

— BENCHMARK REPORT

How We Build Now

Tracking technology in the **Middle East and North African** construction sector in 2023



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The current state of Middle Eastern construction: How we build now

Technology's transformative impact on construction.

Following years of impressive growth, the outlook for construction across the Middle East and North Africa (MENA) looks healthy. Despite fluctuating oil prices and inflationary pressures, MENA countries are coping well and some, such as Saudi Arabia and Qatar, have been registering high growth rates. Throughout the region, there remain many opportunities on which construction business leaders are keen to capitalise. So much so that overall confidence is high, as our survey clearly shows, and there are positive signs everywhere.

Much of that confidence among construction firms in the MENA is inspired by strong and visionary governments that have great ambitions for the future of the region – and are prepared to back them. Saudi Vision 2030¹, which was launched in 2015, sets out a bold and expansionary masterplan for Saudi Arabia which will steer a plethora of projects to fruition over the next decade and beyond. The 2030 programme embraces a wide range of infrastructure developments, many of which are aimed at transforming the country into a global tourist destination and will help make it one of the world's most visited countries.

Similarly, plans are being carried out in the United Arab Emirates (UAE). The Government has invested billions of dollars on mega infrastructure and commercial construction projects over the past two decades, as it too, seeks to reduce its reliance on oil by becoming a major business and tourist destination.

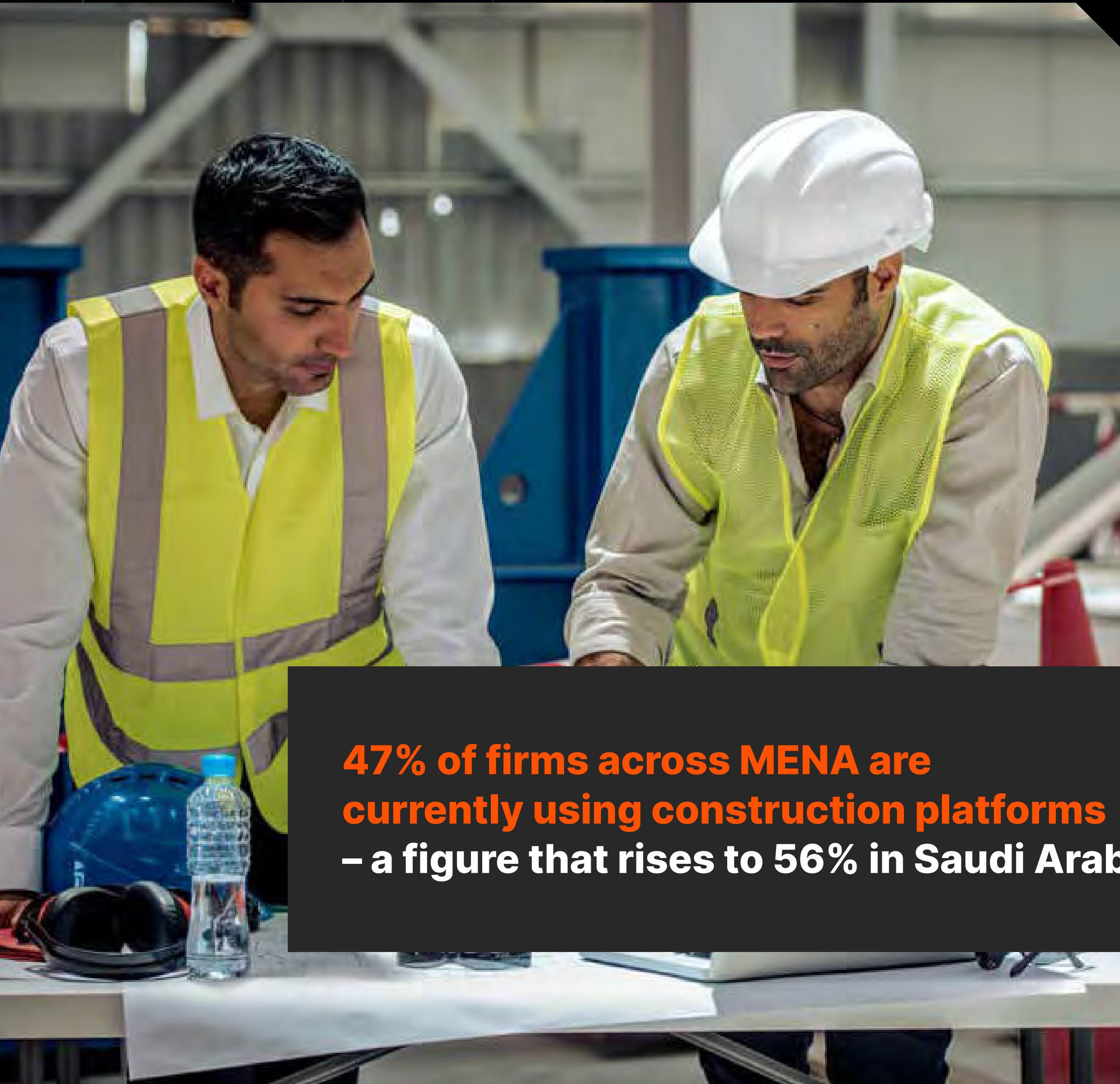
Additionally, both territories are committed to developing their information technology infrastructures, which will greatly facilitate business in the region.

So, there is not a question over whether there is construction work—but instead, a question over how companies can turn a profit from it and deliver it on time and on budget. The pressures their leaders face right now are not coming from the top line but the bottom line, namely how to become more efficient, productive and profitable.

The good news is there are processes that can be put in place to help to boost that bottom line, and the solution rests in the construction industry's hands. For this is an environment where technology is playing an increasingly important role — and the scene is set to drive the industry forward, as long as construction employs that technology in the most effective ways.



¹ <https://www.vision2030.gov.sa/>



47% of firms across MENA are currently using construction platforms – a figure that rises to 56% in Saudi Arabia

There are now very positive indications that the industry is aware of technology's power to transform construction practices. For example, around one in four business leaders (26%) say economic/industry volatility, caused by inflation and supply chain challenges, has caused them to significantly increase their investment in digital transformation over the past six months. Construction platforms, with their ability to pull together data from numerous operational streams and share it widely, are proving invaluable in giving business leaders greater visibility and control - essential qualities for management in MENA's dynamic and ever-changing business environment.

So much so that nearly half (46%) of decision makers said they are already well on their way towards digital transformation, and 11% already consider themselves a digital first business, though these figures do vary across the countries. Additionally, 47% of firms across MENA are currently using construction platforms – a figure that rises to 56% in Saudi Arabia – and just over a third (34%) of firms plan on introducing them into their businesses in the next 12 months. Some of these platforms may be siloed channels such as WhatsApp, rather than truly integrated pan-business platforms which pull data together into one source of truth, but it is a clear indication of construction businesses accelerating towards a fully digital future.



46%

are well on the way with their digital transformation journey

So, there are numerous positive signs, both for now and for the future. Digitalisation offers the power to capture, standardise and utilise data more effectively and allows firms to improve collaboration with their stakeholders and supply chain partners. In turn, this will help reduce the high rate of rework that still hampers construction everywhere – thus delivering buildings more cost-effectively.

Business leaders recognise this: over a quarter (27%) of decision makers said they could save up to 25% of a project's time if rework was eliminated by better data utilisation. And almost a third (32%) said their business could potentially save up to 29% of project spend if data was more efficiently captured, integrated and standardised.

As our survey clearly reveals, technology is now firmly embedded as a crucial part of successful construction, and business leaders are increasingly committed to tapping into its fullest potential.

So join us as we dive into **how we build now** — and see how we can build even better in the future.



Mohamed Swidan

Senior Director, Head of Middle East & North Africa (MENA)





— KEY HIGHLIGHTS

45%

of MENA construction firms say they are **very confident** in the construction industry market conditions over the next 12 months.

20%

of UAE business leaders in the sector describe themselves as having a **digital-first business**—double the percentage in Germany and France.

34%

of construction firms are **planning to introduce construction management platforms** in the next 12 months.

80%

of decision makers surveyed said the current economic/industry volatility (e.g. inflation, supply chain challenges) has **increased² the level of investment in digital transformation** within their business over the past three to six months.

61%

of firms in MENA prefer an **integrated solution**, rising to 68% in Saudi Arabia—around 10% above the global average.

Construction firms say that business productivity would be most improved by: Implementing **best practice process** and protocol in pre-construction.

² 'Significant increase' and 'Slight increase' answers combined.

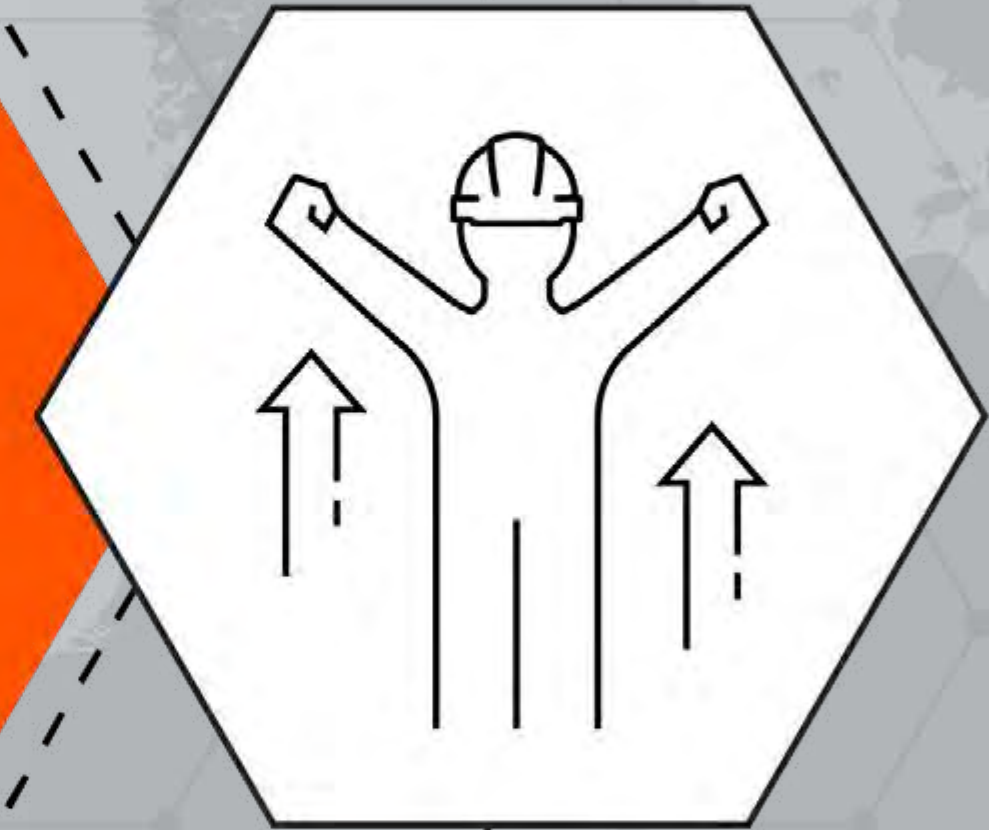


Contents

01	How confident is MENA construction?	7	→
02	Boosting productivity and profitability in a challenging economy	12	→
03	The growing appetite for technology	15	→
04	The benefits of data	22	→
05	Recruiting the skills for successful construction	26	→
06	Focused on the future	29	→
07	Wrap-up	34	→

— CHAPTER ONE

How confident is MENA construction?



