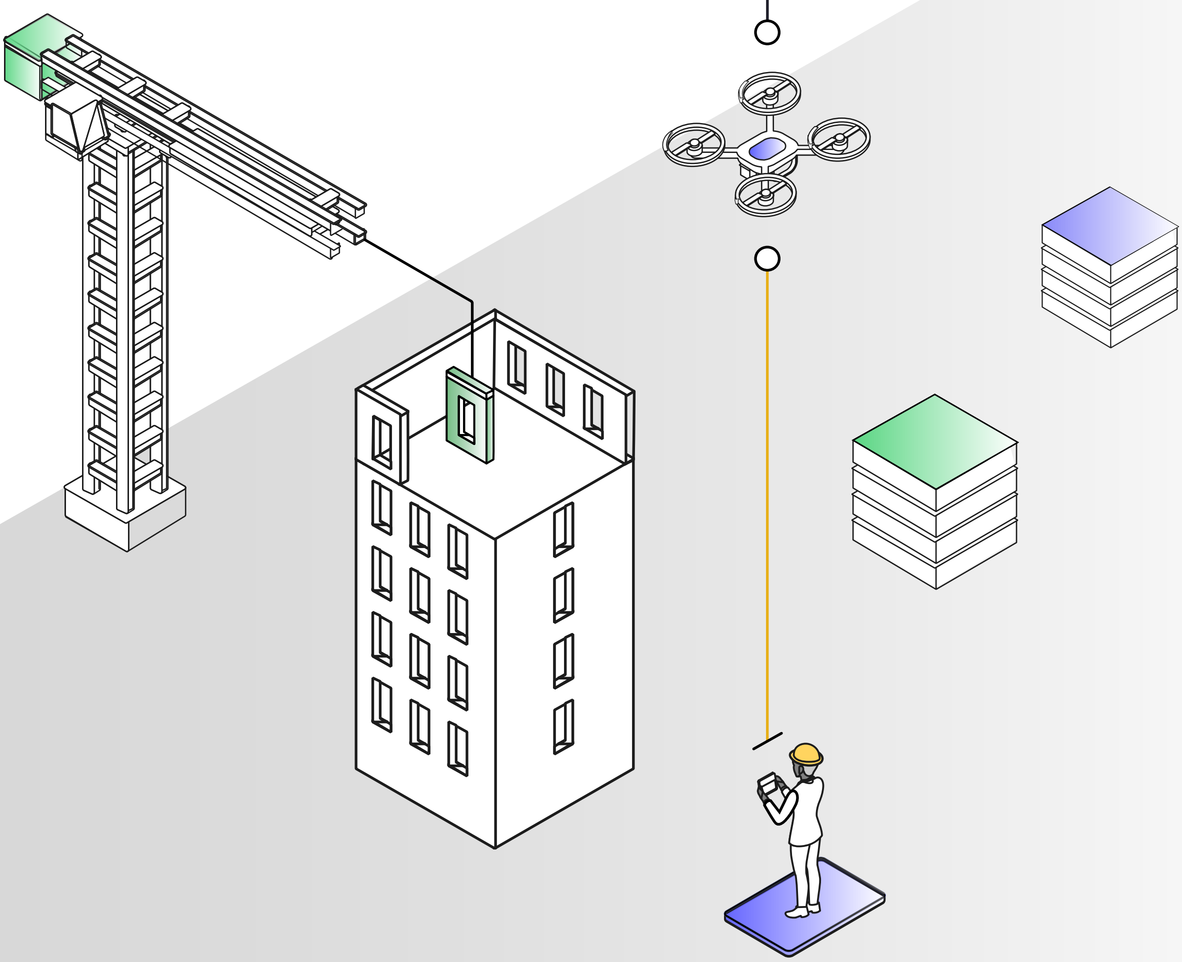
CIOB

Insight Report

Mapping your digital transformation

Benchmark yourself against your industry peers and plot your digital construction journey.



AUTODESK

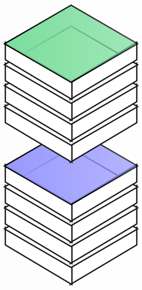
Introduction

Going digital can be a game changer and transform your business. But the journey to digital can be a challenge to navigate.

Autodesk and the Chartered Institute of Building (CIOB) prepared a ‘plotting your digital construction journey’ infographic to help you visualise where you are in your digital transformation and define a roadmap and next steps that work for your organisation.

A survey was launched alongside the digital journey infographic. This report contains a summary of the survey findings for the United Kingdom & Ireland (UKI) to:

- Enable you to **benchmark yourself against others** in the industry, and navigate your own digital roadmap.
- **Stimulate your thinking** around the **outcomes, benefits, and challenges** on the road to digital adoption, and your **next steps**.



Executive summary

After reading Autodesk and the CIOB's 'digital journey' infographic, participants were invited to take part in a short survey about their own digital journey. 65 representatives from across the built environment in UKI took part between September 2020 and March 2021, amidst the significant event of the Covid-19 pandemic.

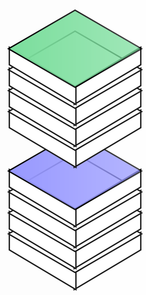
The survey findings show that change is happening across UKI, as the construction industry embraces digital transformation. **80% of companies have started their journey to digital, with half still in the pilot, planning or scaling phases**. Just **6% are at the advanced stage of adoption,** which is low compared to travel, media and finance industries. Nevertheless, change is underway.

So, what's holding us back from progressing more quickly? A third of organisations **(31%) are unclear of the steps they need to take** to advance their digital transformation. **28% are either new to digital technology or still unclear on the benefits it can bring.** A quarter **(24%) say it's their company culture that needs to change**—many are still either **taking a top down (33%) or project-by-project (26%) approach** to innovation, with just **9% empowering staff to make decisions** about the technology they use.

Clearly the industry needs more support in understanding the value digital transformation can bring to their business, together with help in developing structured, workable plans for digital technology adoption that are both inclusive and support their business goals.

