. The virus mutated, and a rising number of 'cases' meant lockdowns continued into 2022. It wasn't until the end of that year that 80% of the European population had been vaccinated, paving the way for lifting restrictions. Economic growth was weak.

Tourism, hospitality and transportation were particularly hard hit: employees were laid off and firms declared bankruptcy in their hundreds. Unemployment in the EU rose to 10%, peaking in

southern States with Spain at 20%, and Italy at 15%. Debt and non-performing loans increased across all sectors, creating more insolvency. The economic recession turned into a financial crisis in 2022.

In order to resolve the terrible economic situation in Europe, the European Commission initiated a stimulus package of €1.8 trillion to turn the trend around. Additionally, harmonisations of regulations were brought forward in several fields, including construction in 2023, with the goal to further stimulate the economy.

With co-operation the only route to long-lasting solutions, pro-EU parties joined forces in major EU countries and were able to win the federal elections between 2022 and 2024. In an attempt to bolster the negative economic development the governments of these EU states worked together to focus on economic, environmental and technological developments. Tax reductions, compensation for reduced hours and subsidies for digitalisation were passed. The time taken to get a building permit fell to 130 days as bureaucracy was slashed. New Governments dropped their additional requirements for the construction industry as they fostered again the growth of the single market.

The EU's ambitious goal of being carbon-neutral by 2050 meant investment continued in renewable energy and green construction. In 2023, VAT was reduced for reconstruction and demolition as one of a package of measures to modernise the built environment. Overall, demand for construction has been falling since 2021, initially by 6% then by about 3% a year to 2025.

Parallel to political efforts, the European Central Bank has been keeping interest rates low and following policies of quantitative easing. Dramatically, however, the cost of long-term borrowing rose to 10% as investors became nervous about the heavy debt and weak industrial outlook.

In view of the dire economic situation, there was fierce competition between players in the construction sector on price, as they grappled for their share of a shrinking, though liberalised market, which was also attracting foreign competitors. SMEs, often acting as sub-contractors, faced exceptionally high pressure on their profit margins, squeezed by large players cutting costs.

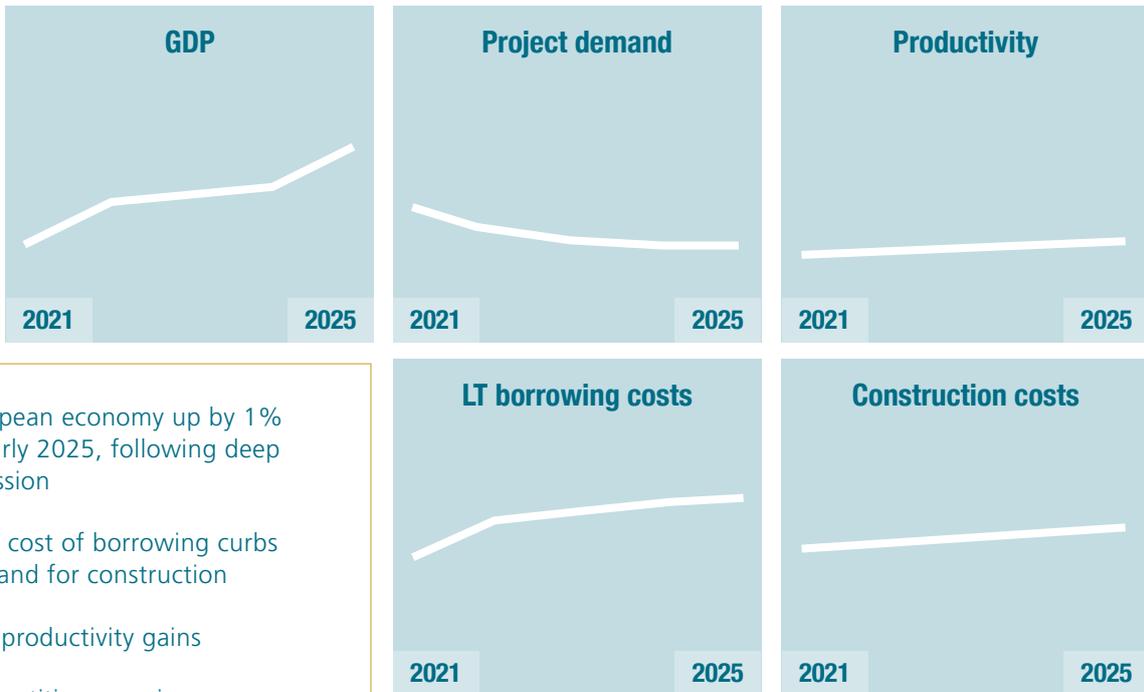
Those companies that had invested in digital technologies prior to 2023 managed 4% gains in productivity by using BIM, modularisation, and standard design libraries and stayed afloat. Those that failed to invest, or over-invested, are not faring so well and there is mass insolvency. Large players, domestic and foreign, have been acquiring struggling SMEs to further leverage their economies of scale. Low-cost international players are particularly competitive, particularly those from China.

