LOGIKAL
Project Intelligence

2020

Project Controls Survey Report

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To everyone who contributed to this year's Project Controls Survey, together we've managed to surpass the number of responses from previous years by 50% to a record total of 1,029 - thank you! In doing so we're able to provide even greater depth and insight into what's happening in the world of performance management and project controls on projects globally, for the benefit of industry as a whole. The level of response also benefits several not for profits through our donation per respondent to their selected charity, in line with our ongoing commitment to the Pledge 1% movement.

Infrastructure projects bring significant benefits to global economies, particularly so when they are delivered efficiently and successfully. This will become increasingly so in these uncertain times, as we seek to work through and build off the back of the COVID-19 crisis. Our report highlights useful insights to help organisations and projects achieve this.

With digital strategies becoming increasingly prominent, in this year's survey we focussed our questions more heavily on forward looking innovation and improvement opportunities around digital transformation, including BIM and the use of Artificial Intelligence. This has enabled us to share insights in those areas to improve project outcomes. It's positive to see more and more companies seeing and realising the benefit of a more proactive approach across these areas. As the analysis shows there is more work to do yet, along with a transition period to address underlying historical data quality issues, however the intent is clearly there and momentum is starting to build.

Continuing to underpin the ability to leverage these innovations and improvements however, remains the fundamental building blocks of good performance management and project controls: People, Process and Systems. Year on year industry feedback highlights that strength in each of these areas individually, although positive, still achieves uncomfortably low results. It is therefore critical that they are looked at together in an integrated manner, to maximise the likelihood of project success.

Bryn Lockett

Bryn Lockett
CEO

KEY TAKEAWAYS

Top 3 benefits of 4D planning

1. **CLASH DETECTION**
2. **BETTER SITE MANAGEMENT & LOGISTICS**
3. **COMMUNICATION WITH LEADERSHIP & PROJECT STAKEHOLDERS**

The uptake and effectiveness of BIM varies widely across different industries, but contractor organisations in construction are generally using it to best effect, seeing 75% improvements in project success rates with high BIM maturity. Read more on **page 9**

Capability and skills

2/3 of people believe their teams have all the skills required for the job

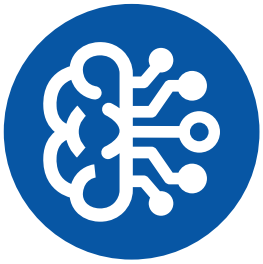
When organisations have a team of highly skilled people, they are 30% more likely to succeed. Read more on **page 12**

System integration

Projects with fully integrated systems are 2x more successful than project systems that operate in silos.

Organisations that place low importance on project controls are 1.4x more likely to use Excel to control costs and in turn see lower success rates than many of those that use dedicated cost tools. Read more on **page 15**

Artificial Intelligence



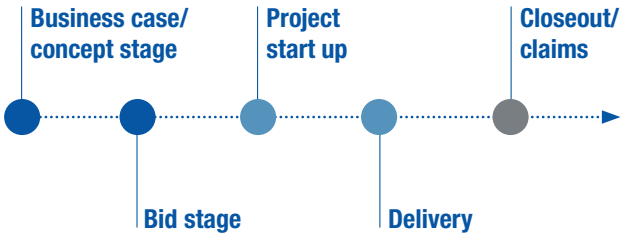
Respondents currently utilising AI are **2.4x more likely** to have a project controls team who have all necessary skills to perform successfully. Read more on **page 11**

Top 3 ways to improve process compliance

1. **IMPROVED COMMUNICATION**
2. **SIMPLIFICATION OF PROCESSES**
3. **CLEARER LEADERSHIP MANDATE**

Projects with a high level of process compliance are 2x more successful. Read more on **page 13**

Early engagement



Projects that implement and engage project controls at bid or concept stage are seeing **52% higher success** rates. Read more on **page 7**