Positive signs, despite global economic challenges

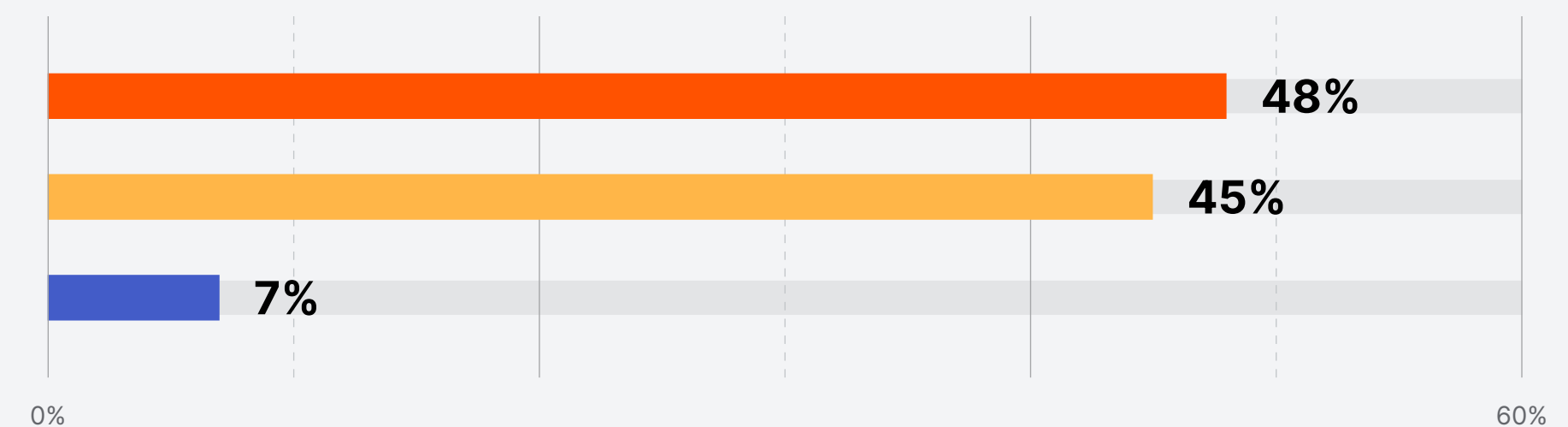
MENA economies may fluctuate this year but there should still be plenty of work for construction companies thanks to ambitious development plans across the region. The bigger issue is making sure projects are of the highest quality and profitable.

Nearly half of construction's business leaders in economies around the MENA region (45%) say they are very confident about conditions in the sector over the next 12 months.

Confidence levels are highest among owner/developers and subcontractors, with an average of 52% across both groups saying they are very confident, against 30% of main contractors.

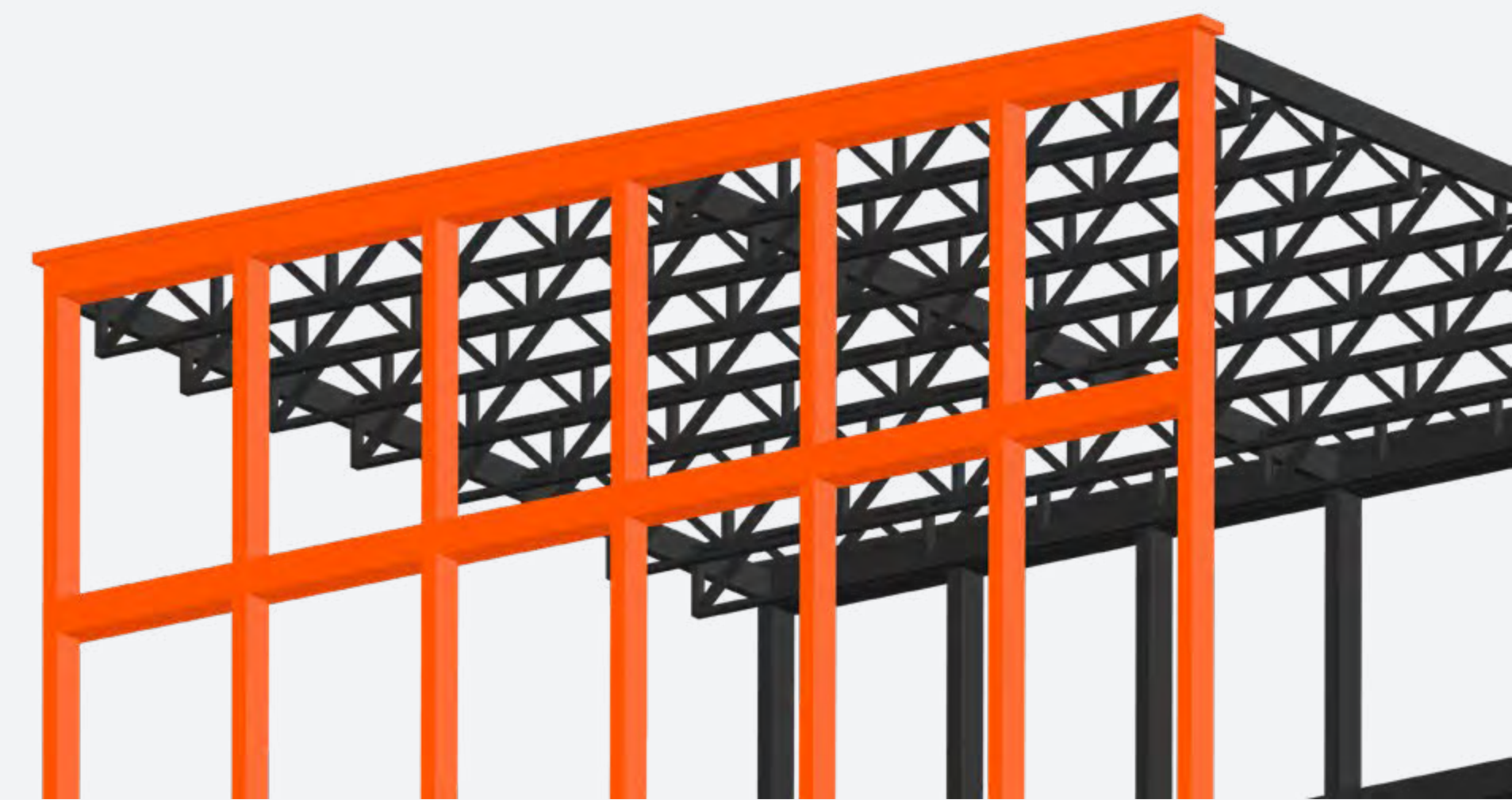
Nearly six in ten (59%) of the other main contractors are relatively positive about future prospects, saying they are somewhat confident, and 46% of the other owners/developers and 38% of subcontractors feel the same.

How confident are you about building and construction industry market conditions over the next 12 months?



Very confident Somewhat confident Not particularly confident

0% of the respondents are 'not confident at all'.



These confidence levels are underpinned by healthy order books as well as expectations of a strong pipeline of future work. Just over half (51%) of businesses expect the number of projects to increase by up to 20% over the next 12 months. Just over one in three (36%) are even more confident: they expect project numbers to grow by at least 20% and potentially more.

Much of this work will be related to the developmental plans of both Saudi Arabia and the UAE governments, which have bold multi-billion dollar visions for the future of the region.

At the start of the year, for example, Saudi Arabia launched the New Murabba Development Company which aims to develop the world's largest modern downtown in Riyadh, contributing to the city's future development in line with Saudi Vision 2030.

Also emerging from Saudi Arabia's Vision 2030 masterplan is NEOM, a magnificent new smart city located on the Red Sea coast, which contains many individual mega-projects such as The Line, a linear city 170-km long, and Oxagon, a floating industrial complex.





Equally exciting, Riyadh is to host the 2028 World Sport for All Games, the first global games for all in the MENA region and the world's biggest social sports event, which will require a range of major infrastructure projects.

The UAE, as part of its 10-year future development plan, has announced an investment of US\$1.36 billion³ to reduce congestion in the country. Through the 10-year plan, the government aims to become a global leader in developing world-class road and transport systems. This will all lead to further investment in the sector, supporting the growth of the infrastructure construction market.

Enormous innovation in terms of construction and logistics are required to deliver these futuristic developments. Advanced technology systems will be crucial to ensuring they are delivered on time and in budget and with the minimum amount of rework required.

Clearly, the scale of construction markets in both countries is already impressive: the UAE's construction sector is worth US\$86.7 billion⁴, and Saudi's US\$133 billion⁵. Future growth should catapult both countries' construction sectors to record output levels over the next decade and beyond.

So the outlook is positive, but naturally, there are challenges to confront.

³ <https://www.arabianbusiness.com/industries/construction/uae-announces-10-year-road-plan-valued-at-1-36-billion>

⁴ <https://www.globaldata.com/store/report/uae-construction-market-analysis-2/>

⁵ <https://www.globaldata.com/store/report/saudi-arabia-construction-market-analysis/>

Business priorities clash with persistent problems

Despite the potentially healthy prospects facing them, construction leaders must navigate their way through a slew of formidable growth-obstacles over the next 12 months.

There is also the ongoing problem of rework, which has challenged the construction sector for years. One in four (25%) business leaders estimate that one quarter of project time (25%) is spent rectifying building issues.

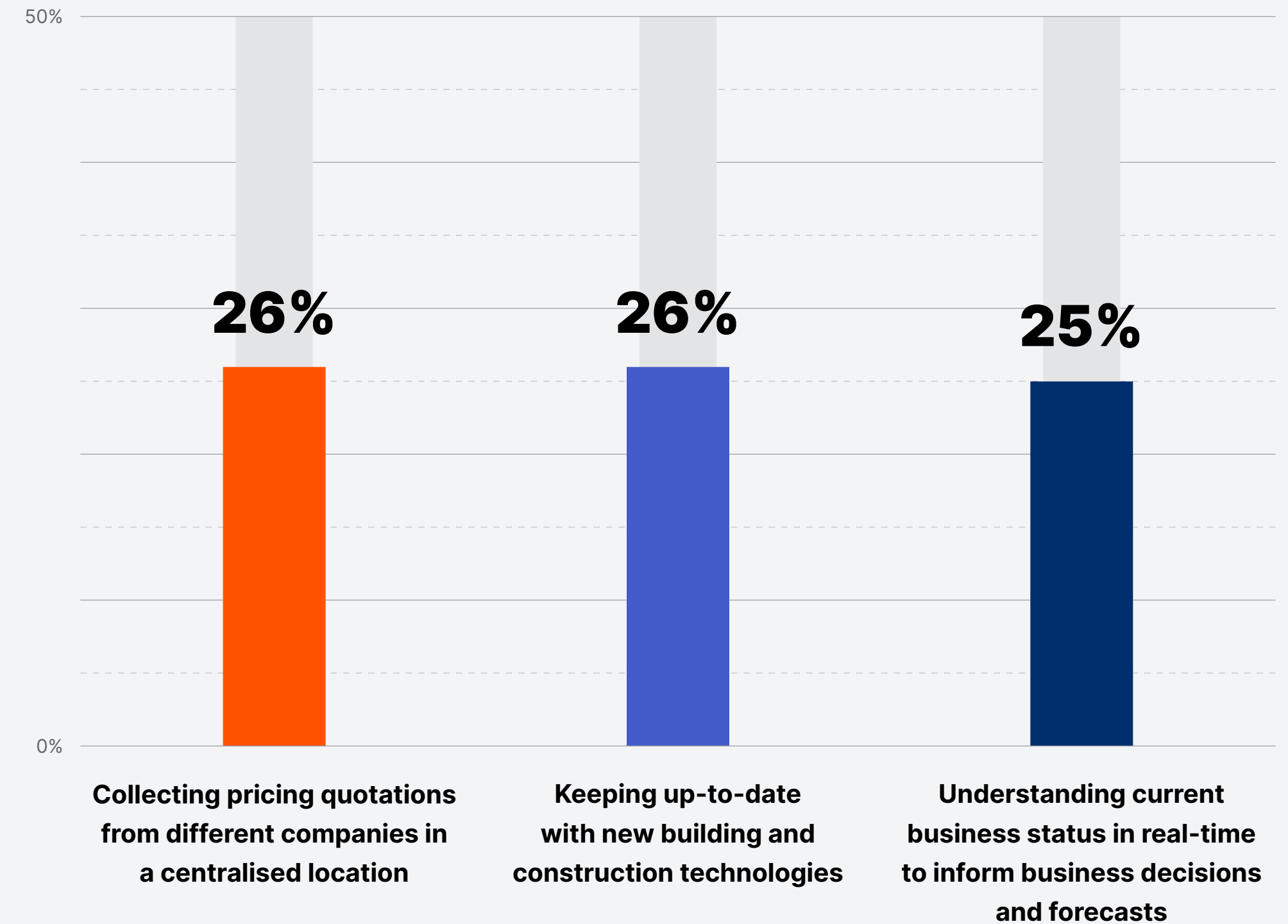
In a region of many mega million-dollar projects, the bottom line repercussions of extensive rework are considerable. Delivering ambitious and expensive projects within budget — challenging enough in the first place — becomes that much harder.

These obstacles must therefore be addressed if firms and individuals are to meet their priorities for the coming year.



What, if any, do you consider to be the greatest challenges facing your business over the next 12 months?