The shortage of skills disappeared, as demand fell, and the cost of human resources, raw materials and energy, is now dropping by 2% a year. Increasing productivity is also reducing costs. But alongside this was rising costs of capital – construction costs are stagnating.

“The European construction industry is going through its roughest phase for years,” says one research analyst. “After three years of fighting each other on price, small businesses are facing bankruptcy. There’s going to be a lot of buyouts and mergers in the years to come. I’m sure the arrival of foreign players in our liberalised market won’t help the performance of domestic firms.”

Scenario D – False sense of security

It's the 15th April 2025 – firms have been feeling protected in the struggling economy but markets are now moving to harmonise



- European economy up by 1% in early 2025, following deep recession
- High cost of borrowing curbs demand for construction
- Low productivity gains
- Competition on price causes shrinking profit margins
- Insolvencies and consolidation
- Fragmented regulatory environment and protective measures cushion SMEs
- Foreign companies face entry barriers but are highly digitised and competitive

WHAT HAPPENED BETWEEN 2021 AND 2025?

In 2025, the EU has finally experienced a turnaround in the economy and GDP is growing at 1.5%, largely due to a good recovery in the markets of Western Europe. This follows the 5% drop in 2021, and 2% falls each year to 2024. Domestic construction firms are excited by the positive economic outlook and feel protected by the continuing highly fragmented markets even though there is a danger that this is giving them a false sense of security.

While European players have been weakened financially and can only generate limited productivity gains in such a challenging environment, foreign competitors have evolved into truly digital players, far outpacing their European counterparts. As demand increases, European markets will become more attractive to foreign firms which, where highly digitalised, pose a threat that European construction firms should not underestimate.

The EU and its Member States launched a massive stimulus package back in 2020, targetting households, SMEs and large corporations, to help bolster an economy that was rapidly shrinking due to Covid-19 restrictions. A European-wide testing and vaccination strategy had been developed in 2021 but virus mutations caused vaccines to be ineffective or less effective resulting in repeated lockdowns. It wasn't until May 2022

that vaccination rates reached 80% of the European population – the level where restrictions and lockdown policies could finally be lifted.

By mid-2021 unemployment had risen to 15% in Italy and 20% in Spain and local economies welcomed restrictions being lifted, despite the number of people testing positive for Covid-19 remaining significant.

Different approaches to dealing with Covid-19 created a scattered and unstable political landscape in Europe. National elections in Germany in 2021 and France in 2022 were dominated by the pro-European and climate-friendly Greens and En Marche. In Spain and Italy, Vox and the Five Star Movement were more prominent by 2023, promoting nationalistic and protective policies. This threw a spanner in the works for EU-wide harmonisation of regulations for the construction industry – particularly for technical standards, environmental requirements, and overall regulation. Administrative processes remained slow and it still took 165 days, as it did in 2020, to get a building permit.