PROJECT CONTROLS STATUS QUO

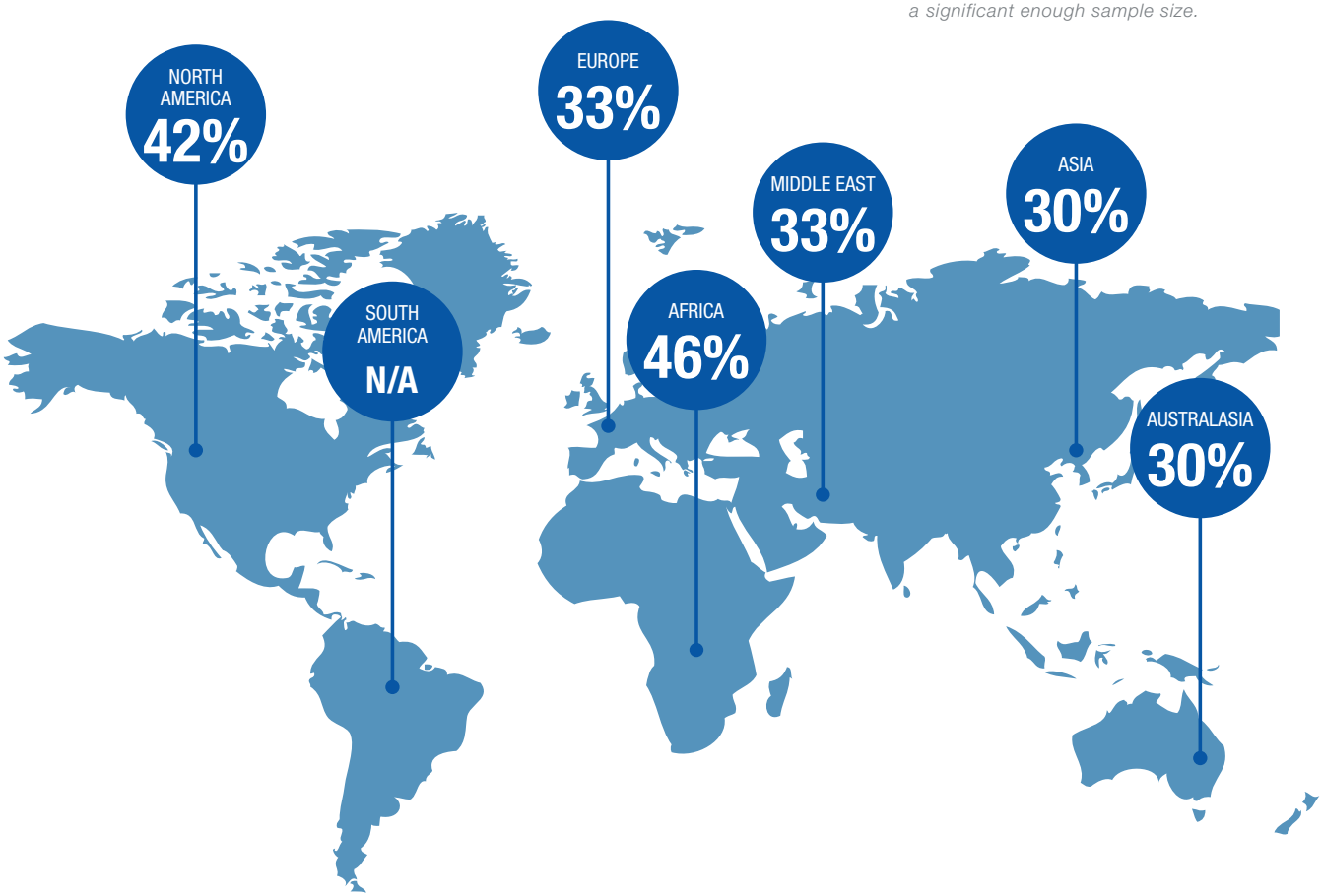
Overall Success Rate*

34% SUCCESSFUL PROJECTS

66% UNSUCCESSFUL PROJECTS

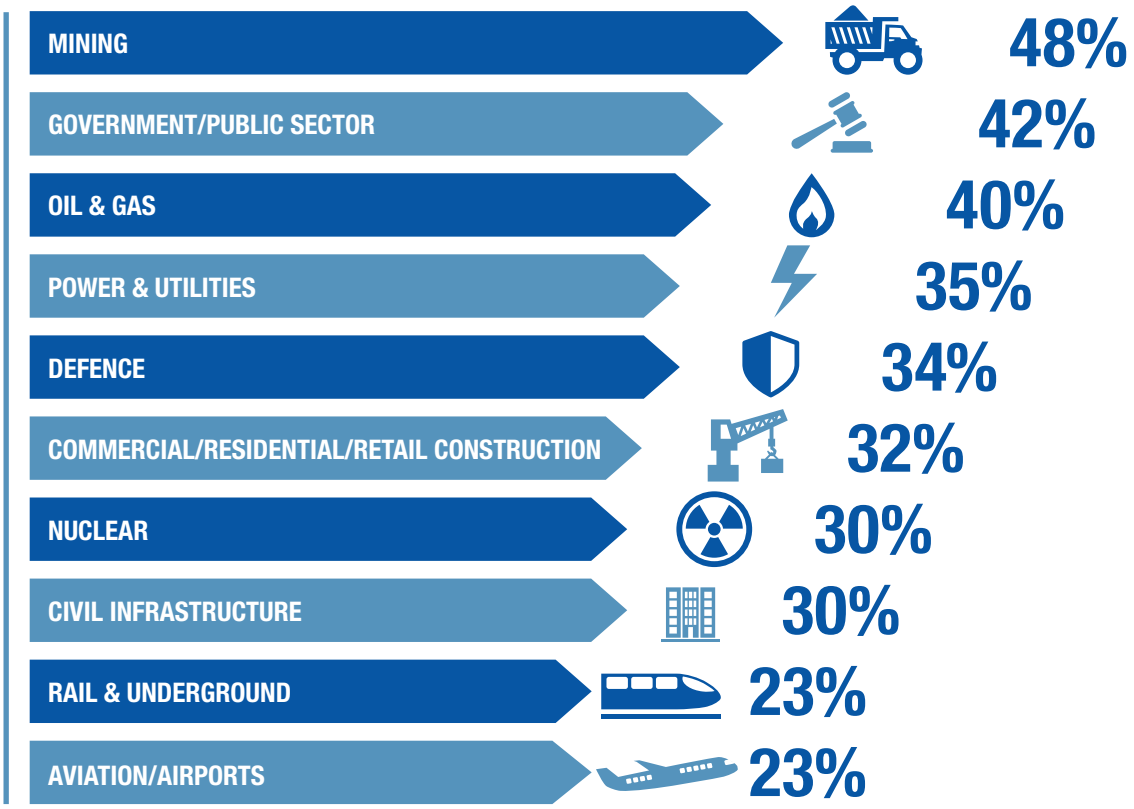
Success Rate by Location

Projects meeting all or most time, cost and quality objectives – calculated for regions with a significant enough sample size.