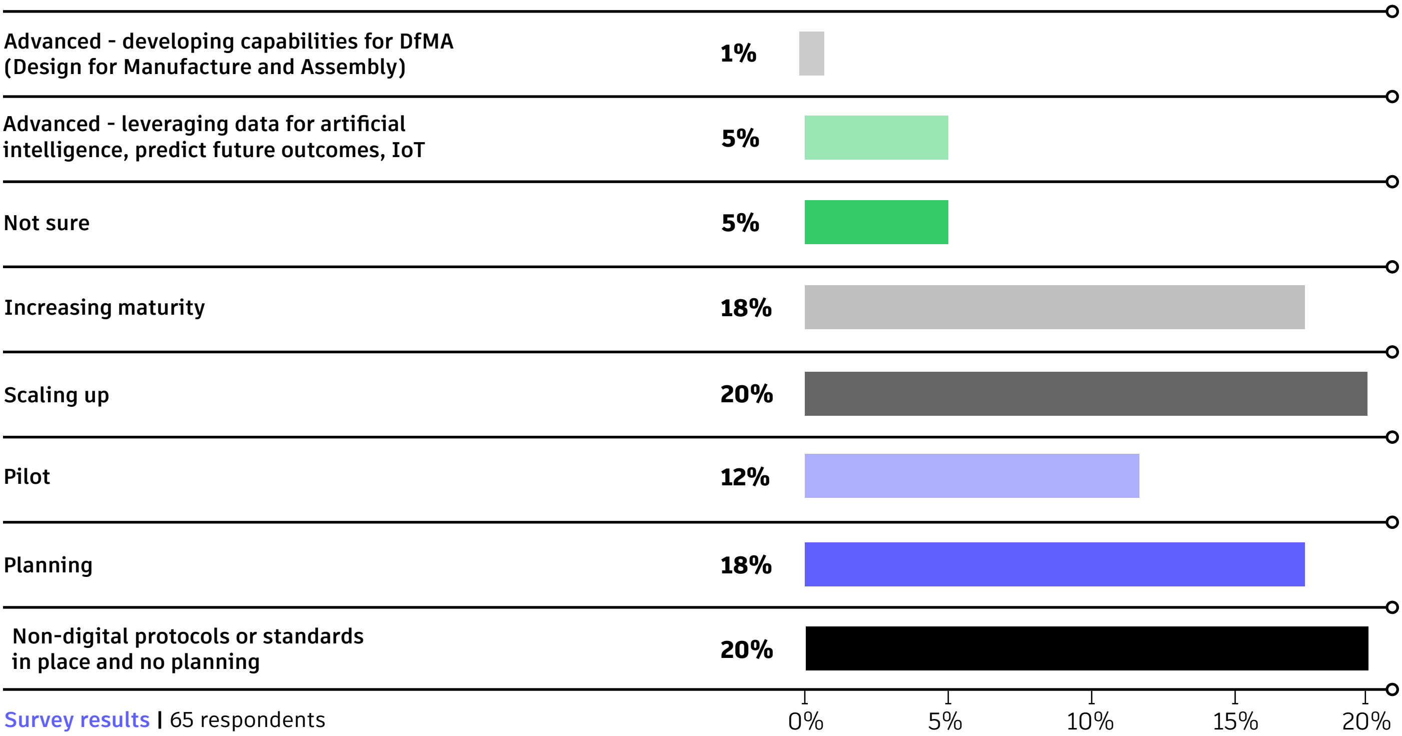
Many organisations aim to achieve some sort of financial return on their investment, whether that's **greater operational efficiency (55%)** or **overall business growth (49%)**. Meanwhile, major events like the Grenfell Tower tragedy have pushed **reducing risk higher up the agenda for many (48%)**. Less tangible benefits related to improved sustainability and increased social value are less popular at present, but we can expect to see more organisations place emphasis on these areas over the coming years.

As you read through the findings in greater detail, take a moment to consider where you currently are in your digital journey and how this compares to your peers. Think about the benefits and outcomes you'd like to realise, and the steps you might need to take to make it happen.



Survey results and findings

Q1 In your opinion, where is your company (or your part of the company) currently, on its digital journey?



Survey results | 65 respondents

Insight

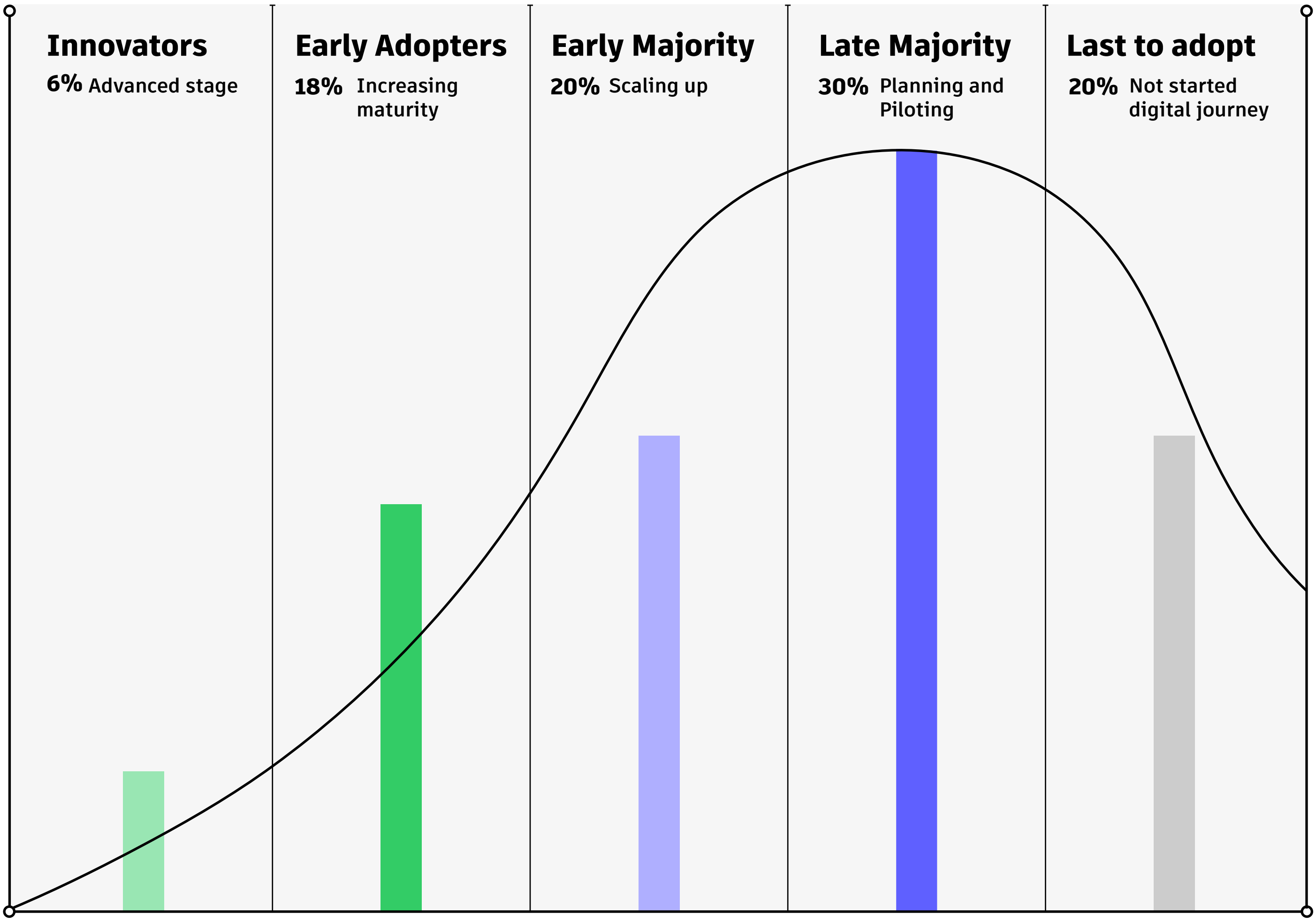
Technologies tend to be adopted over time, in a similar pattern. This is called the innovation adoption curve[1]. The first users to try something are represented by a small percentage called Innovators. As time moves on, if the technology is successful, more and more people adopt it [2].

For analysis, the Q1 survey results above were applied to and overlaid with the innovation adoption survey in figure 1 (on the next page) to show the adoption curve for digital construction. **Mapping the survey results to the adoption curve clearly shows that change is happening across UKI, and the construction industry is embracing digital transformation.** The curve also shows that 50% of organizations are in the early or late majority adoption stages.

The adoption curve shows that across UKI, the construction industry is embracing digital transformation.

Figure 1.

The Innovation Adoption Curve for Digital Construction



Survey results | 65 respondents

Figure 1. The Innovation Adoption Curve for Digital Construction

The survey results mapped to the adoption curve above clearly show that change is happening, and the construction industry is embracing digital transformation.

6% of companies are **leading the way for innovation** and change, in the '**advanced stage**', with most using data for artificial intelligence (AI), future outcomes and the Internet of Things (IoT). A few (1% of companies) are developing capabilities for Design for Manufacture and Assembly (DfMA). These are the most **advanced** users called **Innovators**.

18% of companies are in the **Early adopters** 'increasing maturity' stage, driving change, optimising data management and workflows, while appointing a head of digital to plan long term. These **Early Adopters** are a small group critical to the success of a technology's spread.

As the technology is succeeding with these users, it **indicates a tipping point**. Many companies are still in the earliest stages of their digital transformation journey, either planning (18%), piloting (12%) or scaling up (20%). This is the **early and late majority stages** and is where things get interesting, as these stages involve most of the industry sample adopting the technology, **crossing a 50% market adoption**.