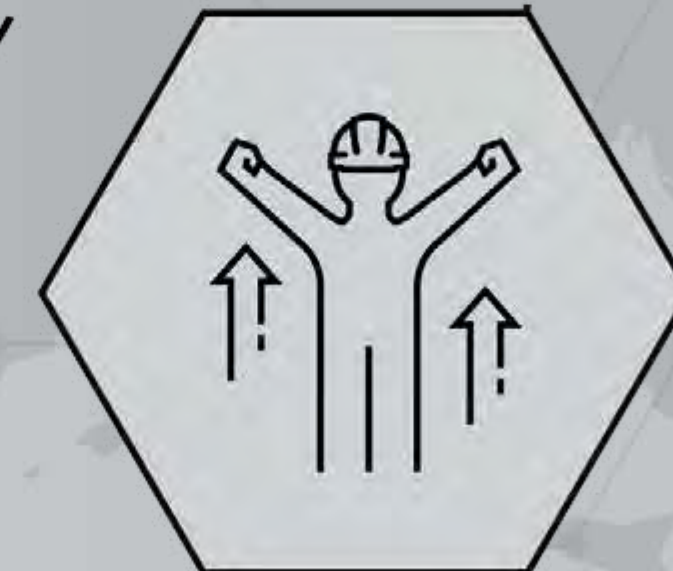
(Only top three of 14 total options shown)



— CHAPTER TWO

Boosting productivity and profitability in a challenging economy

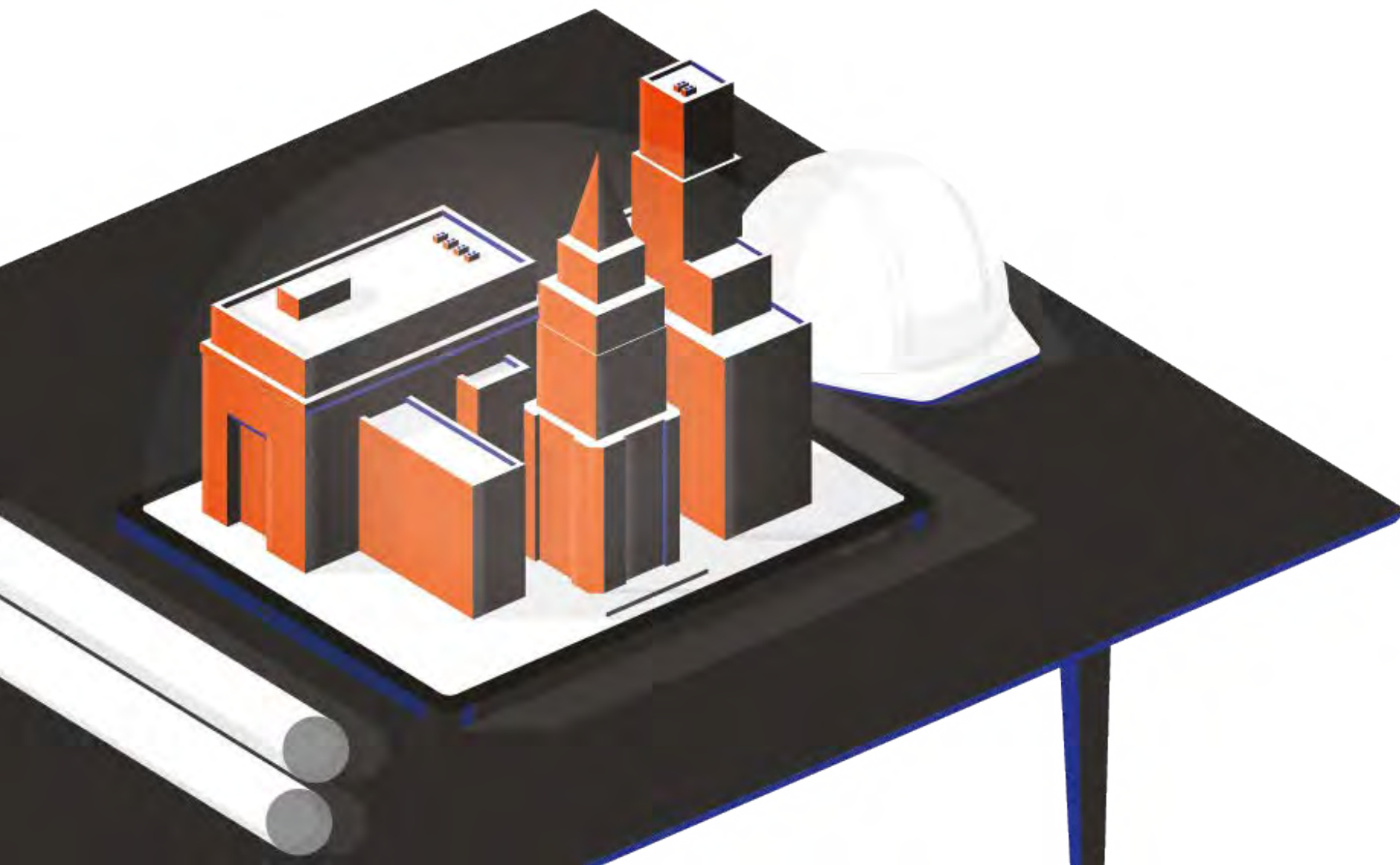
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Productivity and profitability under threat

Market difficulties mean sharing project data with stakeholders and supply chain is key to improving efficiencies onsite and productivity.

Labour shortages, raw materials costs, extreme weather events and geopolitical instability are all hurting bottom lines. In the face of these challenges, how can leaders find new ways to boost productivity and profitability?



MENA construction's path to productivity

For MENA businesses, the most popular⁶ way of improving productivity was **'implementing best practice process and protocol in pre-construction'**.

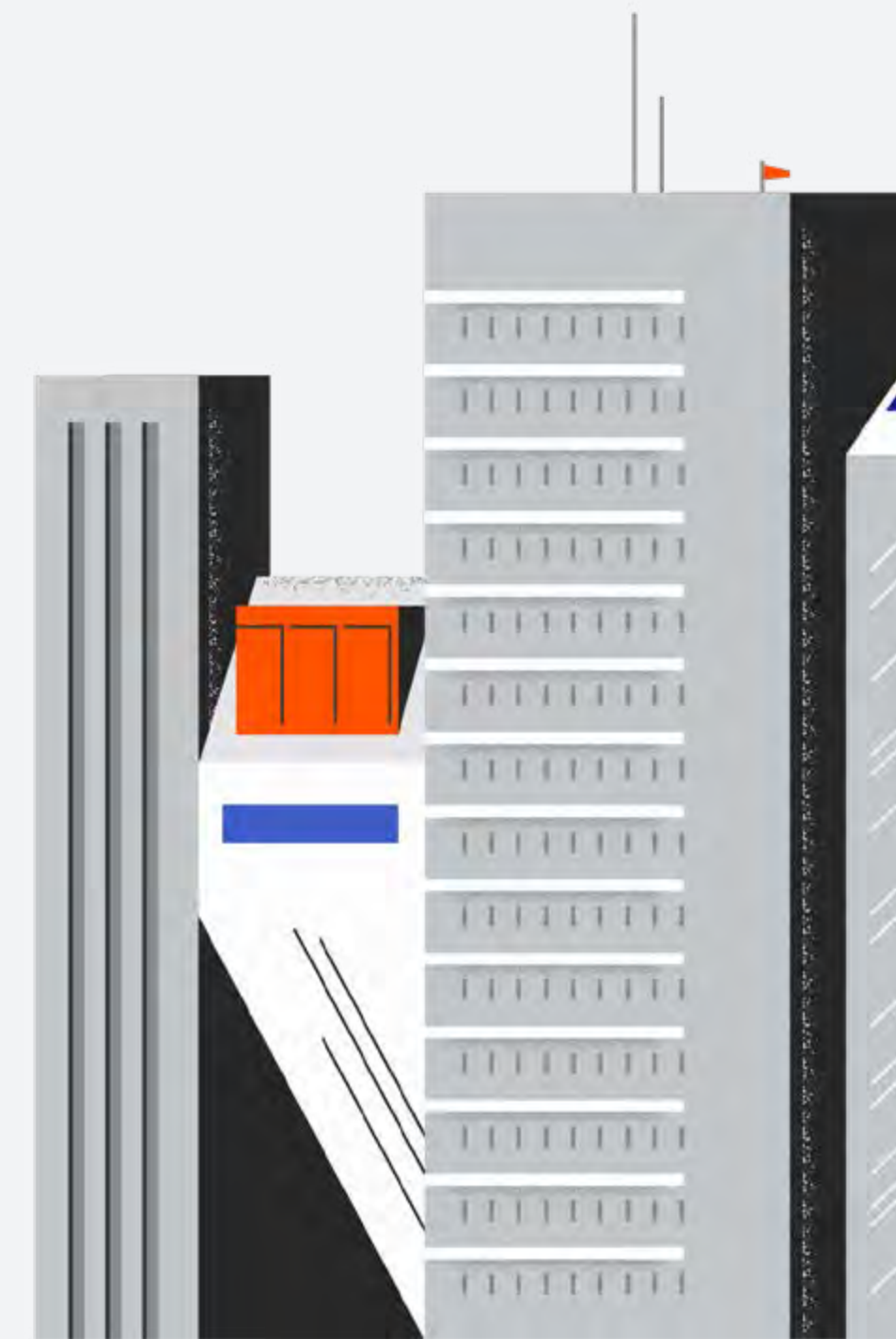
UAE respondents believed productivity could best⁷ be boosted by **'bringing new technology on board'** and **'Automating project workflows to minimise manual tracking of progress'**.

Saudi Arabia's respondents identified **'improving collaboration and communication with stakeholders in our own business and across the supply chain'** as the best way⁸ to boost productivity.

The most popular⁹ overall choices for boosting productivity were:

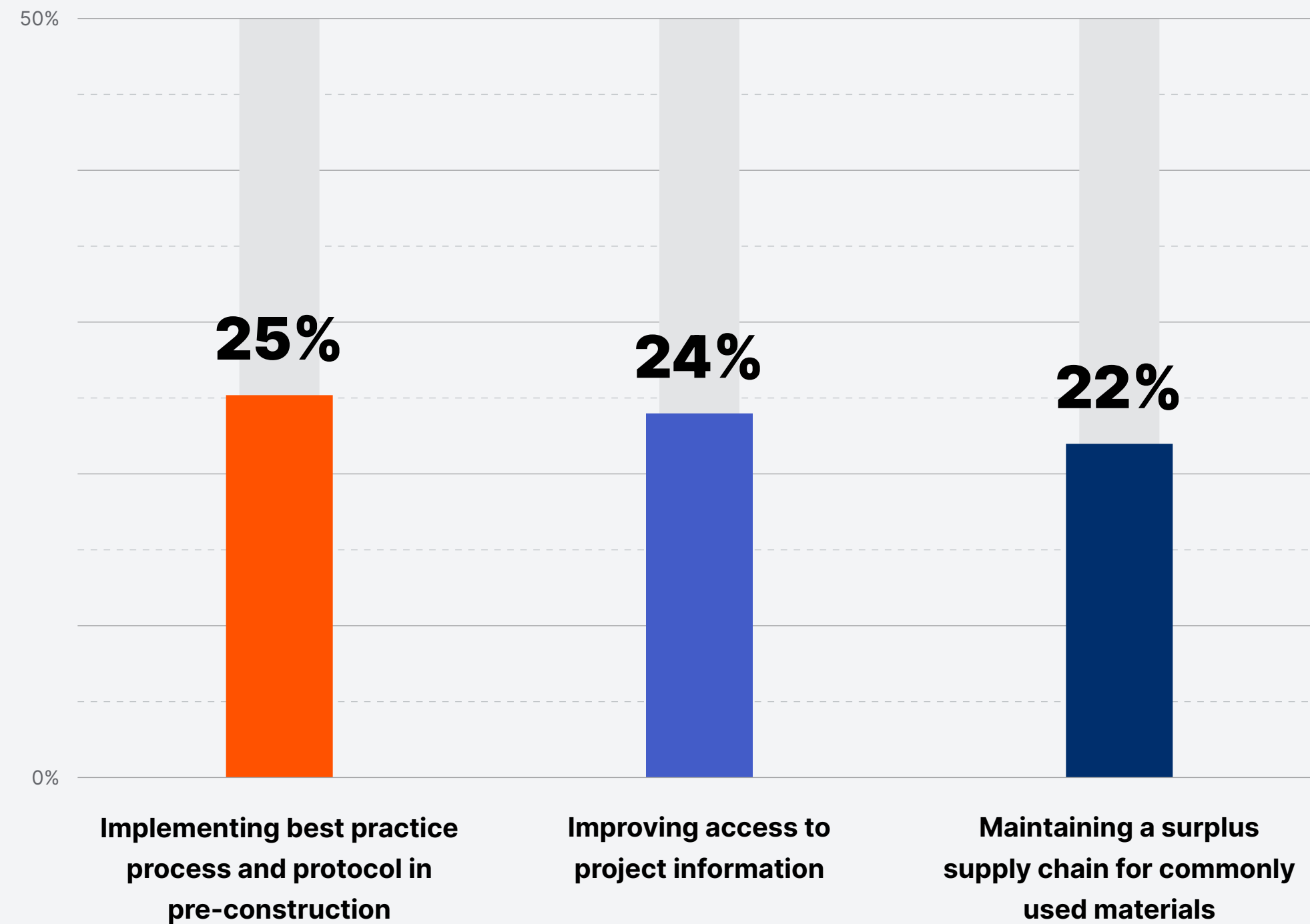
- + Implementing best practice process and protocol in pre-construction
- + Improving collaboration and communication with stakeholders in our own business and across the supply chain
- + Building employee engagement

^{6, 7, 8, 9} Based on the highest percentage of respondents to choose this answer as one of their top three choices



Which of the following would improve profitability within your business?