Member States also differed in fiscal policies, with western Europe enacting an expansionary response in 2022 and promoting digitalisation, infrastructural and environmental projects. The ECB responded to rising inflation by increasing interest rates, which forced highly indebted countries to reduce spending and public construction projects all but dried up.

In the south, debt : GDP ratios were 150% or more and the cost of capital rose to 10% with highly risk-averse lenders. In central Europe, with its slightly more hopeful outlook and lower risk, borrowing costs rose to 6%.

Demand for construction fell by 4% in 2021 and by a further 2% until 2024 alongside annual 2% rises in costs. This year the sector seems to be making a recovery with demand up by 1%. The years of falling demand, however, have seen the labour shortage slowly disappear and salaries down by about 1% per year. Similarly, the price of energy and raw materials decreased, by about 2% a year.

Productivity has been growing annually but only by 1%, held back by limited progress in digitalisation with its mediocre political support, and a continually fragmented regulatory environment (which nonetheless served to protect smaller firms). However, these modest gains were offset by the rising cost of capital. Construction companies started to compete on price from early 2022 to secure clients, and sought to maintain margins with massive cost-cutting exercises and lay-offs. Many firms, especially SMEs, did not survive and were quickly bought out. Some would have survived if it had not been for the general lack of interest in the domestic market, by foreign competitors who are hesitant to enter but could show up at any time.

Different regions supported the industry to different extents. In the West, there was more political support for digitalisation and more public spending on green construction. Economic development generally was better and companies could afford to invest more in BIM and modularisation. This gave them productivity increases of up to 2% a year. Companies suffered more in southern Europe. There was austerity, lower demand for projects and less political support meaning companies invested less in BIM putting them at a disadvantage for more digitised competitors. Margins were tighter and solvencies more widespread, being particularly high in Italy where SMEs dominated.

“European players are simply not prepared for the imminent flourishing of the market,” says Chief Strategy Officer at an Italian architectural firm. “When our markets were falling, foreign firms were developing into true digital players. If demand continues to pick up, they will enter the market and push us out – because a lot of us are not improving productivity and simply don’t have capacity.”

Using scenarios



THE FOUR FUTURE SCENARIOS FOR THE CONSTRUCTION AND ENGINEERING INDUSTRY MAY OR MAY NOT COME TRUE, BUT REFLECTING ON HOW THE SAME FACTORS MAY DEVELOP IN DIFFERENT WAYS CAN HELP TO UNDERSTAND THE FUTURE AND THEREFORE HELP TO BETTER MANAGE CURRENT UNCERTAINTIES.

The scenario development process highlighted the trend for the current fragmented markets in the EU to continue to 2025, and beyond. EU plans are in place to create common standards, requirements and regulations across Member States opening and harmonising the markets in the long run. Sooner or later, however, foreign competition and technology companies will move in and existing businesses will find themselves being forced to compete at global levels.

The time is now, for both large and small companies, to prepare strategically for these future markets, to sustain or improve their competitive position. Sector associations at national and European levels are needed to support them through the challenging transition.

Sustainability will increasingly become a key differentiator for business, providing opportunities to develop competitive advantage.

Climate change has been promoted as an existential threat to humanity and the EU has responded with the European Green Deal and a goal to become climate-neutral by 2050. Cutting greenhouse gas emissions by 50% (compared to 1990 levels) by 2030 is key. This is especially pertinent for the construction industry which contributes, directly or indirectly, about 36% of all CO₂ emissions in the EU. It has a duty to make significant changes. But a sustainable future is also heavily reliant on allied concepts such as social taxonomy, biodiversity, or the circular economy which is currently receiving much debate across Europe. These are all inter-related facets affecting consulting engineers and it's important for them to be actively acknowledged and taken on board.