In contrast, only 20% of companies have **not yet started** their digital journey, representing the **last users to adopt.** They have non-digital protocols or standards in place and have no plan for digital transformation.

Figure 2.

McKinsey Global Institute Digitisation report: The gap to the digital frontier remains large across industries

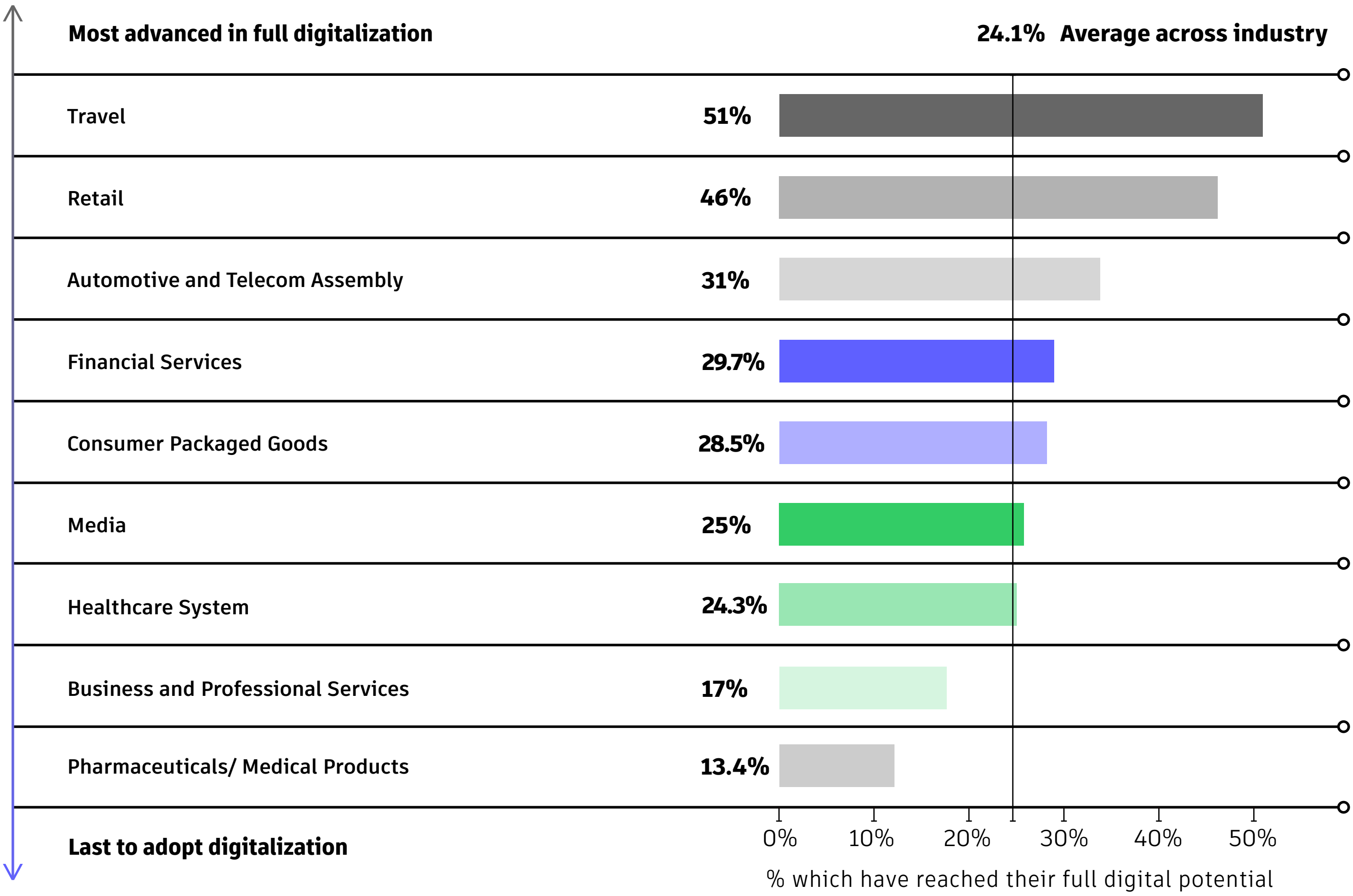


Figure 2. McKinsey Global Institute Digitization report: The gap to the digital frontier remains large across industries

The construction industry is embracing digital transformation. But how do other sectors compare?

According to the McKinsey Global Institute (MGI), **sectors with a high level of digitization also display the largest productivity growth**. Industries that are ahead in digital transformation tend to be services or sectors that deliver products that are less physical and more immaterial. Other sectors that display more rapid digitisation include those with direct consumer links, faster capital turnover, and are more global than local. Other sectors that display more rapid digitisation include those with direct consumer links, faster capital turnover, and are more global than local. Among the sectors that are most advanced in digitisation are the travel industry, which is in the lead, having reached 51% of its full digital potential. Finance and media industries are also above the average; among the last to adopt (laggards) are pharmaceutical companies, and large swaths of manufacturing–see figure 2[3]. Our survey results suggest that just 6% are considered innovators in the adoption curve. Within their journey, these **6% are at the most advanced stage of digital adoption. The construction industry lies below the average cross industry advanced stage of 24.1%[4] which suggests construction is one of the later industries to adopt digitalization.**

Just 6% **at the advanced stage of adoption. The construction industry lies well below the average cross industry advanced stage of 24.1%[4], and is one of the later industries to adopt digitalisation.**

Figure 3.
The accelerated adoption of Zoom following the global pandemic:

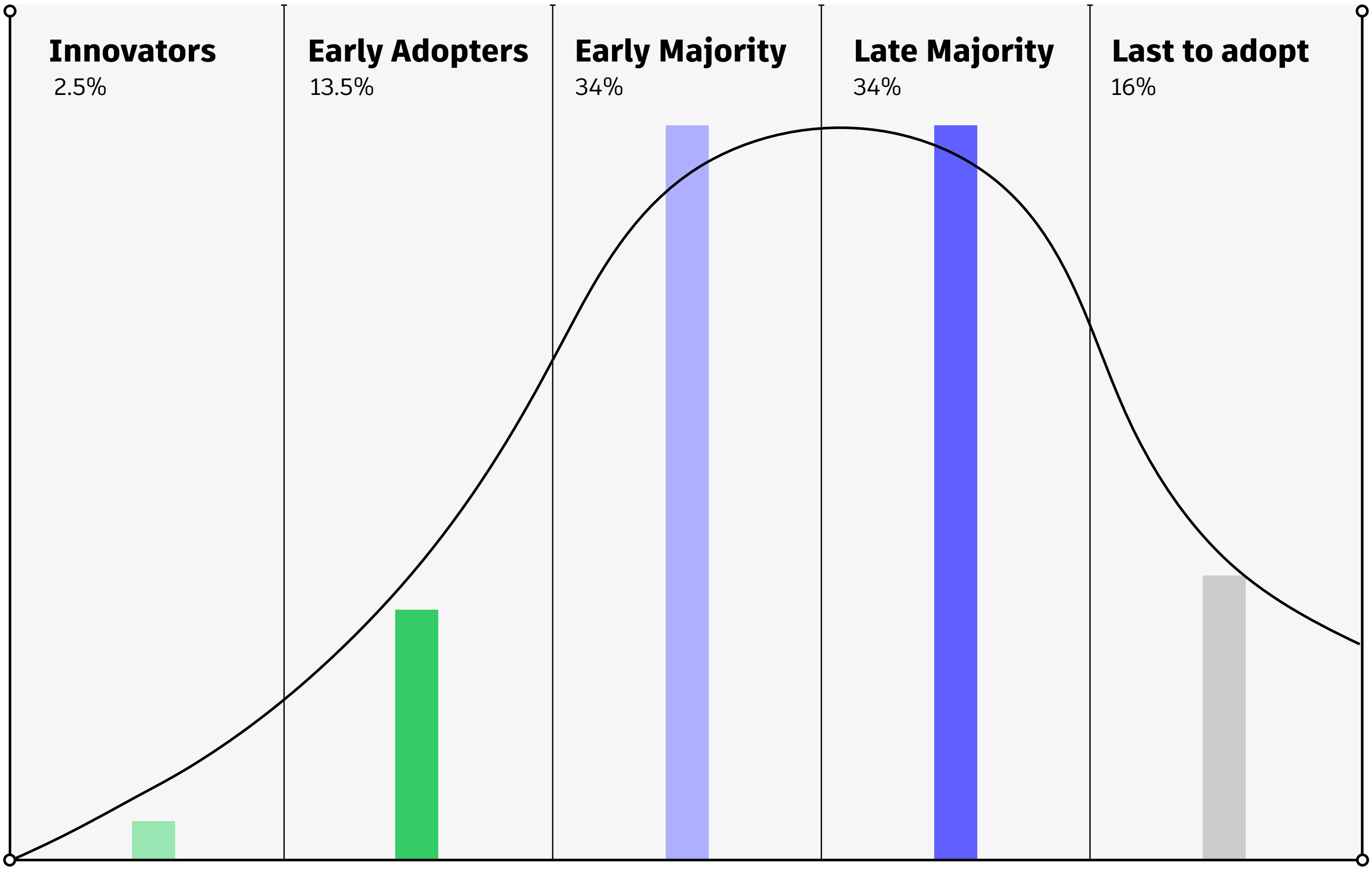


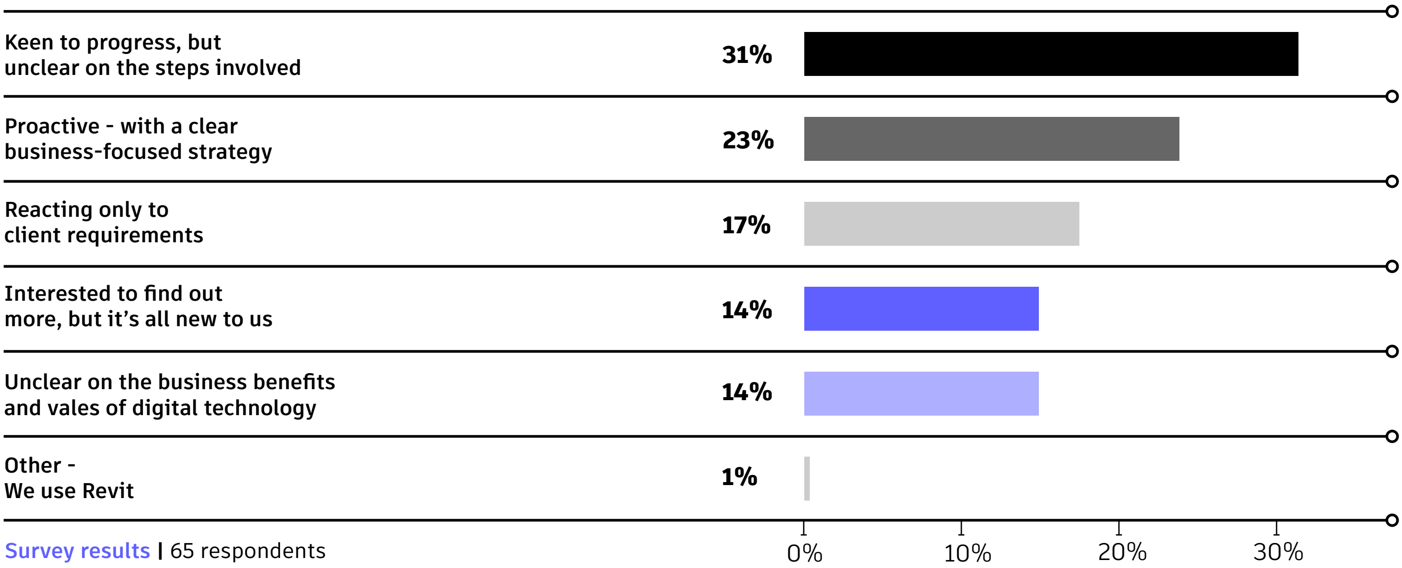
Figure 3. Accelerated adoption of Zoom following the global pandemic

Significant events can cause major disruption and accelerate the adoption of digitization.

Sometimes, however, **significant events can cause major disruption and accelerate the adoption of digitization** and the innovation adoption curve. Incredibly, the Covid-19 crisis has allowed Zoom to move all the way from the beginning of the Early Adopters stage to the middle of the Majority of the growth curve–see figure 3. And it's made this giant move in months, while this step would normally take years, as did the previous step from Innovators to Early Adopters[5]. This shows that whilst the curve shape remains the same, the timescale can be accelerated enormously in response to a significant event–in this case, a global pandemic.

Similarly, 85%[6] of respondents in the McKinsey future of work study survey said their businesses have somewhat or greatly accelerated the implementation of technologies that digitally enable employee interaction and collaboration, such as videoconferencing and filesharing, since the start of Covid-19.

Q2 In relation to its digital journey, would you say your company is:



Survey results | 65 respondents

Insight

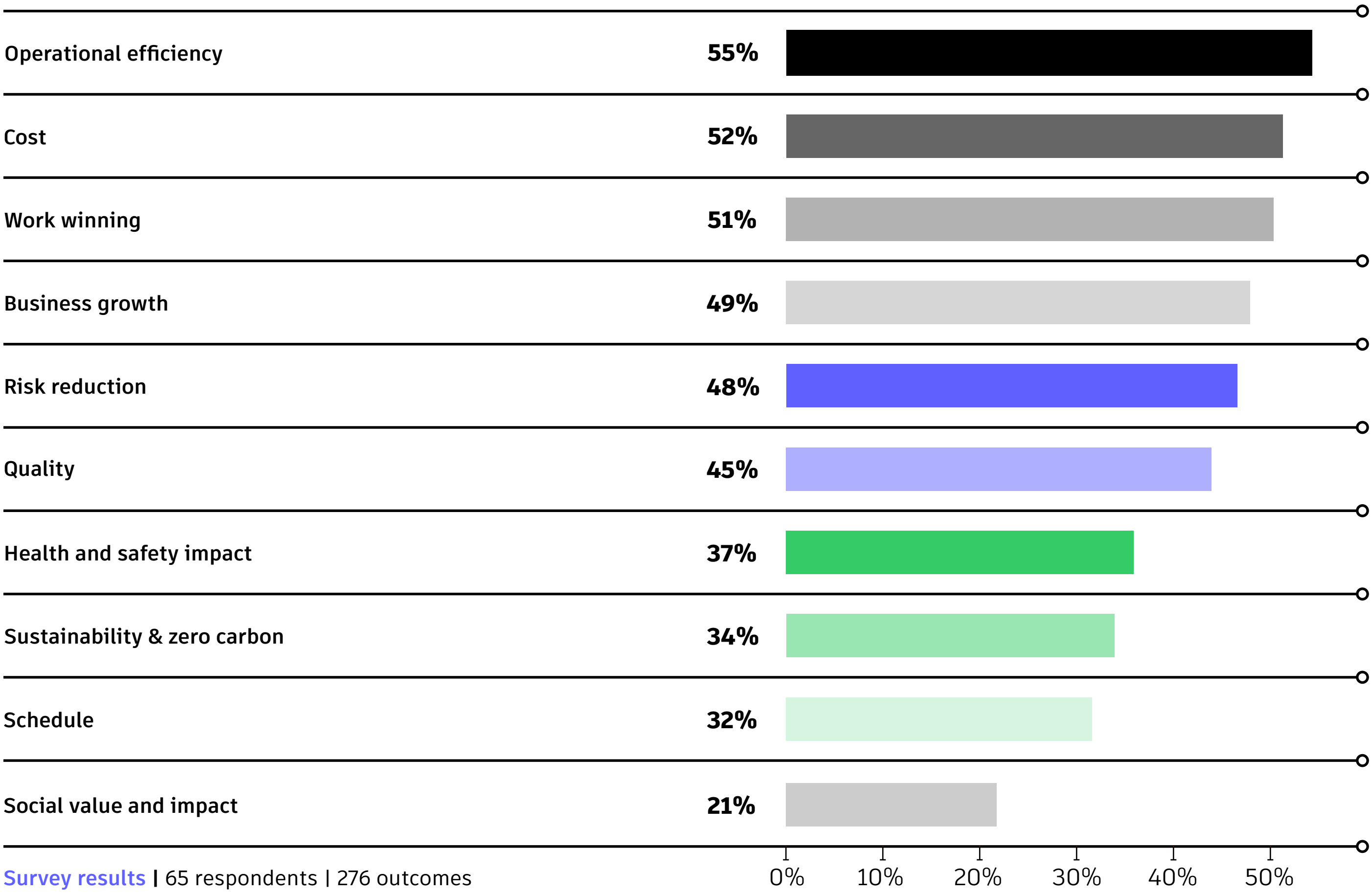
23% of companies are **proactive with a clear business-focused strategy** and roadmap for digital construction in place. However, the journey to digital construction can be challenging to manage for the majority.