(Only top three of 16 total options shown)



MENA construction's path to profitability

The most popular overall choices for improving profitability were:

- + Implementing best practice process and protocol in pre-construction
- + Improving access to project information
- + Maintaining a surplus supply chain for commonly used materials

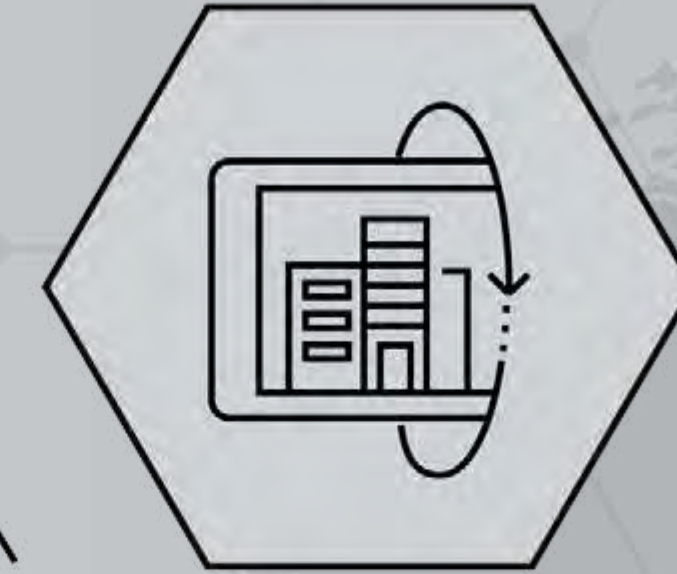
It's clear that MENA construction companies are looking to make better use of data from across the business in order to share actionable insights that can boost productivity and profitability.



— CHAPTER THREE

The growing appetite for technology

03



Regional incentives and the macroeconomic environment have been catalysts for digital transformation

Many factors are compelling construction leaders to invest in new technologies that are now transforming the way business is done across the region.

The pipeline of mega projects across the MENA region has encouraged construction companies to mirror these ambitions with their own large-scale regional initiatives. And as they gear up for new opportunities, businesses have been significantly increasing their investment in technology.



Global macroeconomic uncertainties have probably also encouraged construction leaders to use technology to become more efficient and agile. The impact of COVID has similarly accelerated industry investment in digital transformation:



26%

of construction business leaders say economic/industry volatility (for example, inflation, supply chain challenges) has caused them to **significantly** increase their investment in digital transformation in the past three to six months.



43%

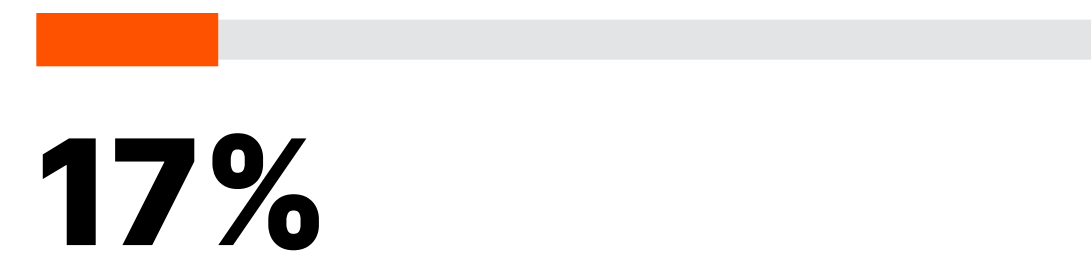
of decision makers said they are taking their first steps on the journey towards **digital transformation**.



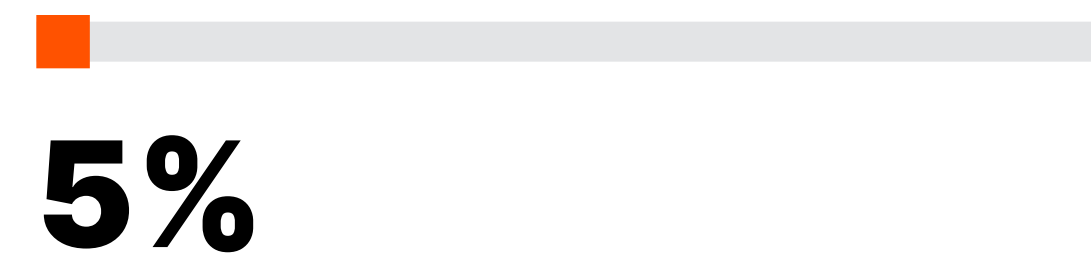
11%

now consider themselves a **digital first** business.

The number of construction companies that have reached **digital-first** status varies considerably from country to country, with one in five (20%) describing themselves as such in the UAE, where the Dubai government already operates paperlessly, and only one in fifty (2%) in Saudi Arabia. However, Saudi businesses say they are looking to accelerate their path towards full digital transformation.



of MENA owner/developers say they are digital-first businesses.



of MENA main contractors say they are digital-first businesses.

Business leaders recognise that technology's impact on their sector can be transformative. Among the major benefits of digitalisation, building leaders envisage the following outcomes:

- + Builders will need a broader skill set
- + Builders will spend more time with clients (e.g. consulting on design)
- + Builders would like to have the ability to handle more projects



The new horizon for construction technologies: high-impact over high-tech

The goal of digital transformation is clearly fixed in the sights of construction business leaders. But what must technology do to help them get there?

In MENA, there is a strong appetite for next-generation technologies like robotics, 3D printing and technology to better utilise data and transform day-to-day operations.

Technologies that businesses in the region are planning to introduce in the next 12 months include:

- + Extended reality: 56% intend to introduce (vs. 30% currently using)
- + Next generation BIM: 50% intend to introduce (vs. 36% currently using)
- + Robotics: 48% intend to introduce (vs. 38% currently using)
- + Drones: 46% intend to introduce (vs. 40% currently using)
- + 3D printing: 45% intend to introduce (vs. 37% currently using)
- + BIM platforms/data analytics: 42% intend to introduce (vs. 39% currently using)



Drone usage has grown significantly in MENA, to the extent that it has become 'business as usual' for four in ten (40%) construction firms.

3D printing is another technology being widely adopted by construction firms, with nearly four in ten (37%) currently using it and nearly half (45%) planning to make use of it in the next 12 months. The UAE government itself hopes to use 3D printing for 25% of its structures by 2030.

The potential benefits of 3D printing are prodigious. When it is fully taken up in the coming years, experts believe 3D printing could reduce construction costs by as much as 50-70% and labour costs by 50-80%, while reducing waste by up to 60%.

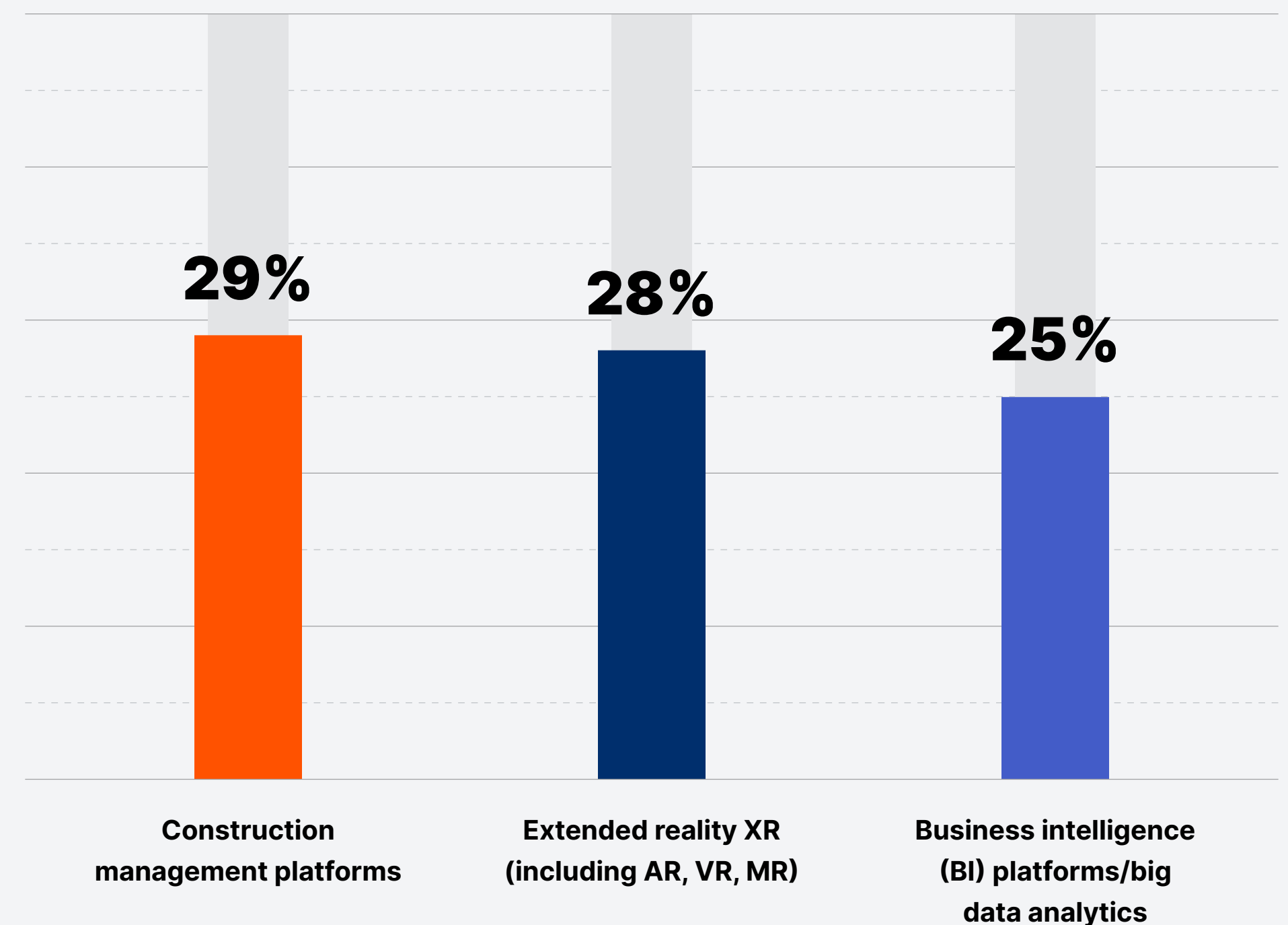
More immediately, BIM (building information management) platforms and data analytics are becoming increasingly popular business tools.

Business leaders say the most popular¹⁰ technologies to drive positive change and digital transformation in the construction sector are:

- + Construction management platforms, covering pre-construction, project execution, financials, and workforce management
- + Extended reality, including augmented reality (AR), virtual reality (VR) and mixed reality (MR)
- + Business intelligence (BI) platforms/big data analytics

These findings tally with 61% of MENA companies saying they prefer an integrated solution (over a point solution). In Saudi, the figure rises to 68%.

What do you think are the key technologies that will drive change in the construction industry in the next three years?



¹⁰ Based on the highest percentage of respondents to choose this answer as one of their top three choices



Barriers to digital transformation remain

Although good progress has been made by many businesses towards digital transformation, there is still some way to go before all construction businesses in the region enjoy the benefits of full digitalisation that is fully integrated, one-source-of-truth construction platforms offer. As noted above, over four in ten (43%) are only now starting out on the journey. For regional comparison, 40% of firms in UAE are just starting out; in Saudi the figure is 47%.

The greatest¹¹ challenge business leaders need to overcome on their digital transformation journey is **'overcoming concerns around data security'**.

The other main challenges were seen as:



Lack of support from technology providers/vendors



Securing budget to invest in new technology



Changing established practices and behaviours

¹¹ Based on the highest percentage of respondents to choose this answer as one of their top three choices

The industry now recognises the benefits of technology as an alternative to paper-based processes—but there is work to be done

Compounding these obstacles, there is still a heavy reliance among construction businesses on paper-based and analogue processes.