Digitalisation on the other hand, addresses the industry's long-stagnant productivity. In the long run, new digital

technologies are set to improve efficiency, and therefore profit margins. It's not just BIM or 3D printing making the difference, its innovations like e-procurement which is being increasingly used across Europe in the name of efficiency and transparency and the rise, for example, of artificial intelligence and blockchain.

Sustainability and digitalisation should be at the core of every corporate strategy but there are challenges in their implementation and critical decisions need to be made.

Small and medium-sized consulting engineering firms, as a group, face challenges in the long run. To compete successfully in different market sectors, and with different products and services, they will need to heavily invest in digital technologies and know-how. Because of their size they often lack the financial capabilities to do so and have to look more to developing a competitive advantage by focussing and heavily specialising in a niche market. This could be re-building and modernising residential properties, for example, or becoming the leading expert for modularised designs for off-site manufacturing or 3D printing. However, digital technologies are also rapidly enabling more and better collaboration and the future will fast become one of networks and ecosystems that small businesses cannot afford to ignore.

Software is automatising the planning process, constantly improving though also with continuingly growing costs that SMEs need to somehow address. Simple engineering processes may be all automated in as little as five years' time.

Small firms can review their capabilities and strengths, understand the competitive landscape, and determine what offerings will give them a competitive edge. They can identify any gaps in being able to achieve the offerings and develop strategies to close them, including creating partnerships and alliance with players in other industry segments, such as equipment manufacturers or off-site construction companies. The challenge for them is threefold: to specialise, to digitise and to work more closely with others in their efforts to build resilience for the future.

For **large corporations**, the challenges are different due to their scale and strong financial capabilities. They have more flexibility in defining their playing field: choosing to compete in multiple customer segments and across the construction value chain. They can even offer a highly integrated end-to-end solution while also competing in a specialised niche market. The decision should be based on internal capabilities and the respective competitive landscape. Benchmarking can help to identify best practices from elsewhere in the sector, but also capabilities and potential performance gaps. Large companies can develop strategies to close the gaps and position themselves against the benchmark competitively: perhaps by downstream diversification, getting closer to the customer with facilities management, extending the value stream; or stronger specialisation. They particularly need to determine if further benefits of scale are possible, and if so, through strategic alliances, or mergers and acquisitions.

Opportunities to scale up and consolidate markets through acquisition are especially high in a harmonised regulatory environment. However, the urgency to act quickly and boldly is also highest as foreign competitors face lowered entry barriers in such a market environment.

National and regional associations such as EFCA need to extend their role beyond being promoters of fair competition and aiming to influence EU legislation. As European players find themselves in more open markets, in the long run they will have to defend themselves against foreign competitors. Associations must help strengthen their competitiveness.

Possible new roles for associations

1

Enabling a favourable legislative environment: direct and indirect subsidies for investments in digitalisation and green technology, faster administrative procedures, education in bureaucracy, clear climate targets, guidance for sustainability requirements. Associations will need to balance their work between what is beneficial for SMEs and what is required by large corporations.