Many companies are keen to progress, **but are unclear of the steps involved** (31%). If your organisation falls into this category, you can use this digital journey roadmap to help define your next steps, and see how innovators use digital technology with these real world projects and customer success stories.

14% of respondents are **interested in finding out more** about digital technology **but it’s all new to them.** The same number (14%) are unclear on business benefits or the value of digital technology, while 17% said they embrace digital only as a **reaction to clients’ needs**.

31% **keen to progress, but are unclear of the steps involved.**

Q3 Which of these would be important outcomes from digital adoption for your business?



Survey results | 65 respondents | 276 outcomes

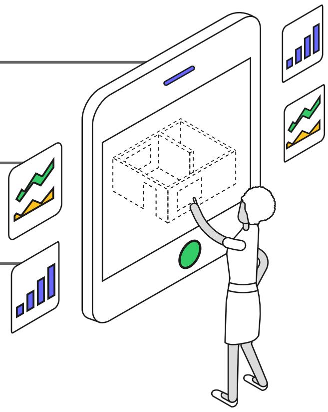
Insight

Companies would like to reap the benefits of digital construction.[7]

Financial improvements are the most popular. The top outcomes from digital adoption are those related directly to the following financial advantages, which may form a baseline of benefits:

- **55%** Operational efficiency and productivity
- **51%** Winning work
- **52%** Cost reduction
- **49%** Business growth

The most popular non-financial objectives and outcomes are:

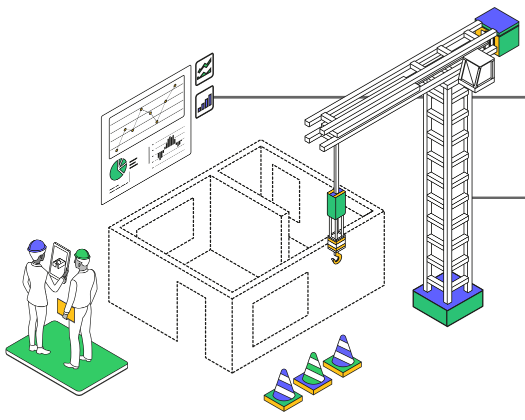


48% Reducing risks

45% Improving quality

37% Health and safety impact

The safety bill/ the golden thread of digital information/ quality is a key industry focus, again a response to a major event—the Grenfell Tower tragedy and Dame Judith Hackitt's report Building a safer future[8].

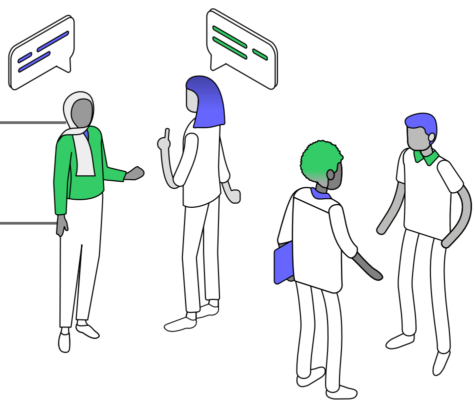


One other non-financial, but quantifiable outcome is emerging:

34% Sustainability and net zero carbon

This is likely to continue to grow in focus as governments make further commitments to climate change and look to businesses to step up, follow suit and pledge to join the fight against climate change. The survey findings show a third of businesses focused on net zero[9]. The same figure was found with the UK's largest companies[10].

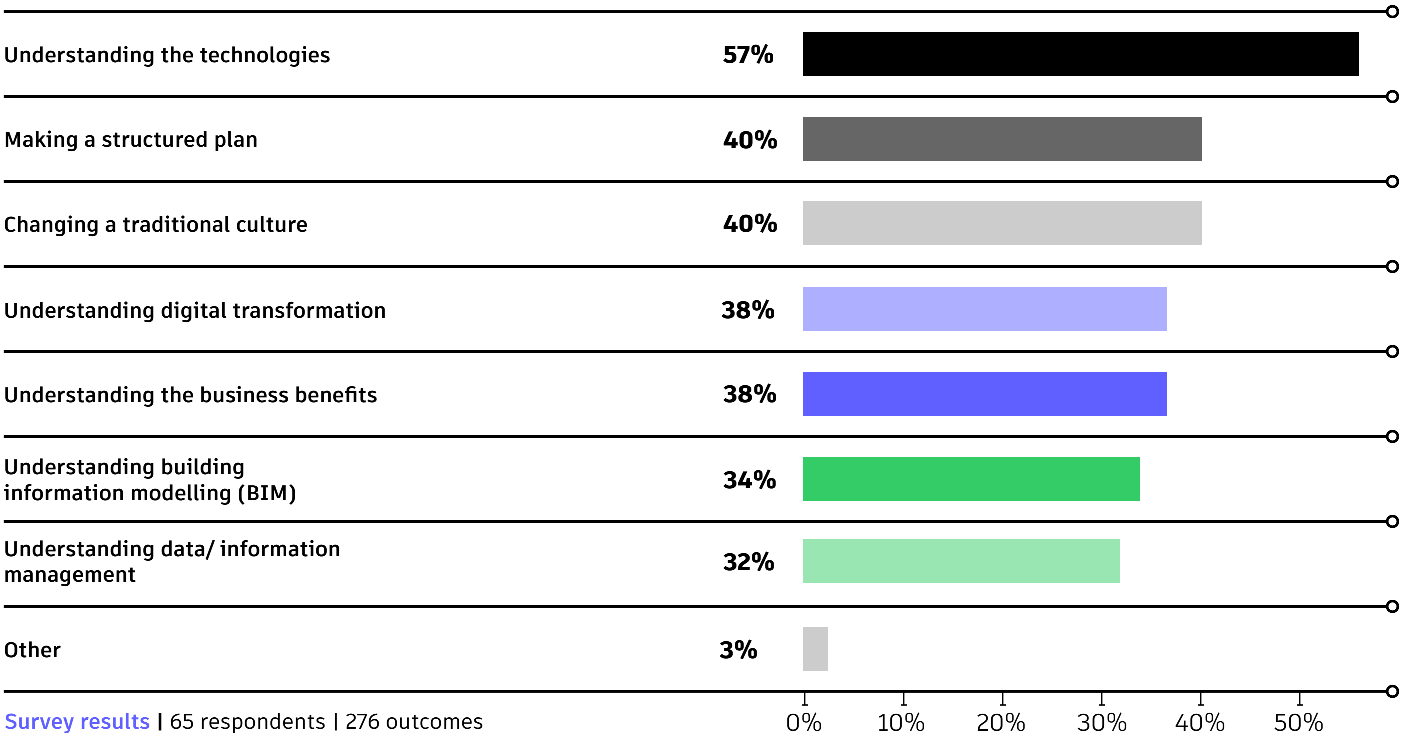
However, one outcome is still trailing behind, perhaps because it's less tangible:



21% Social value and impact

Yet design and build have a massive part to play in positively impacting people's lives and creating social cohesion[11, 12].