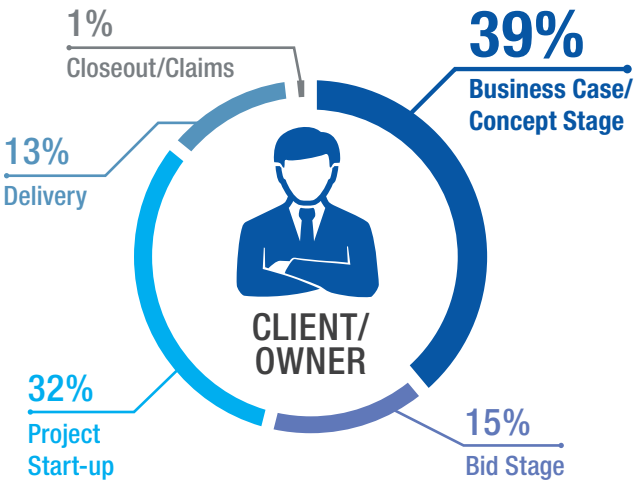


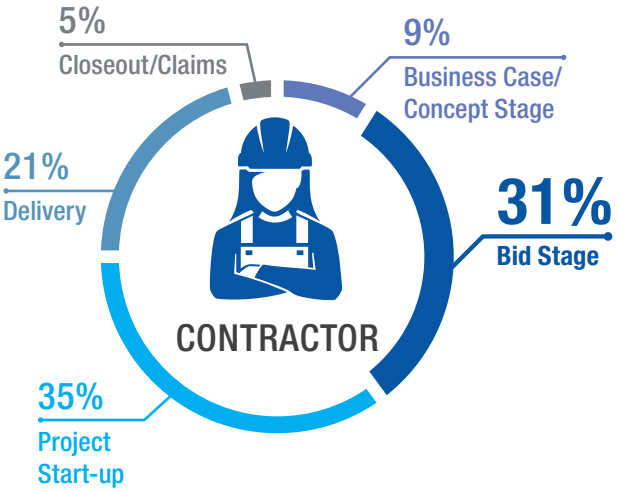
** This has been calculated by projects who have achieved all or most across time, cost and quality objectives. Those that met some, few or none across these objectives were considered unsuccessful.*

Success Rate by Sector



Lifecycle Stage of Project Controls Engagement





Project controls is most commonly engaged **within the early stages** of the project lifecycle for both clients and contractors, demonstrating that project controls is recognised as critical within the project lifecycle. Contractors are seeing the best rates of project success when project controls are implemented at bid stage whereas client/owners are seeing the best success rates at business case/concept stage. On average, projects are seeing 52% higher success rates when project controls is implemented at bid stage or earlier.

This is supported by the Infrastructure Project Authority* which advises that upfront investment will save money elsewhere. Organisations need to increase upfront investment on projects to increase the likelihood of project success.

* Infrastructure Projects Authority – p:24: *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/817654/IPA_AR_MajorProjects2018-19_web.pdf*

EMERGING TRENDS

BIM

BIM is a collaborative way of working that is enabled through digital technology and engages the whole project team in the production of information. In recent years BIM has become an essential process for facilitating the integration between design, construction and operations.

Projects can have varying degrees of BIM maturity, classified as the following:

NO BIM	Information is generated manually by hand.
LEVEL 0	Basic 2D Computer-Aided Design (CAD) use for minimal collaboration.
LEVEL 1	Use of 3D & 2D CAD for documentation and works information.
LEVEL 2	Models are shared between the project team using a common data environment.
LEVEL 3	Wholly integrated information model across the project, with the team working collaboratively in real-time.

Increased project complexity and the growing disparity between plan and execution has led to a need for BIM across architecture, engineering and construction industries. On a global scale **12% of surveyed projects** have Level 3 BIM maturity, and these projects are **30% more likely to achieve project success** across time, cost and quality objectives. In our experience, this results in operational benefits, such as improved asset management, thereafter.