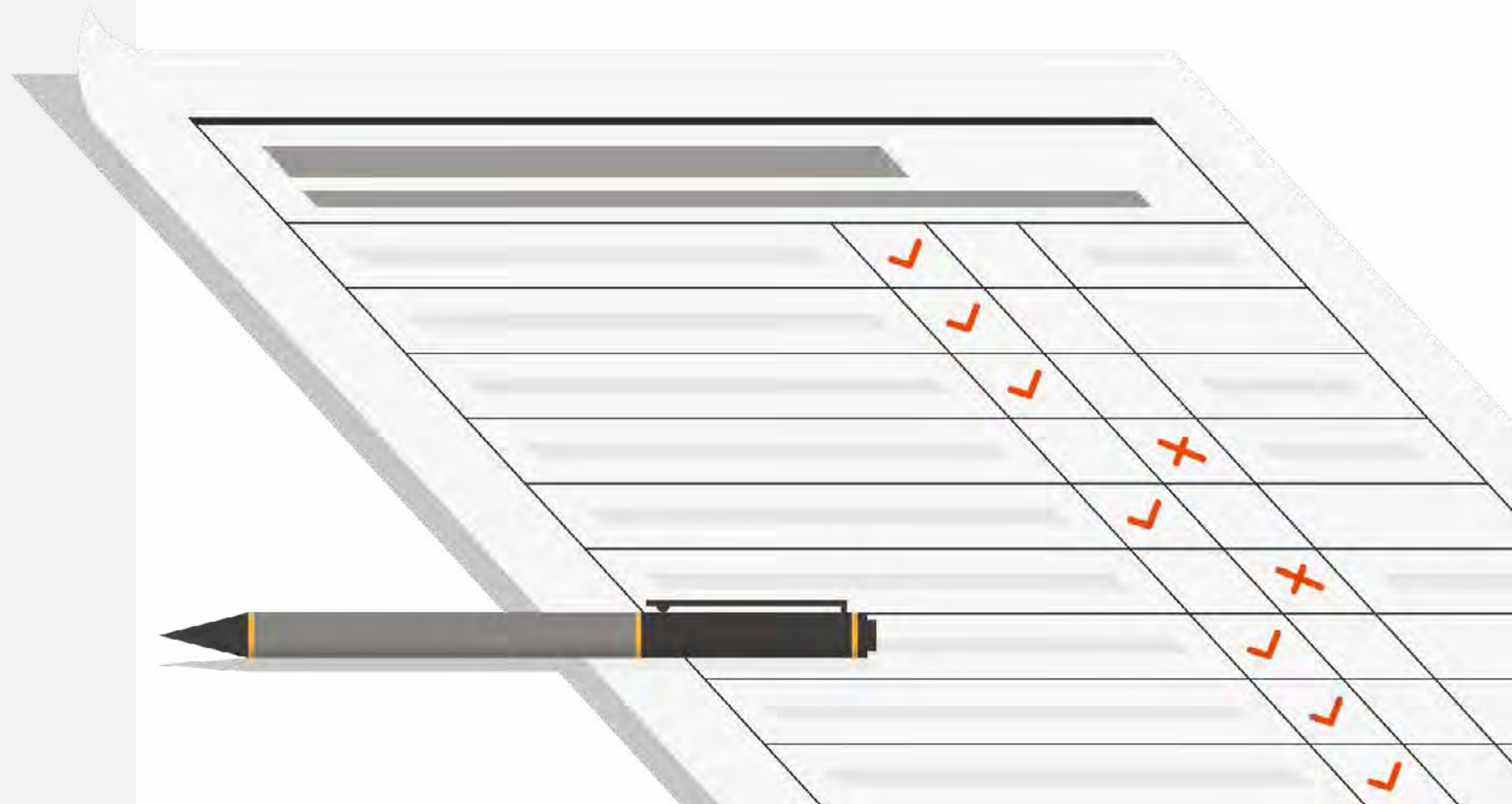
This scattered way of working, using a siloed approach to data rather than one-source-of-truth construction platforms, is in many ways a reflection of the construction industry being historically under-served with construction-specific technology. But for the region's construction firms to still be largely paper-based and reliant on outdated manual processes makes them vulnerable to data theft. Similarly, the widespread use of messaging platforms in the Middle East raises concerns around privacy issues and data security.

Moving to cloud software would enhance data security considerably.



46%

Nearly half (46%) of businesses run processes such as estimating and pricing, quality, design management, safety, cost controls, and much more, on paper and on messaging platforms such as WhatsApp.



The benefits of data



Data continues to drive change

By helping capture and standardise data from across the business, digitalisation can grant business leaders better visibility, help them make better decisions and support sustainability goals.

Many firms are implementing construction technology not only to improve their level of data security and better control who has access to confidential documents and information – but also to standardise the capture and integration of data from across their operations. This is down to how the resulting information can be used by business leaders to facilitate better decision making. Not just with quality real-time data, but also the all-important visibility of that data, and access to it – with visibility of performance, in particular, a huge boost for firms to **deliver projects on time and on budget.**

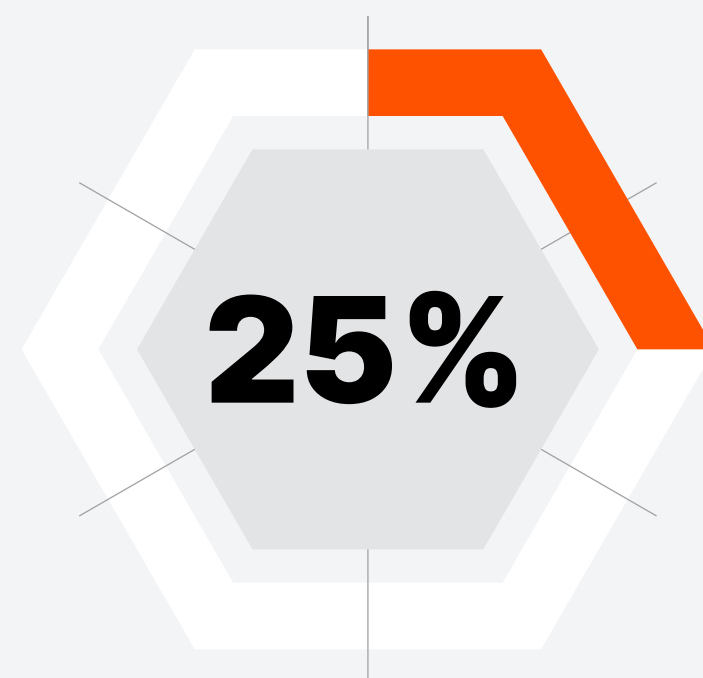
Data empowers firms to monitor progress and report in real-time, as well as have oversight of project time risks. As a result, project costs could fall dramatically.



Moreover, from this data, firms can invest in more aligned practices and streamlined processes to cut down on the 25% of the time they are currently spending on rework and rectifying issues. While, in parallel, they can meet their own ambitious sustainability goals, using data to better track emissions and waste.

This is reflected in what construction leaders saw as the particular benefits of capturing, standardising and integrating data in their firms:

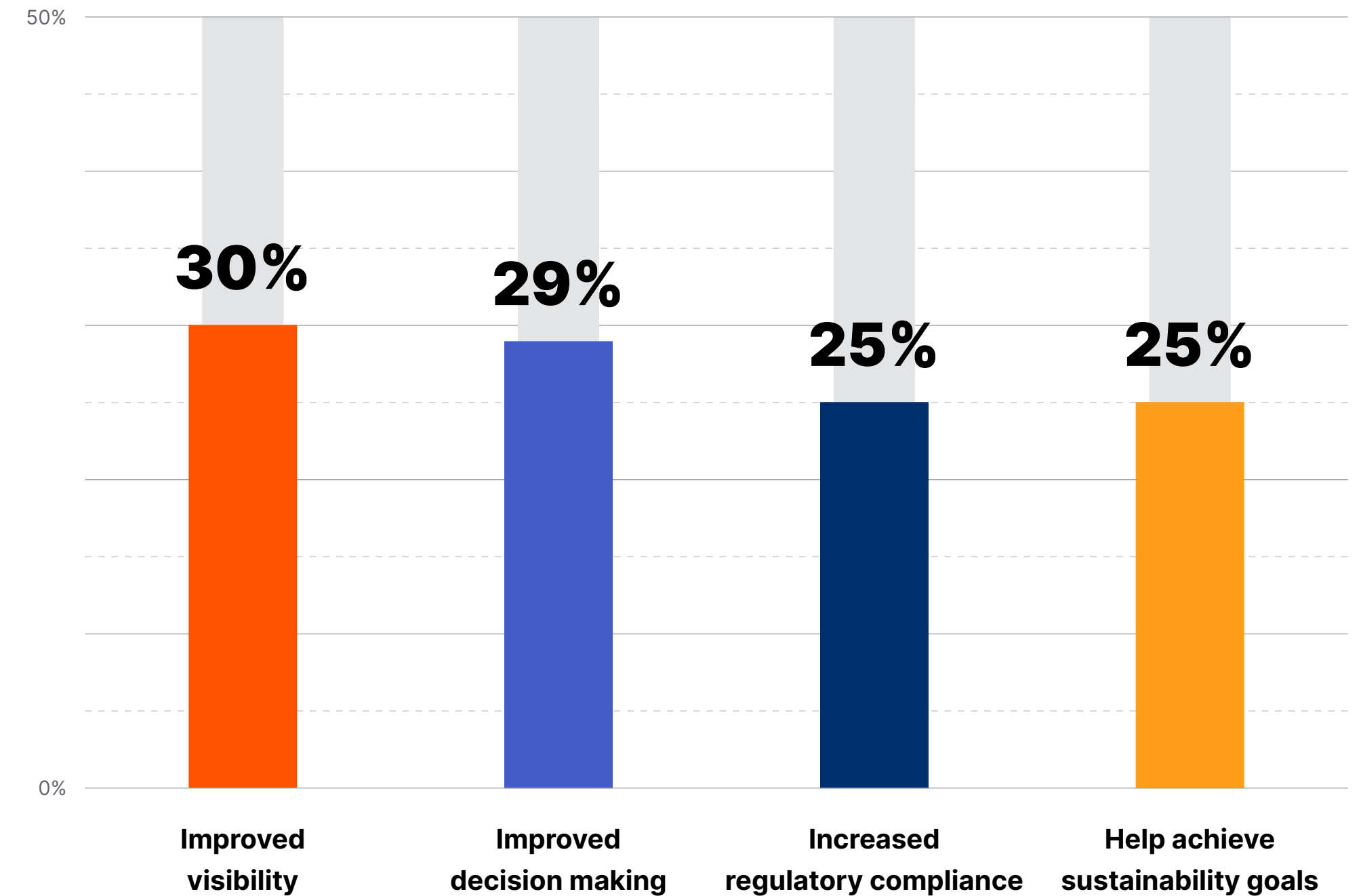
- + Improved visibility
- + Improved decision making
- + Increased regulatory compliance
- + Help achieve sustainability goals



Reduction of the time firms are spending on rework and rectifying issues, by investment in more aligned practices and streamlined processes.