Q4 What kind of help do you need to move things forward?



Survey results | 65 respondents | 276 outcomes

Insight

The majority of outcomes suggest many companies have begun their digital transformation journey:

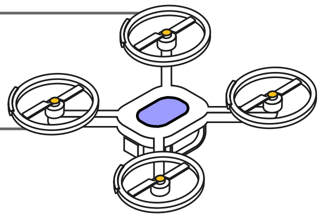
80% have started their digital construction journey, but many need guidance and help to plan the way forward and take their next steps.

Company culture, value drivers and outcomes:

40% cite company culture as a roadblock

38% want to better understand business benefits before moving forward

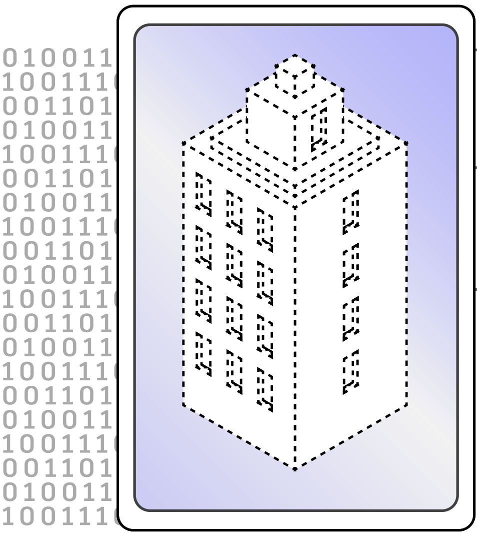
Better understanding of digital transformation, planning, digital workflows and technology:



57% need help to better understand technologies

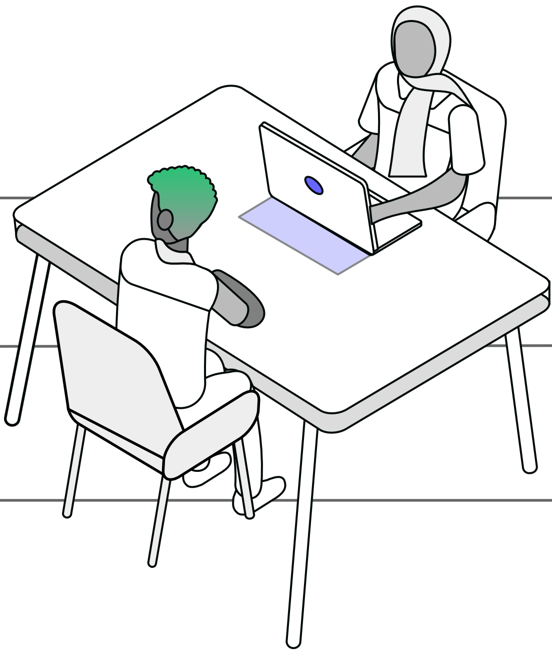
38% want a greater understanding of digital transformation

40% need help with making a structured plan

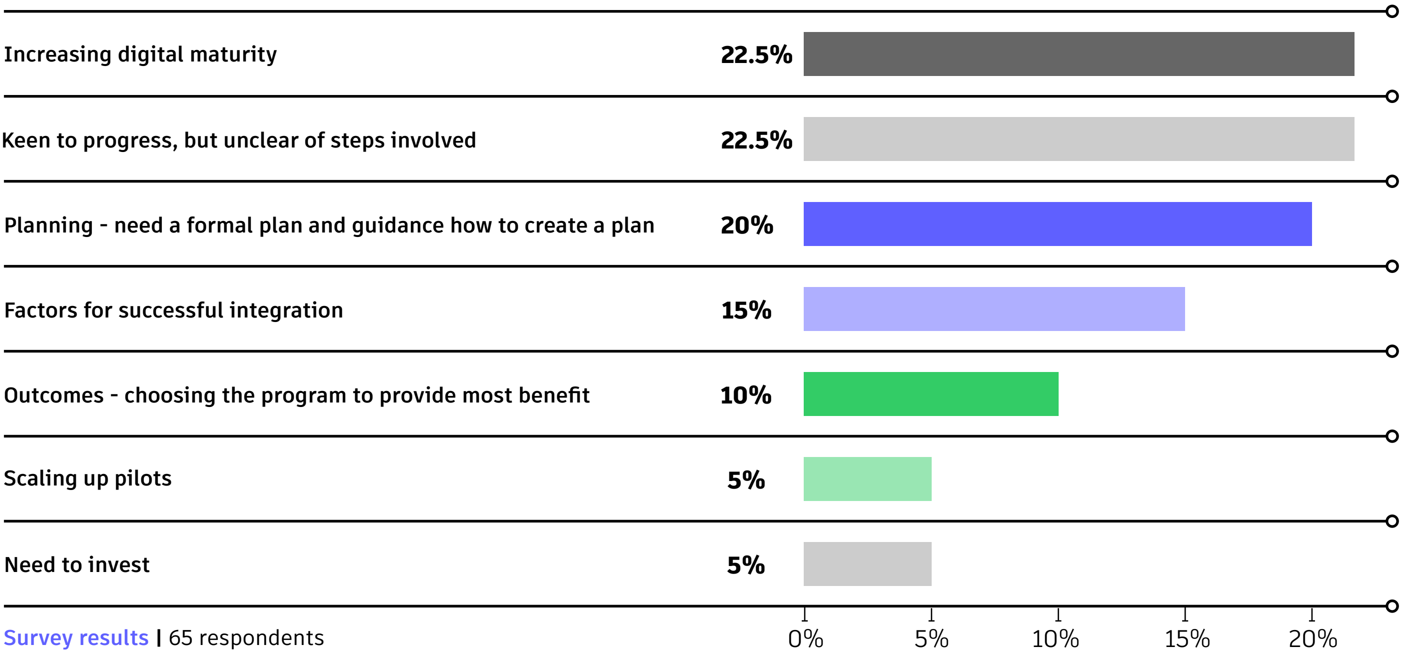


34% want better knowledge of building information modelling (BIM)

32% want a greater understanding of data and information management



Q5 What do you think is your company's next step on its digital journey?



Survey results | 65 respondents

Insight

The respondents' comments on the next step in their digital journey fell into similar themes illustrated in Question 4.

Company culture, as well as a better understanding of business outcomes, digital transformation, planning and technology appear to be a common thread.