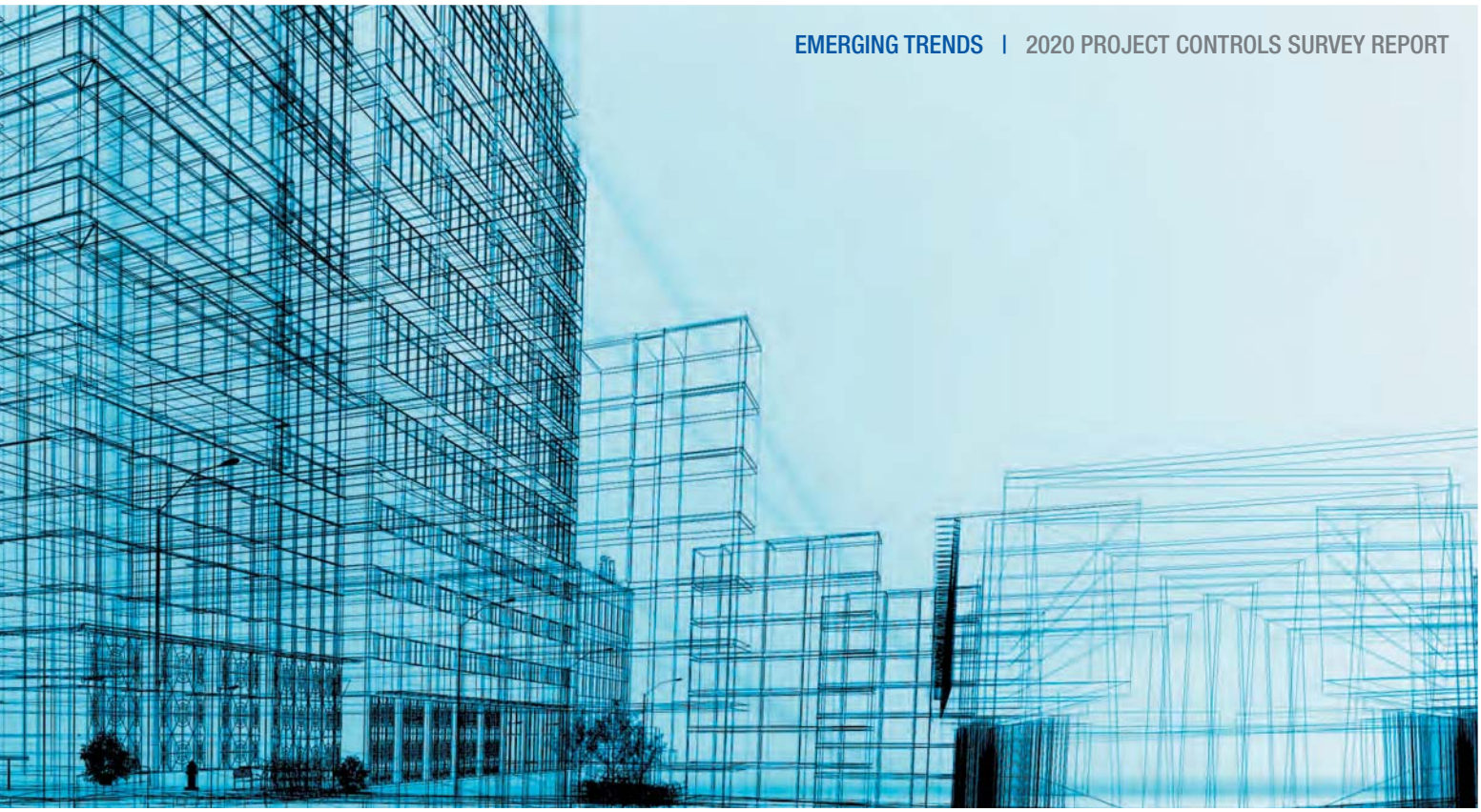
KEY FINDING

12% *of projects have level 3 BIM maturity*

Under-performing projects were **2.9x more likely** to have no use of BIM at all, another strong indicator of the benefits that effective digital collaboration can bring.

Some industries did see lower rates of success at **Level 3 as opposed to Level 2 BIM**, this could be explained due to the difficulty in achieving a **Level 3 BIM** environment in a complex major project setting with large numbers of parties feeding in to the Common Data Environment (CDE).

To keep progressing the level of BIM maturity, projects need to have a workforce ready to support and work with BIM. We can already see design companies changing the way they work, moving away from 2D drawings to complex BIM models supporting this transition into greater BIM maturity across projects. The evidence suggests this will lead to savings throughout delivery and beyond.



4D & 5D BIM

The increasing availability of BIM has facilitated the development of 4D planning, which combines 3D models with the dimension of time. 4D planning enhances the way we visualise project information, providing a more complete view of interactions and sequences of activities. It enables companies to visualise the project, and key deliverable therein, along the schedule timeline.

4D planning remains relatively unused with only **25% of respondents** utilising 4D planning in any capacity at all. Of those that don't currently use 4D planning, only **20% had no intention** to do so in the future which highlights the demand and use of 4D planning will keep increasing.

There are benefits for both contractor and client/owner organisations who use 4D planning, however, contractors are twice as likely to use 4D planning on their projects. This could be because clients are more consistently requiring contractors to demonstrate their capability, which 4D planning enables in a visual and easy way. Client/owner organisations who use 4D planning on a regular basis are seeing **52% higher success rates** and contractors are seeing **63% higher success rates** when using it on a regular basis. The regular use of 4D planning has a positive effect on project success across most industries, but most notably in the construction sector, where respondents who used 4D planning on a regular basis saw **75% higher average success rates**.

With the help of BIM, project teams can do their jobs with higher precision. Through trusting digital workflows, planners, cost managers/QS's and asset/facilities managers can all play their own roles in transforming the building process.