2

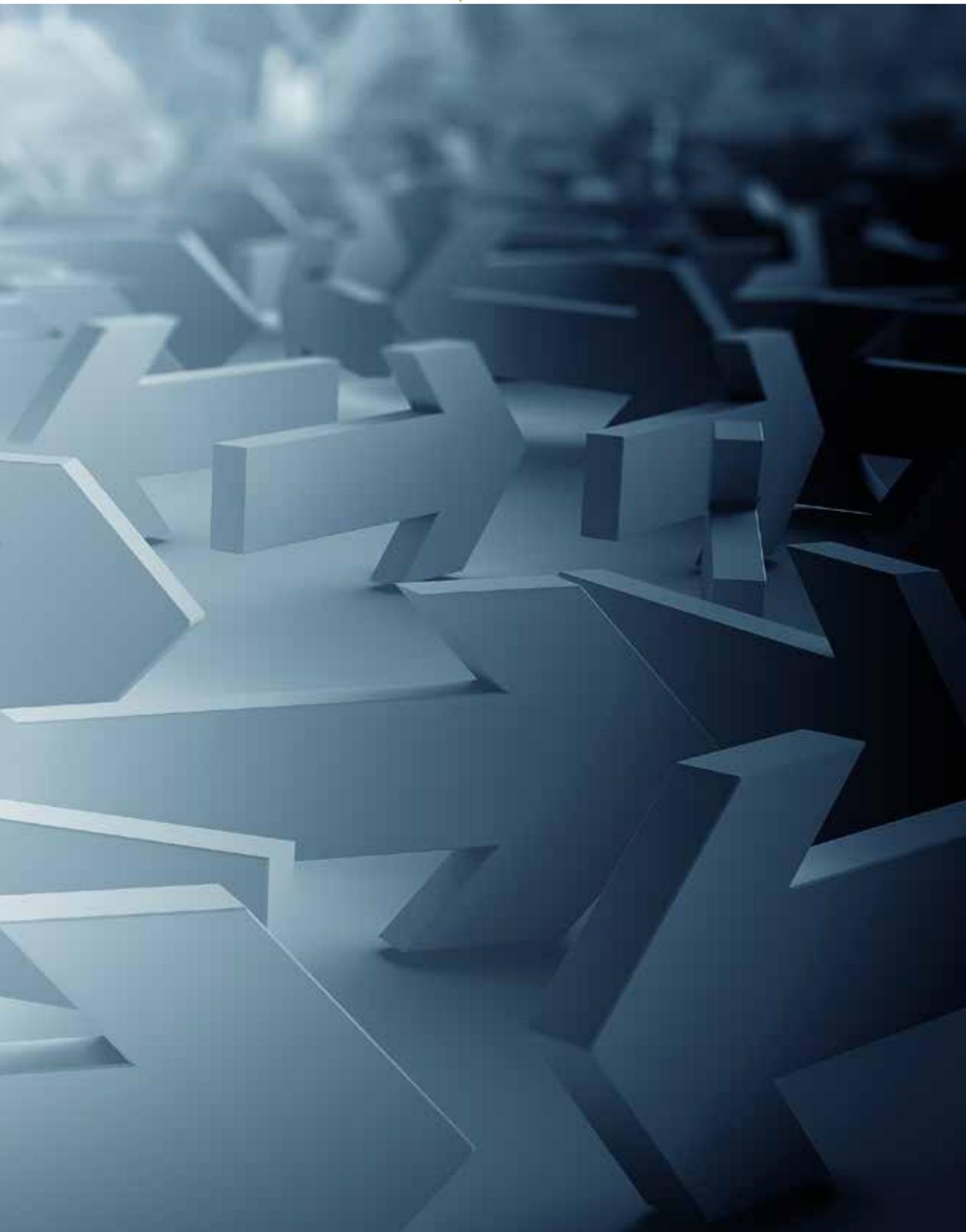
Publishing competitiveness reports: benchmarking European players against their competitors in terms of productivity, degree of digitalisation, and profitability; and identifying potential performance gaps and best practices.

3

Promoting technological trends and market developments: using their broad networks across the whole value chain, associations can identify developments in technological innovation or emerging business models, for example. Sharing such market intelligence, as short reports and studies, will enable consulting engineers to remain well-informed. Providing a platform for sharing best practice will help them learn from their peers and support implementing new technologies.



EFCA has member associations in 29 countries, and is the sole European federation lobbying on behalf of engineering consultancy and related services, a sector that employs around one million staff in Europe. EFCA contributes with a strong and cohesive input to legislative actions of its national associations on issues affecting market conditions. Furthermore, the organisation works as a Europe-wide platform for national associations and their member firms to gather relevant facts and discuss issues with their counterparts.



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