22% of companies want to move forward but are unclear of the steps involved

20% said they needed guidance on how to create a formal plan

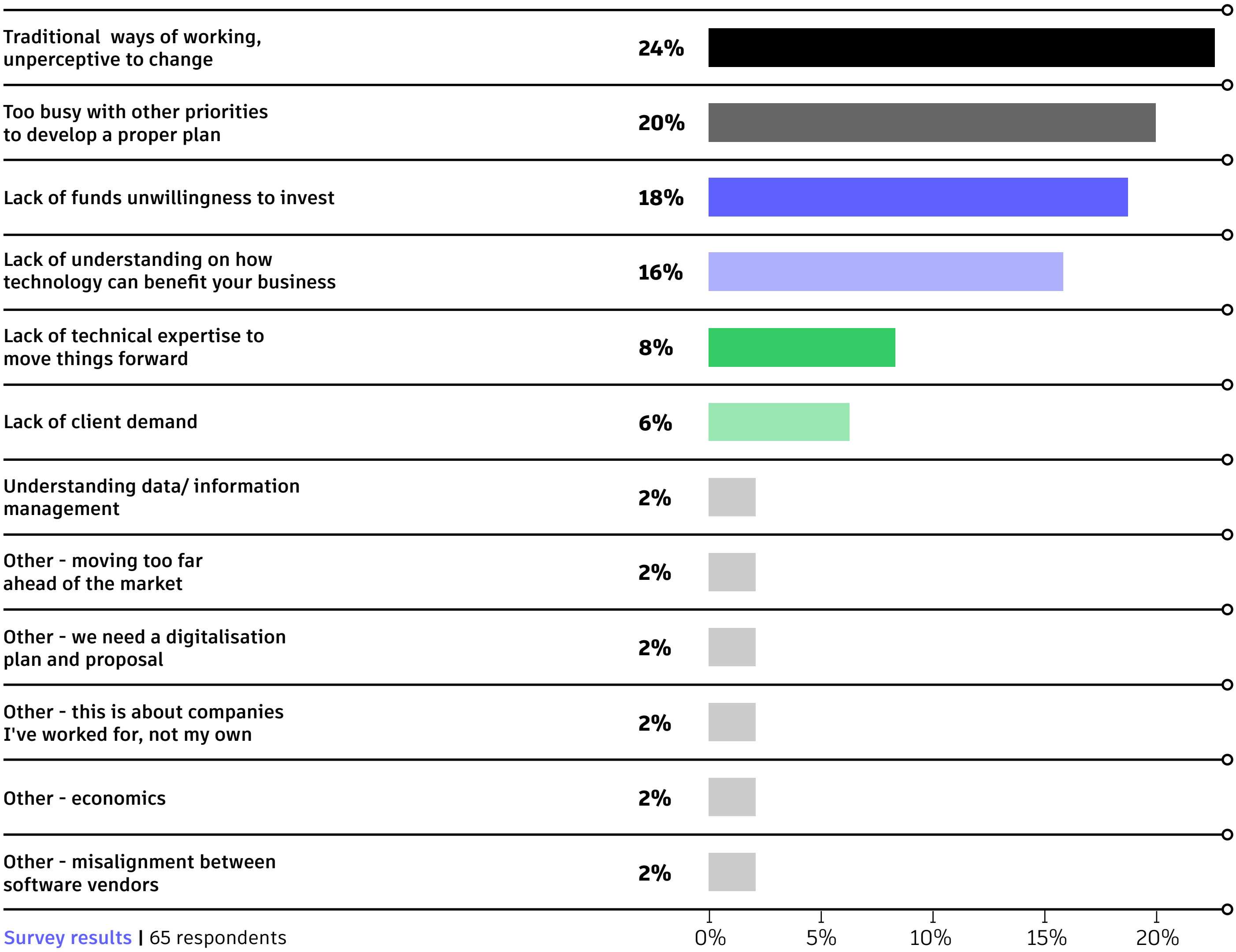
15% of companies believe adopting factors for successful integration is key

For example, gaining executive level sponsorship, getting the owners to listen, implementing the right training and skills, and rolling out BIM Level 3, and beyond.

10% need to choose the program that would provide the most benefit

5% need scale up pilots and to make further investments

Q6 What is holding your company back from progressing its digital journey?



Survey results | 65 respondents

Insight

While many companies have started their digital journey and see digital transformation as a priority, many are struggling on the path.

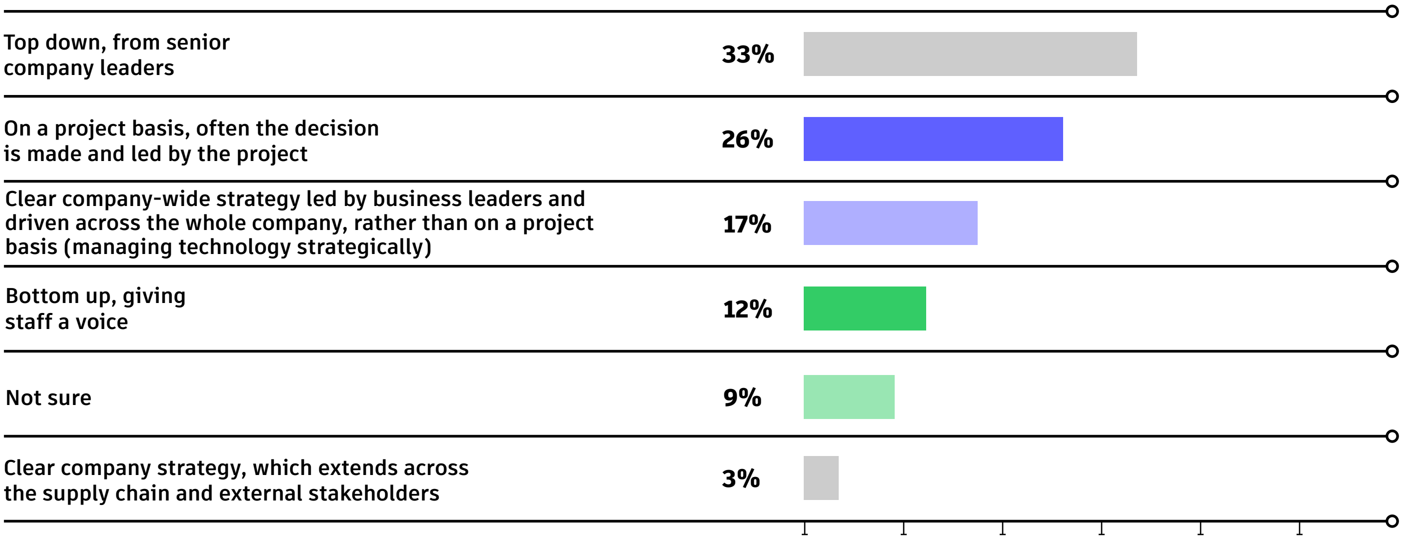
From the findings, it becomes clear that many are **unreceptive to change** (24%) and culture change can be a barrier.

More work needs to be done on the ROI and understanding how a digital way of working can support your business goals and initiatives. 20% are **too busy with other priorities** to develop a proper plan, 18% **lack funds or the willingness to invest**, and 16% **do not fully understand the benefits of digital technology adoption.**

If this sounds familiar to you, it can be helpful to think about the benefits to your organisation at different levels, for example:

- **At senior level, it's about the business benefit**
- **At a practitioner level, it's about the day-to-day benefits making the job easier**

Q7 How is digital technology innovation driven and managed at your company?



Survey results | 58 respondents

Insight

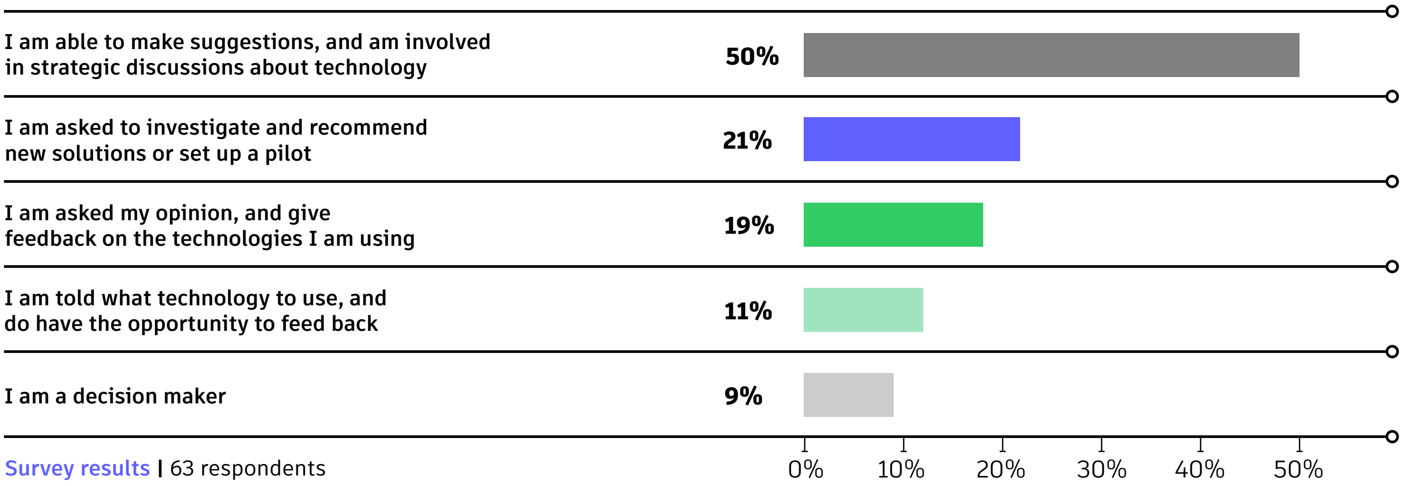
Many companies are **driving digital transformation and technology innovation** from the **top down** (33%), or on a **project-by-project basis** (26%).