Top 3 benefits of 4D planning

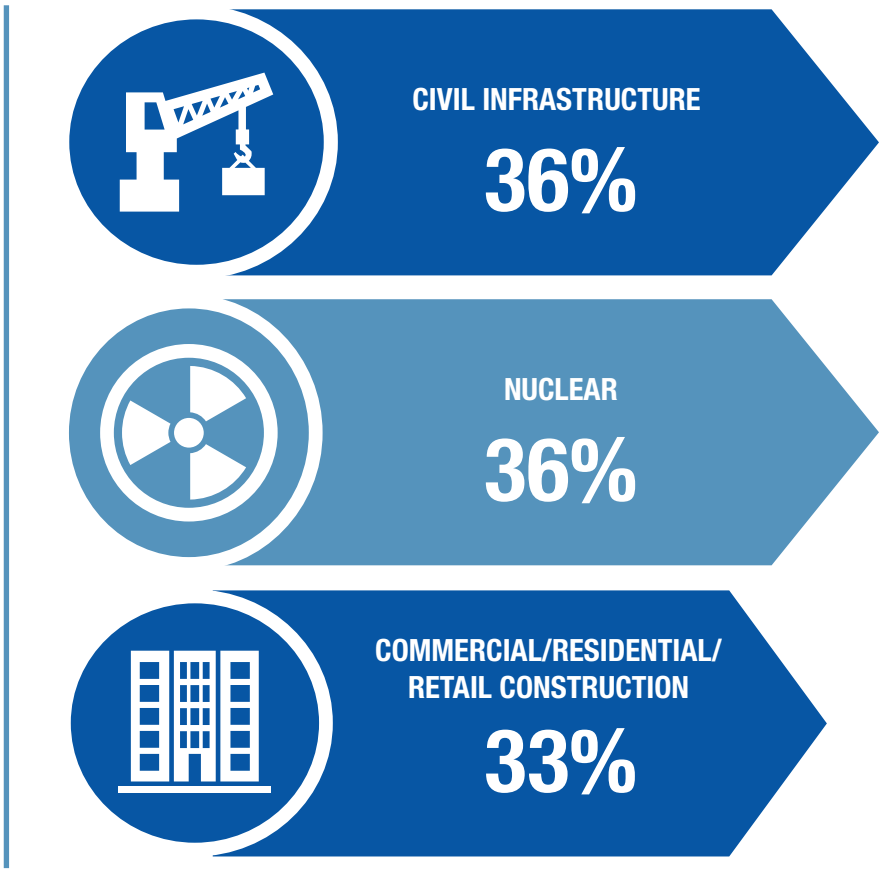
1. **CLASH DETECTION**
2. **BETTER SITE MANAGEMENT & LOGISTICS**
3. **COMMUNICATION WITH LEADERSHIP & PROJECT STAKEHOLDERS**

Organisations considering the adoption of 4D practices will need to think carefully about how they plan to utilise 4D planning and the specific benefits they expect to realise. Our survey indicates that lack of in-house expertise, the perceived cost of implementation, and lack of understanding of the benefits are the key factors holding organisations back. 4D planning is a collaborative process that requires frequent input from the wider project team and is not just a technical exercise undertaken by 4D specialists in isolation. As organisations grow a deeper appreciation of the process, they will understand that so long as they have effective planning and design teams, it need not be a costly exercise but one that will save them time and money and help them achieve their project objectives.

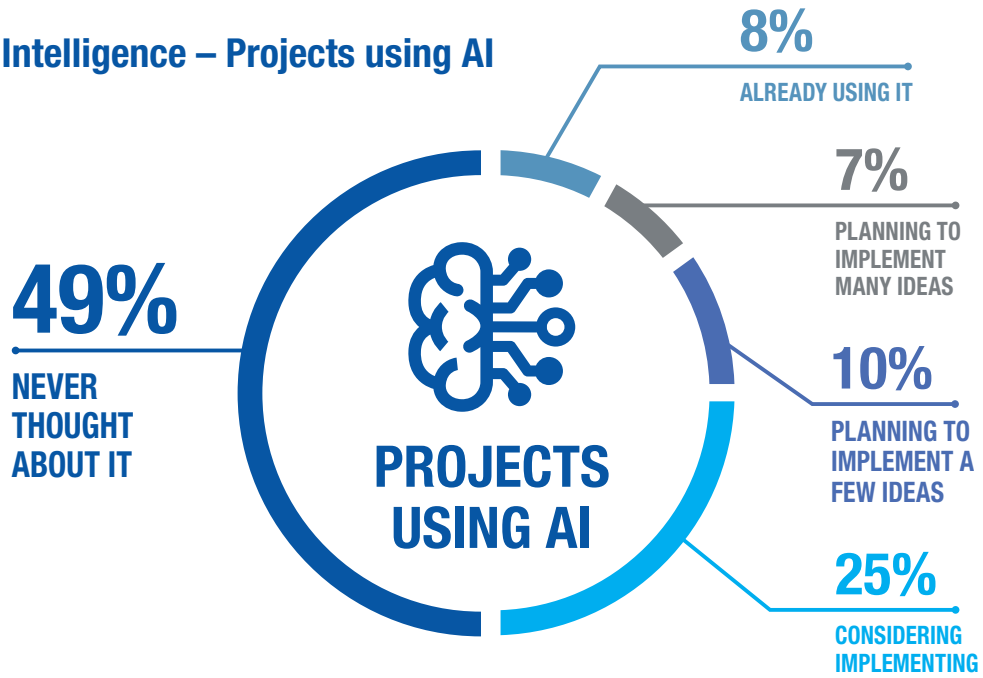
If you are working within or trying to engage with a client/owner organisation, then the strongest argument for the uptake of 4D planning is for the identification and mitigation of risks. Whereas contractors are more likely to be aligned with better site management and logistical benefits.