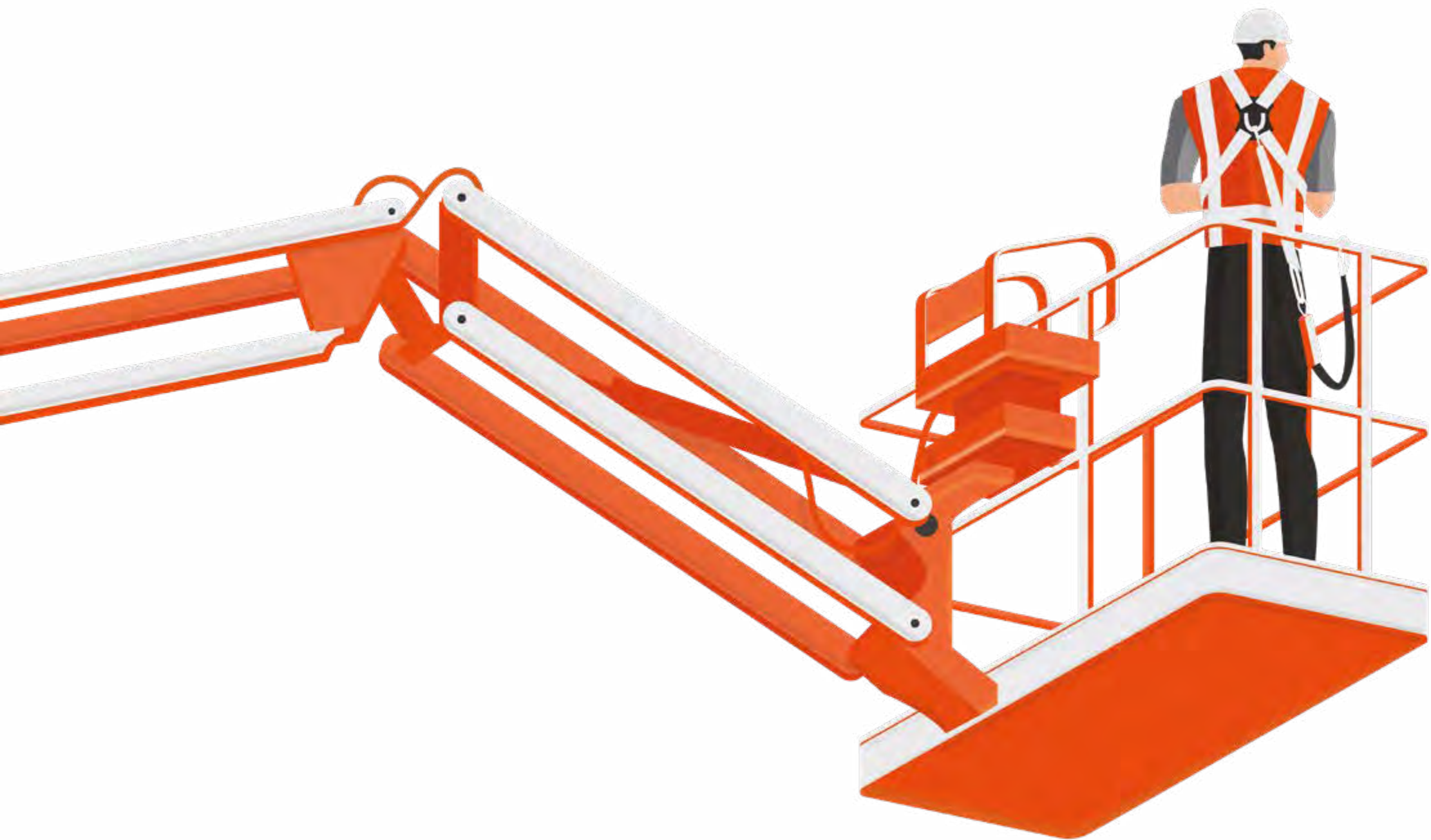
Many construction firms are investing in capturing, integrating, and standardising data from different parts of their business. Thinking about your business, which of the following benefits do you think implementing this approach would deliver?

(Only top four of 14 total options shown)



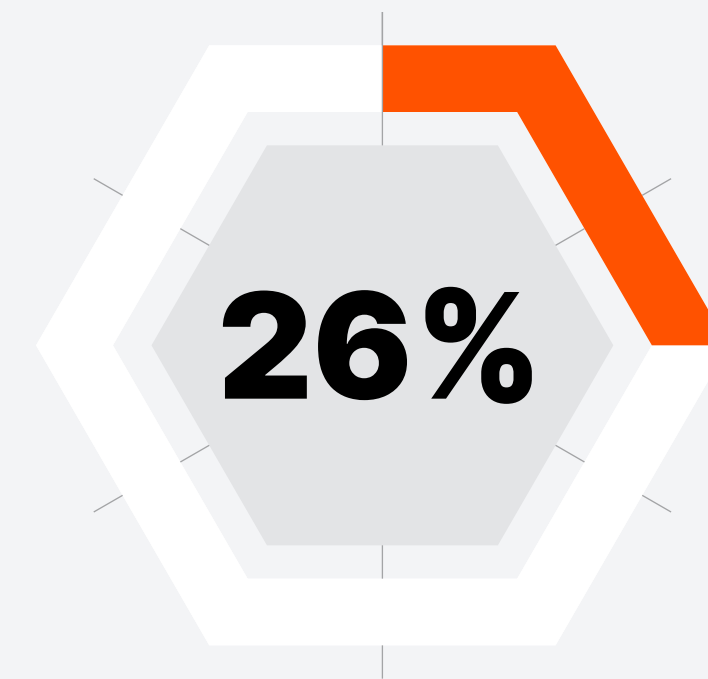
The breadth of these results says a great deal about the positive impact that visibility of performance can have, and the calibre of real-time status updates and insight needed for successful construction.

Yet it is not just real-time data that drives this, but project-wide data as well. According to respondents, the single biggest way of improving productivity was **'implementing best practice process and protocol in pre-construction'**. Essentially, this entails robust upfront planning for the pre-construction process, aligning all project stakeholders early on and on one unified platform, and leveraging one source of truth to ensure alignment through to project close.



Data is critical to this, and can prevent instances of rework or waste in the construction process by ensuring mistakes don't happen. Something that undoubtedly influenced the almost two in five (37%) business leaders who felt this level of access to real time and historic information on project performance would allow them to make better decisions, internally and throughout the supply chain.

Significantly, the improvements mentioned drop through quickly to the bottom line, with business leaders believing they could cut project costs by an average of 26% if data could be more efficiently captured and integrated.

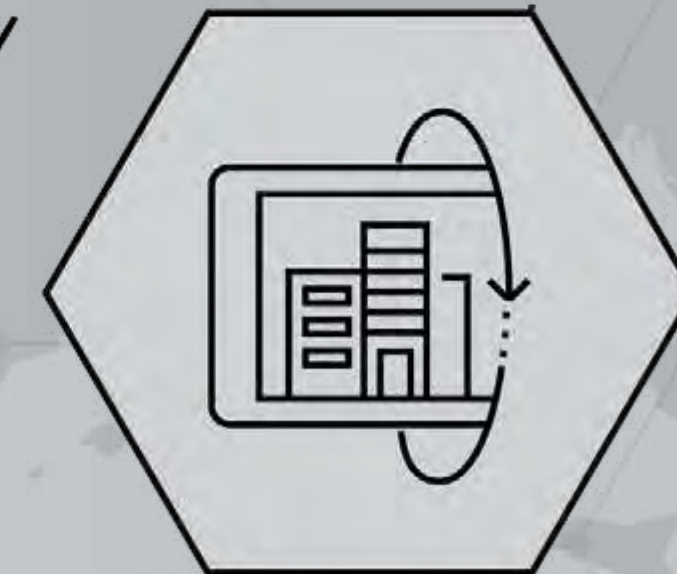


of respondents can achieve reduced project costs if data could be more efficiently captured and integrated according to business leaders.

— CHAPTER FIVE

Recruiting the skills for successful construction

05



When it comes to confidence in the skill sets of construction's workforce, there are mixed signs

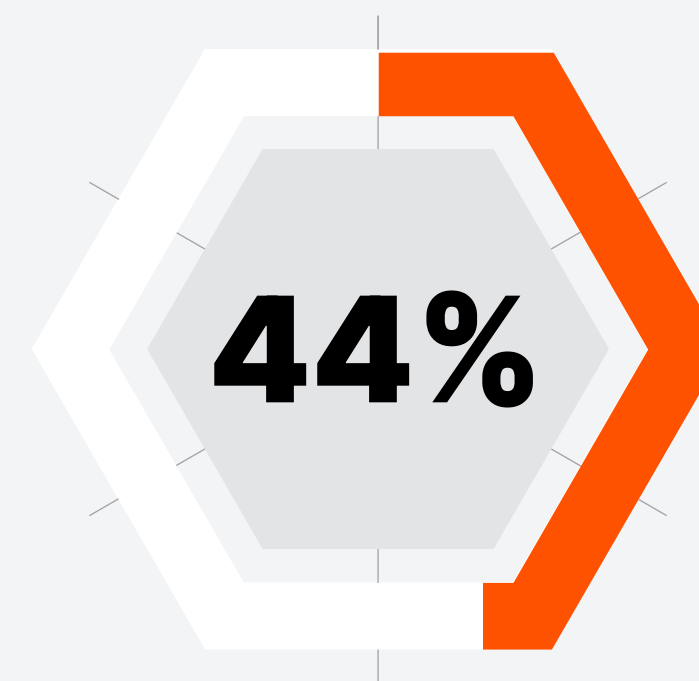
Competition for staff within construction is high and there is a lack of skilled candidates across most specialisms. A mix of soft and hard skills are in demand.

In every sector across the Middle East, business leaders report shortages of people with specialist and non-specialist skills. The strain this is causing is shared by MENA's construction industry.

Competition for staff within construction is high, say business leaders, and there is a lack of skilled candidates across most specialisms.

Skills most in demand are budget control / commercial management, tech savviness, project management and relationship building.

As technology changes the construction game, soft skills are seen as critical in the next steps for driving the industry forward.



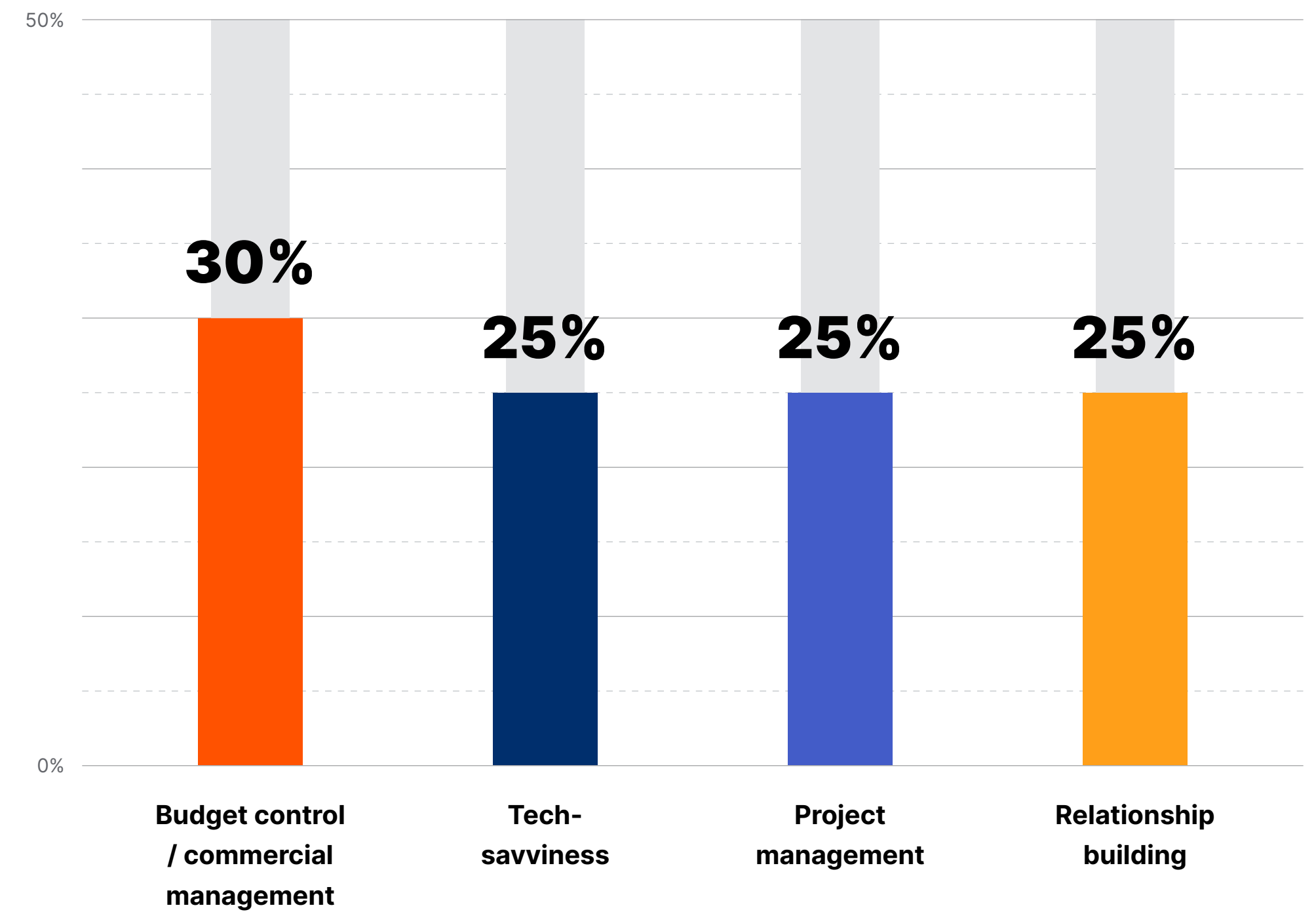
Nearly half of leaders have expressed full confidence their staff have the necessary skills.

When asked if they are confident their workforce has – or will have – the necessary skills for the needs of the business over the next 12 months, nearly half (44%) of construction leaders expressed full confidence. Half (50%) said they are **'somewhat confident'**.