However, **only 17% of companies are managing technology strategically**, with a clear company-wide strategy-led by business leaders and driven across the whole company. Just 9% say their organisations **empower their staff** to manage the technology they use. And only 3% have a **clear company-wide strategy** that extends across the supply chain.

17% **of companies are managing technology strategically.**

9% **say their organisations empower their staff to manage the technology they use.**

Q8 In your company, to what extent are you involved with decisions about technology?



Survey results | 63 respondents

Insight

Just 9% of our survey respondents said they were **technology decision-makers** at their organisation.

However, despite not having overall decision-making power, 80% said they did have some sort of **involvement in technology decisions**—40% can **make suggestions** and are **involved in strategic discussions** about technology, 21% are asked to investigate or **recommend new solutions or set up a pilot**, and 19% are asked to provide their **opinion and feedback** on the technology they use.

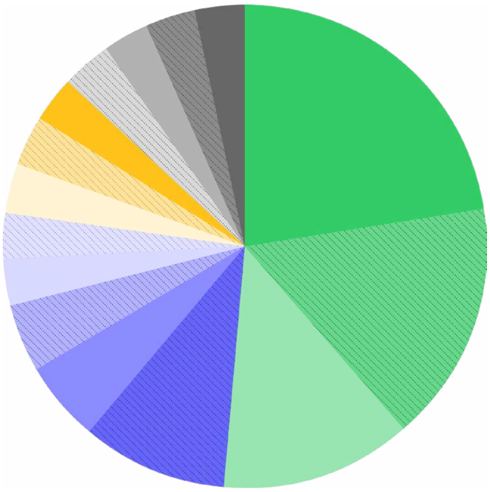
Just 11% of respondents said they were told what technology to use without any sort of consultation.

50% **can make suggestions, and are involved in strategic discussions about technology.**

11% **of respondents said they were told what technology to use without any sort of consultation.**

About the respondents

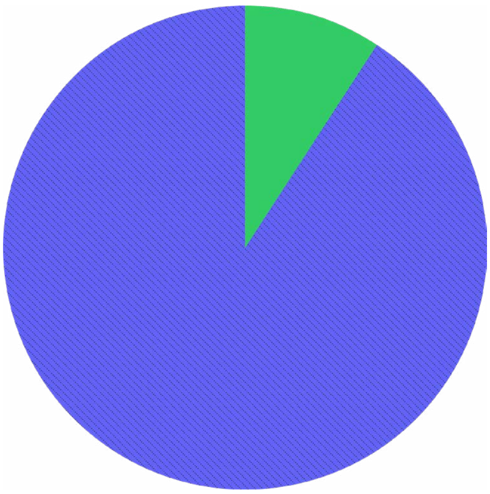
Occupation



Key

BIM Manager/ Head of BIM	21.88%
Digital Construction Manager/ Head of Digital Construction	15.62%
Project Director or Manager	12.5%
Account Executive	6.25%
Architect	6.25%
Innovation Director/ Manager	6.25%
Other	3.12%
Principal Partner	3.12%
CAD Manager	3.12%
Business Development Director/ Manager	3.12%
Surveyor	3.12%
Construction Manager	3.12%
Technical Consultant	3.12%
Site Manager	3.12%
Structural Engineer	3.12%

Employment Status

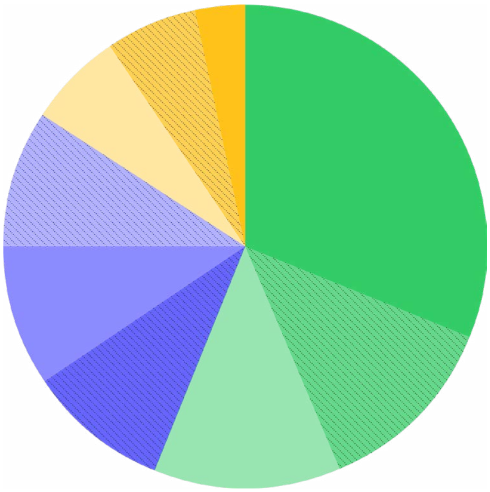


Key

Employed	90.62%
Unemployed	9.38%

About the respondents

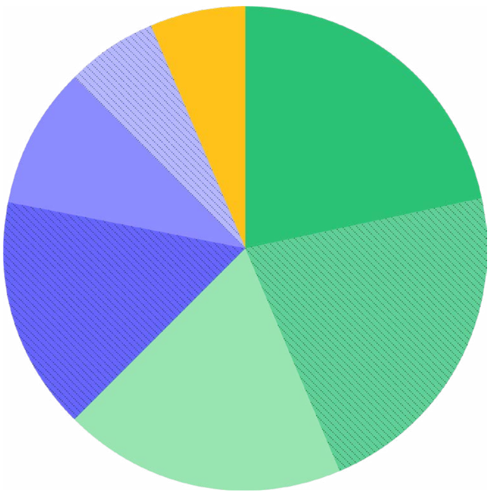
Building projects that account for more than half the business



Key

Commercial projects	31.25%
Multifamily housing (7 stories or more)	12.5%
Institutional projects	12.5%
Multifamily housing (Less than 7 stories)	9.38%
Civil	9.38%
Hospitality/Modular apartments	9.38%
Single family homes	6.25%
Industrial	6.25%
Power	3.12%

Type of company

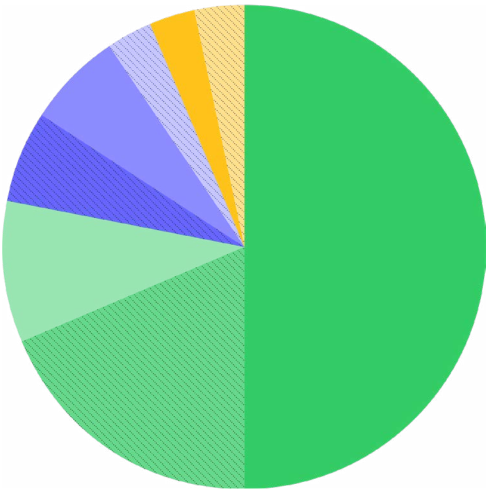


Key

General Construction Contracting Company	21.88%
Design Firm	21.88%
Consulting Engineers, Property Developer, Learning Institute	18.75%
Design/ Build Firm	15.62%
Construction Management Company	9.38%
Service Company (such as software, financial or industrial services)	6.25%
Specialty/ Trade Construction Contractor	6.25%

About the respondents

Area of specialty



Key

General Contractor, Architecture, Structures, MEP Prefab, Project Management, Estimating, Groundworks, BIM	50%
Concrete	18.75%
Asbestos/ Lead Abatement	9.38%
Mechanical	6.25%
Interior Finishes/ Mill-work	6.25%
Site Work/ Excavation/ Foundation	3.12%
HVAC	3.12%
Electrical	3.12%

1 https://www.valuebasedmanagement.net/methods_rogers_innovation_adoption_curve.html

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