The advantages of using 4D practices have been highlighted above, but for those that are already using or ready to make the leap to 5D and 6D BIM, what further benefits are there that can be achieved? Through linking **cost** (5D) and **asset/facilities management** (6D) information to the model, project teams can significantly speed up the estimating process, report on costs & progress more easily, reduce human error and duplication of effort, hit sustainability targets, and build trust in project objectives just to name a few. In our experience, for a project to implement 5D or 6D BIM successfully, appropriate systems need to be implemented to support their integration. This is not always easy to do as people may be limited by their knowledge of what is possible which is where expert practitioners can assist.

Top 3 sectors using 4D planning



Artificial Intelligence – Projects using AI



MAIN BENEFITS OF AI

1. **INCREASED EFFICIENCIES**
2. **BETTER PREDICTABILITY**
3. **REDUCTION IN HUMAN ERROR**

BARRIERS TO AI UPTAKE

1. **LACK OF IN-HOUSE EXPERTISE**
2. **LACK OF UNDERSTANDING OF BENEFITS**
3. **COST/LACK OF FUNDING**

AI is an umbrella term for "smart" technologies that are aware of and can learn from their environments. But are we there yet? And what projects are using it already?

The Construction and engineering industry "remains severely underdigitized" according to research by McKinsey & Company* with very few in the industry that have the capability for AI.

Respondents utilising AI right now are 2.4x more likely to have a project controls team who have all necessary skills to perform successfully. They are also 2.4x more likely to have full integration across all project controls systems and tools on their project. Therefore, before considering AI, projects should ensure that they have fully integrated systems and processes first.

There is a surprisingly high 8% of respondents already using AI within project controls and 42% that claim they plan or aim to utilise it in the future.

Our belief is that Artificial Intelligence will have a large role to play in the future of major projects, however we have a transition period to go through in order to achieve that. The quality of what can be achieved with AI will only be as good as the quality of the data it draws on. We often see performance data being manipulated to present stakeholders a positive story, rather than the real picture, supported by action plans to resolve the identified issues. As a result, we need to go through a transition period where accurate data is captured and presented, such that we can leverage the power of AI and improve future performance thereafter.

Whilst AI is truly a promising development within the project controls industry, projects must consider their level of maturity before it can be a viable option. In fact, this plays out when we look at the typical profile of organisations that have implemented AI solutions to date.

* https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/artificial-intelligence-construction-technologys-next-frontier

PEOPLE

The people on a project are pivotal to project performance; you need the right balance of skill set and capability, as well as a positive company culture. Your executive decision makers' outlook on project controls is also critical. Without clear drive and direction from the Project Leadership Team innovation and implementation of tools and processes can be costly and ineffective.

TOP FOCUS AREAS FOR UPSKILLING

1. **COST & SCHEDULE INTEGRATION**
2. **PLANNING**
3. **PERFORMANCE REPORTING/ BUSINESS INTELLIGENCE**

We can see a shift from previous years where planning has been a consistent area of focus. This implies that we are transitioning into the future of project controls with data-driven business intelligence tools.

2/3 of people believe their teams have all the skills required for the job

When organisations have a team of highly skilled people, they are **1.8x more likely to succeed**. This demonstrates that investing in training to upskill the workforce is worthwhile and greatly beneficial for project success. This is easily said, but how can we make this a reality in 2020 and beyond?

As skills shortages becomes more of an issue around the globe, there is a need for organisations to think differently about how they improve capability within their businesses. Ensuring that the workforce is not only knowledgeable, but also one which is in tune with how an organisation applies that knowledge is a strong enabler of successful projects. This is often where training can benefit organisations needing to improve skills. In our experience, although theoretical knowledge is good, drawing on real life examples and experience of project and programme delivery globally has a more powerful impact for clients and is more effective in upskilling their teams.

KEY FINDING

*Only **50% of executive** decision makers indicated that their teams were highly skilled, lower than the **64% average** from the survey.*

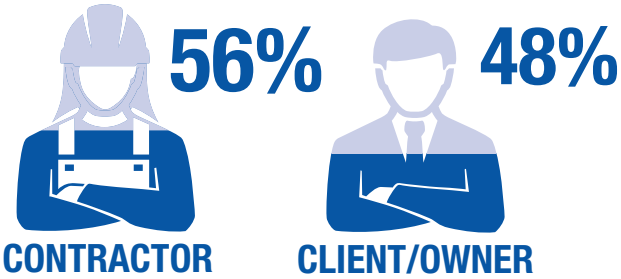
It is important to remember that although investment in people is important, the investment in processes that they run, and the systems and technology used all go hand in hand. When projects have confidence in all three of these key areas, this is where true success can be found.

PROCESSES

Having robust processes in place builds a solid foundation for projects. Creating processes is often the easy part, it is ensuring that there is full process compliance that is the most critical and challenging aspect of making them effective.

Even if every process is perfect, if there is poor process compliance then no benefits will be realised. Projects with a high level of process compliance were found to be **2x more successful**.

Process compliance by organisation type



We can see that in general, contractor organisations have higher levels of process compliance. This is often because contractor organisations are more efficiency driven as it directly impacts their bottom line. This means there is more time, money and effort invested in developing efficient processes and ensuring compliance with them. However, a compliance rate of just over 50% for both groups suggests there is still significant room for improvement.