However, these people skills must be backed up with tight financial controls and effective cost-management systems. Accordingly, business leaders in MENA viewed the skill they think will be most in demand¹² in the construction industry in the next 12 months as **'budget control/commercial management'**.



Thinking about the construction industry in the next 12 months, which skills do you think will be more in demand?



¹² Based on the highest percentage of respondents to choose this answer as one of their top three choices

Focused on the future



Driving sustainability

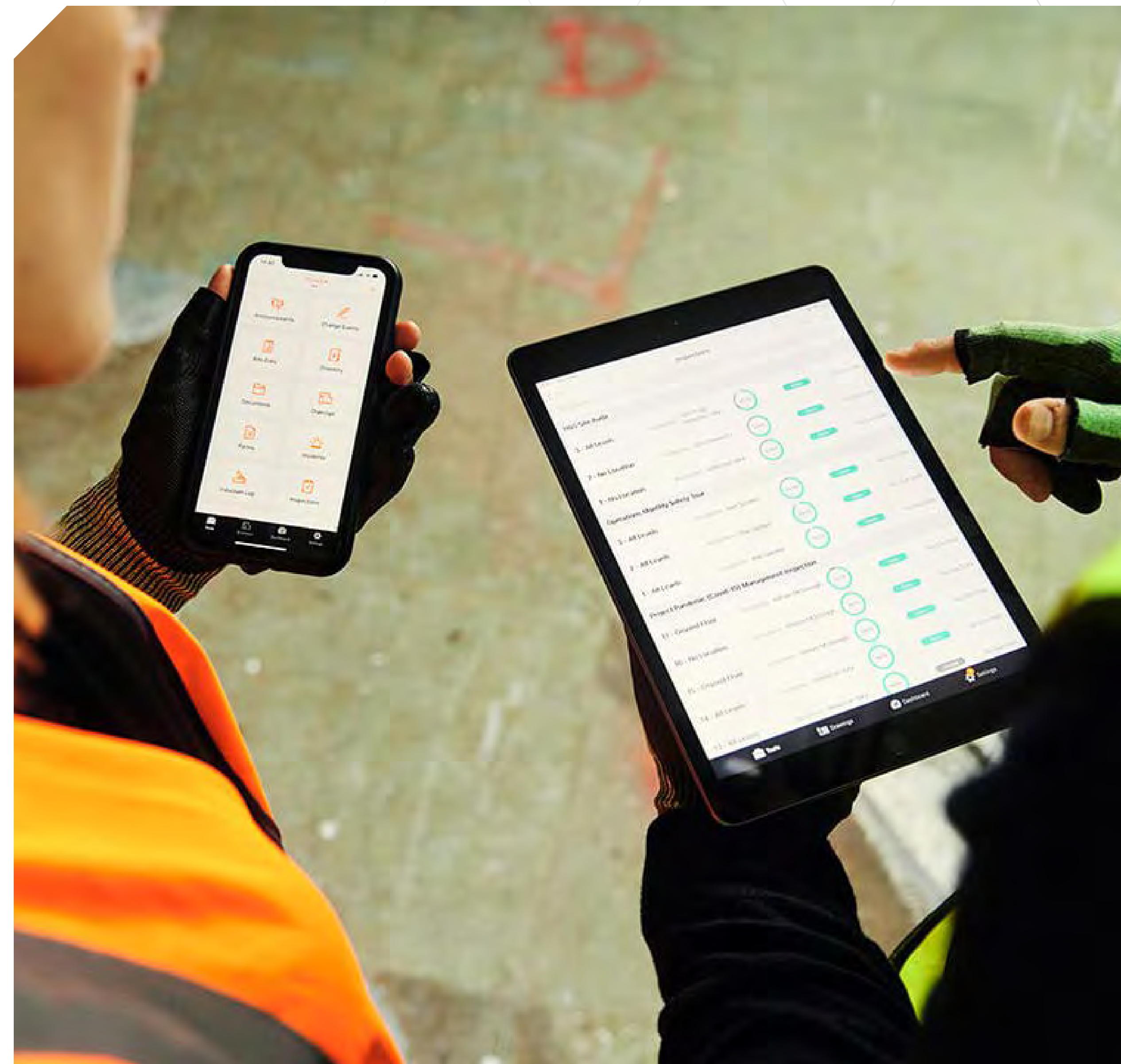
Construction's carbon emissions will fall as companies align themselves increasingly with the sustainability agenda set by governments in the MENA region.

Sustainability is increasingly important in the MENA region. Saudi Arabia is committed to achieving net zero by 2060; UAE by 2050¹³. A host of green initiatives are flourishing across the region, many of them aimed at reducing pollution, optimising water resources and fighting desertification.

NEOM's The Line linear city, for example, will be powered by 100% renewable energy¹⁴. Technology will play a vital role in tracking the progress of these initiatives and ensuring eco-targets are met.

The next United Nations climate conference – COP28 – is being hosted by the UAE in Dubai. The eyes of the world will be on the Middle East, looking to see the progress oil-rich countries are making in pivoting towards their net zero ambitions.

Similarly, construction's stakeholders have increasing expectations of how responsible businesses should operate and are encouraging firms to focus intensely on their social



¹³ <https://www.bbc.co.uk/news/world-middle-east-58955584>

¹⁴ <https://www.neom.com/en-us/our-business/sectors/energy>

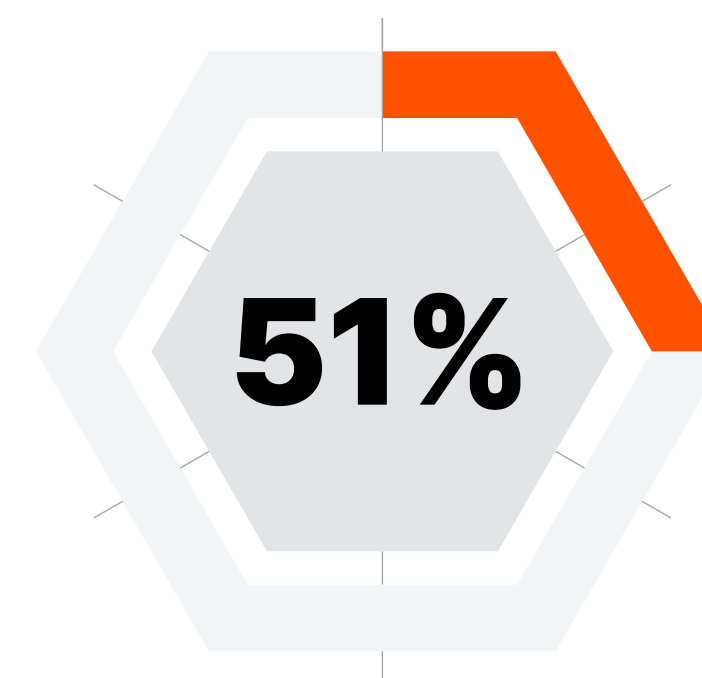


purpose, and, in particular, sustainability.

By committing to greener ways, construction can increase its appeal to the new generation of workers, especially Gen Z, who are influenced heavily by purpose and societal responsibility. To attract these talented young people, it is imperative that construction – traditionally a carbon-intensive sector – finds ways to reduce its CO₂ emissions.

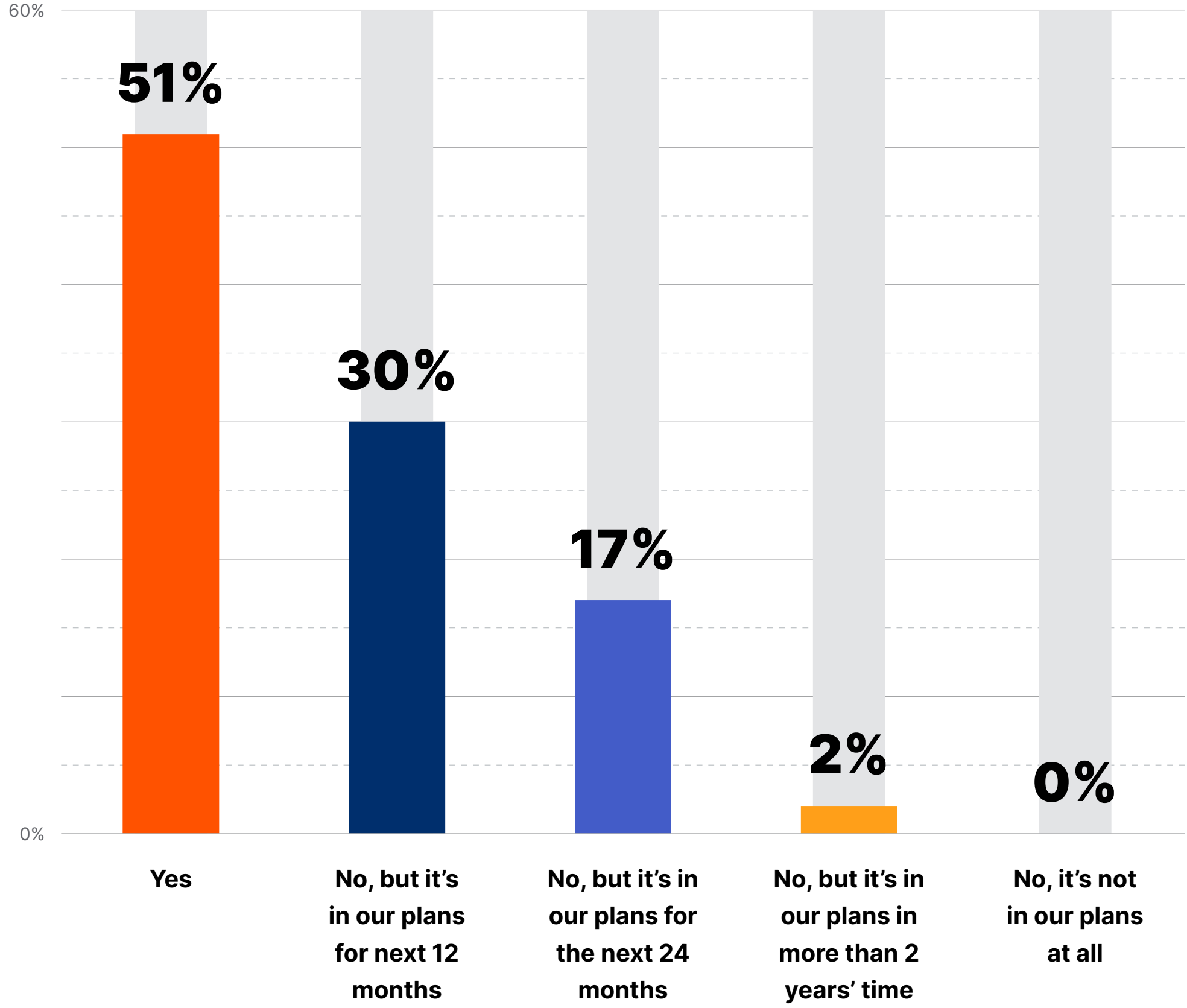
Getting better at sustainability would therefore support country-driven incentives, increase the talent pipeline and alter popular perceptions of construction's impact on the environment.

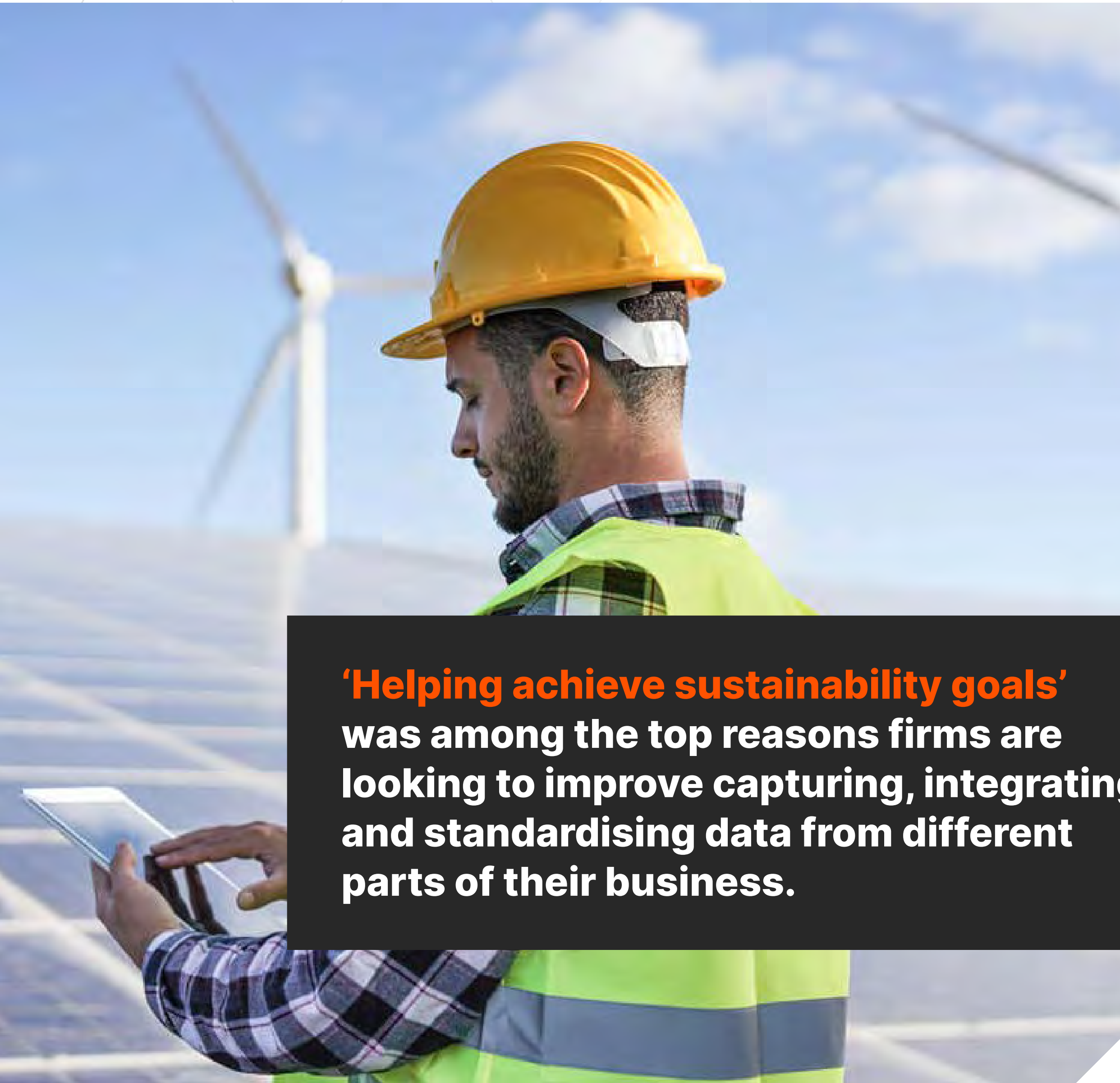
Achieving these imperative sustainability goals will be testing, say business leaders but it's a challenge they are keen to meet. Just over nine in ten (91%) leaders say decarbonisation of their construction projects will be an important challenge for them over the next three years.



of construction firms are actively tracking carbon emissions on projects, and three in ten (30%) say it is in their plan for the next 12 months.

Are you actively managing and tracking carbon emissions on your construction projects today?



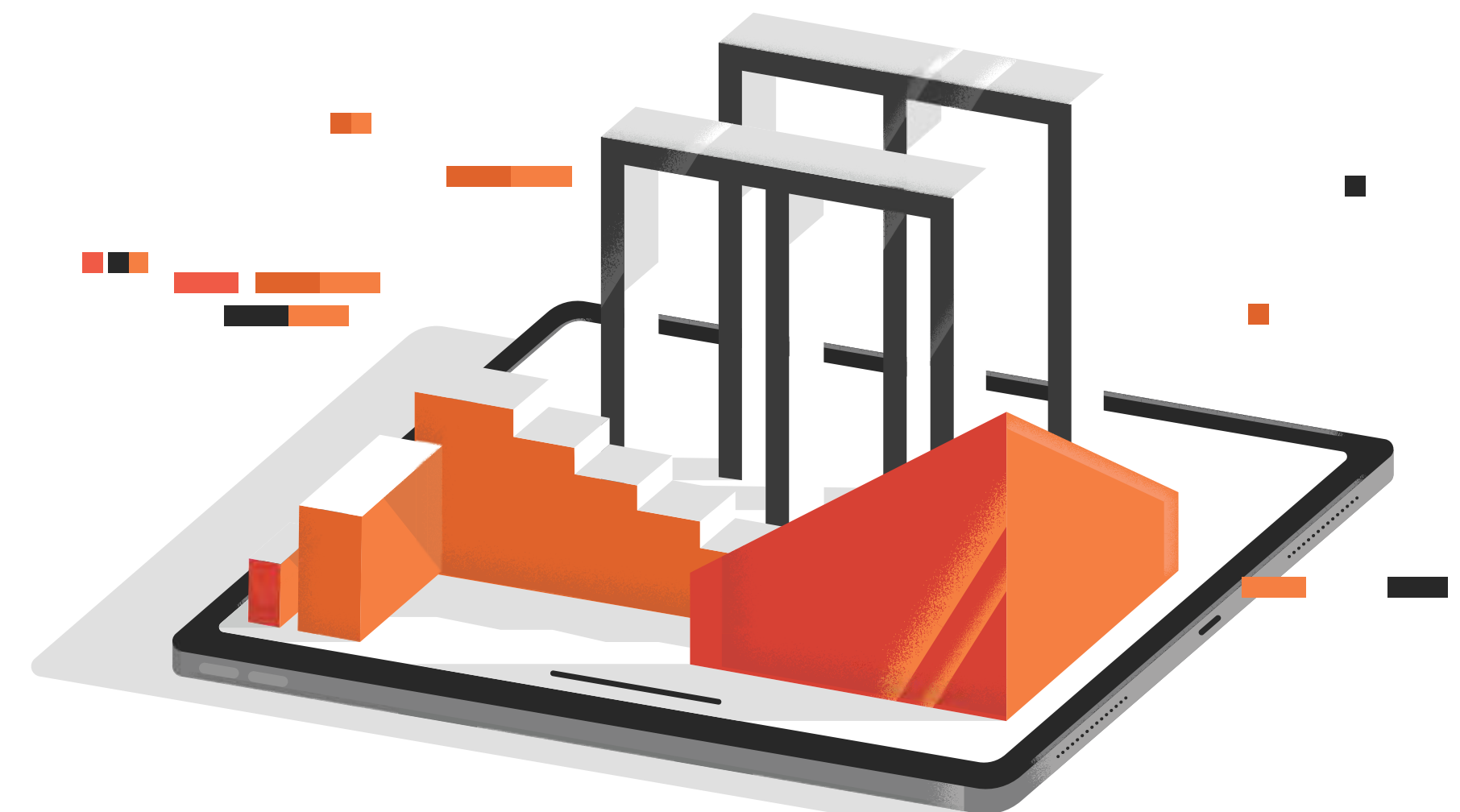


‘Helping achieve sustainability goals’ was among the top reasons firms are looking to improve capturing, integrating and standardising data from different parts of their business.

Over four in ten firms (43%) now comply with ISO 14001 (Environmental Management System), and four in ten (40%) say they will sign up within the next 12 months. Only one in ten (10%) say they have no plan to join their peers in the next 12 months.

Saudi Arabia construction firms are slightly ahead of their UAE counterparts in adopting ISO 14001. Half (50%) of Saudi firms have the system in place, compared to just over a third (36%) in the UAE.

To help them realise their ambitions in the UAE, the government has created a set of green building codes that will help save energy and water. Launched in 2022, the codes provide new guidelines and regulations that pave the way to sustainable economic development.



Wrap-up

So what must construction do now to accelerate digital transformation and boost the bottom line?

01 Capture data today to improve your business tomorrow

Too many businesses still record and store data on paper and rely heavily on paper-based processes. Some are still in the early stages of their digital journey. Failing to embrace technology's power to consolidate data makes it impossible to achieve the efficiencies modern businesses need to be truly competitive. Increasingly, this is becoming understood across the region.

02 Use technology to drive the bottom line

Platforms can eliminate laborious processes, sharpen up decision-making and raise productivity. More than half of main contractors believe productivity would benefit if staff could use construction platforms to access project information remotely. Business leaders estimate project costs could fall by 25% if they did.

03 Share project data

Collaboration with stakeholders and supply chain partners is easier and more effective when data is visible to all in real-time. Embracing technology's potential for better shared visibility can deliver better and faster solutions.

04 Invest in new skill sets

Business leaders need to enhance and develop their teams' technological skills in order to take full advantage of digitalisation's potential. In an industry too often beset by skill shortages, concerted efforts must be made to foster hard and soft skills across the construction ecosystem.

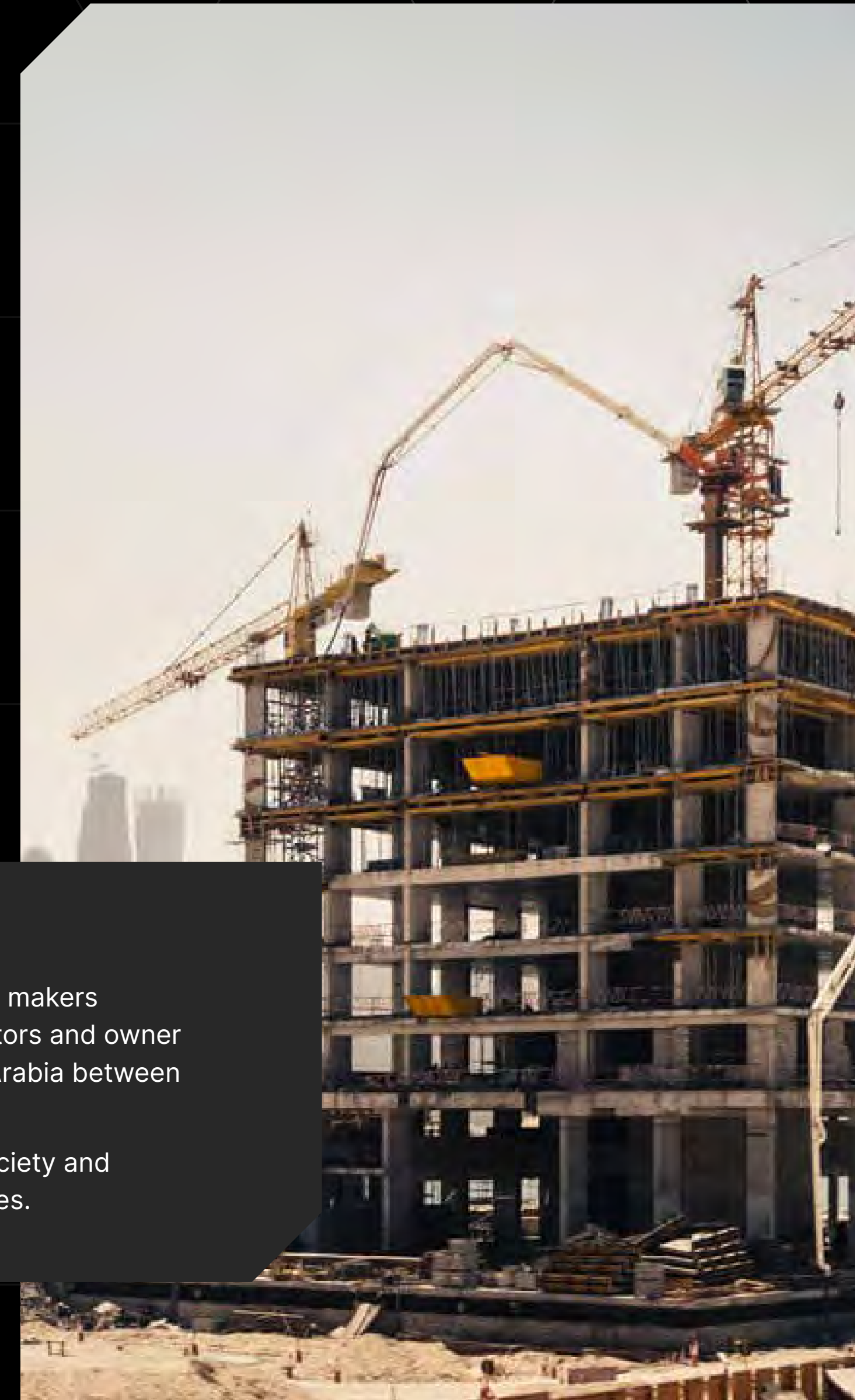
05 Get it right first time

One in four business leaders say 25% of a typical project's time is spent on reworking. Platforms allow greater data collaboration across a project, leading to less admin and better quality work on site. Rectification rates can fall dramatically and profitability soar.

Methodology & Sources

The research was conducted by Censuswide. Surveyed 803 18+ decision makers working in the construction industry, specifically in main and sub contractors and owner led developers across the UK, Ireland, France, Germany, UAE and Saudi Arabia between 29.12.2022 - 12.01.2023.

Censuswide abides by and employs members of the Market Research Society and follows the MRS code of conduct which is based on the ESOMAR principles.



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