Top 3 ways to improve process compliance

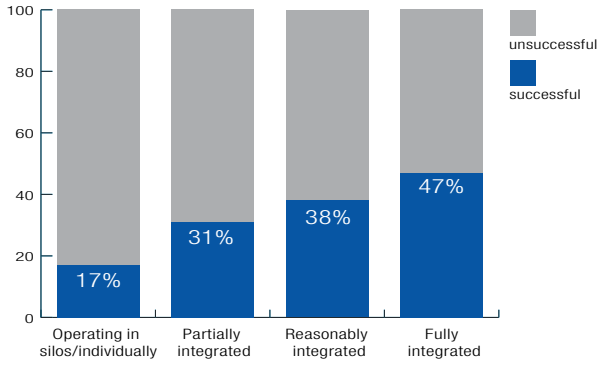
1. IMPROVED COMMUNICATION

2. SIMPLIFICATION OF PROCESSES

3. CLEARER LEADERSHIP MANDATE

Process integration

Not only should processes be robust, well established and have full compliance, but they also need to be integrated, which will lead to smarter ways of working and reduce the risk of project failure. Presently, only **47% of respondents report** the use of integrated processes. However, those with fully integrated processes are 2.8x more successful than those in silos.



Even projects that have full process integration are still underperforming generally. This supports the importance of having both process compliance and integration to drive greater efficiency and overall success.

SYSTEMS

System adoption is important because it supports business process and compliance, including their creation, improvement, and refinement. System adoption also organises, validates, governs and assures ways of capturing important business data. Getting the right systems in place will have a major impact on projects performance. Effective and efficient Management Information Systems are a critical enabler for organisations to empower their management teams with a forward looking, focused approach.

In our experience, although it is beneficial to draw on extensive experience of what works in practice, the project's individual needs must not be overlooked as there is never a 'one-size fits all' solution.

By using robust and dedicated systems to underpin and ultimately improve the processes and data capture in an organisation, it will lead to more efficient operations, communication and decision making. It allows information to be readily available, easily accessible and trusted.

Top 3 ways system adoption can be increased

1. Increased understanding of the benefits
2. Increased level of user expertise
3. Buy in from leadership/ management

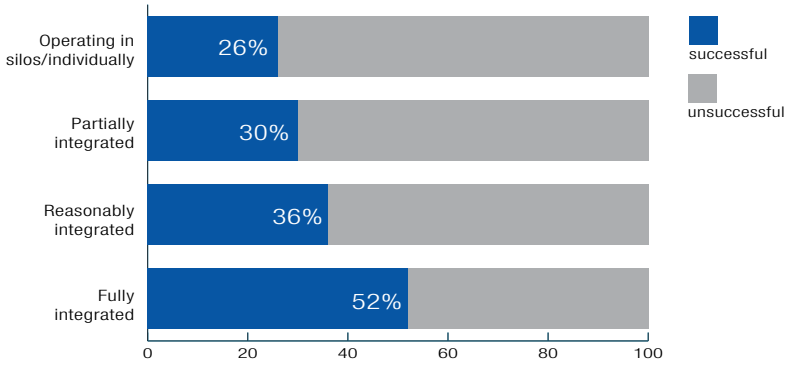
These improved efficiencies will produce significant and tangible business benefits including savings in both time and money. Also, by having access to more comprehensive and high-quality data it will facilitate more informed and agile decision making and help in the progression of emerging trends like AI which requires good quality data.

Getting the correct systems in place is vital but must also be considered in relation to the people on the team and the processes on the project, as successful projects need to be made up of all three components. Organisations must ensure they take the correct measures to bring their team on board and that they are equipped with the skills and confidence to use the systems.

Organisations that place low importance on project controls are **1.4x more likely** to use Excel to control costs and in turn see lower success rates than many of those that use dedicated cost tools. This demonstrates that the perception of project controls can be an important factor in system adoption. Excel, while a useful and versatile tool, can hold companies back in comparison to more advanced system capability and integration potentials, in addition allowing greater data manipulation and potentially falsifying the performance story.

When projects focus on the people, processes, systems, and the integration between them, project controls functions can accurately predict and influence the time, cost and quality aspects of the project, ultimately leading to project success.

System Integration



SURVEY RESPONDENTS

1,029 PARTICIPANTS

15+ INDUSTRIES

65 COUNTRIES

12% EXECUTIVE DECISION MAKERS

Respondent Organisation Type

CONTRACTOR **42%**

CLIENT/OWNER **22%**

CONSULTANCY **30%**

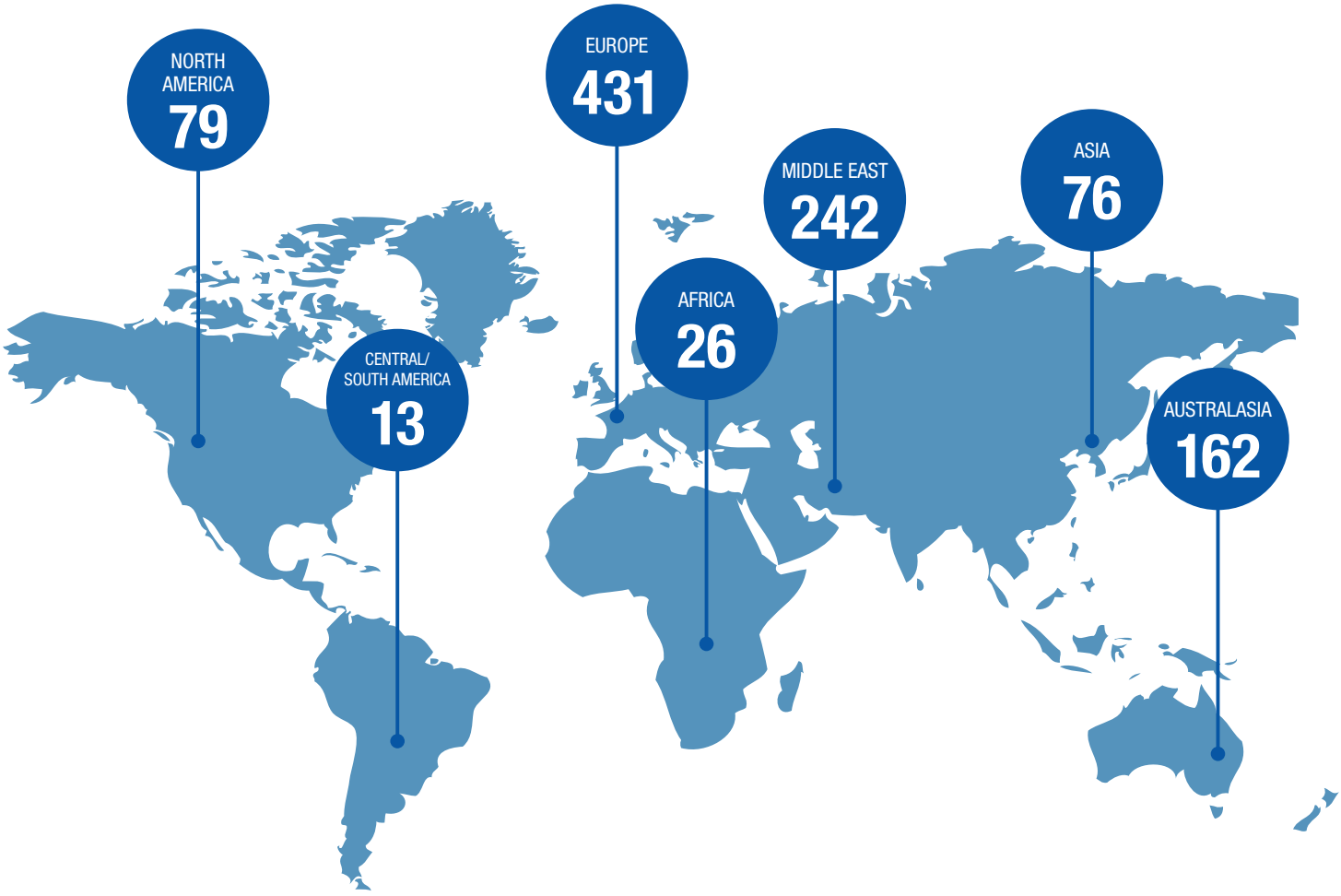
FREELANCE/ SOLE TRADER **4%**

OTHER **2%**

Top 5 Respondent Function

Project/Programme Controls & Reporting	31%
Planning/Scheduling	31%
Project/Programme/Portfolio Management	16%
Construction Management	4%
Commercial/Quantity Surveying	3%

Number of Respondents by Region



Charity Donations

Thank you to everyone for completing the survey. As an incentive we promised to ***pay £1 (or currency equivalent) to your selected charity****. We have donated the following on behalf of our respondents:*

MentalHealth ResearchUK	Beyond Blue	Save the Children	Australian Red Cross
£245	**£160**	**£317**	**£307**

ABOUT LOGIKAL

Founded in 2002, LogiKal is a strategic project management consultancy passionate about driving performance improvement through integrated project controls and PMOs. We provide intelligence, experience and industry insights in order for our clients to improve performance, reduce cost, mitigate risk and derive greater value from their projects. We specialise in assembling highly skilled teams working with clients in all industries and at all stages to set up projects for success.

We have won multiple awards for our work, including being named the Global Project Controls Consultancy of the Year.

LCA LONDON CONSTRUCTION AWARDS 2019 WINNER ENGINEERING CONSULTANT OF THE YEAR

Project Controls EXPO Awards GLOBAL PROJECT CONTROLS CONSULTANCY OF THE YEAR 2020

New Civil Engineer 100 COMPANIES OF THE YEAR 2019

We offer a range of services including **advisory, information management, managed services, and training** to help our clients' projects succeed. We think and act as partners, not suppliers, aligned and committed to the same end goal as our clients. We leverage our in-depth project controls expertise in delivering services and producing solutions that are innovative, practical, and genuinely useful drawing on our experience on world leading projects, globally.

To enhance industry capability, we also provide coaching, training and professional development services. This ranges from accredited to non-accredited specialist skills courses, necessary to deliver everything from small to complex projects.

If you would like to set up a meeting with us to discuss the data in relation to your project or organisation, contact us.

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OUR TEAM, CLIENT FOCUS, AND INNOVATIVE USE OF TECHNOLOGY ARE AT THE HEART OF OUR SUCCESS

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