LOGIKAL
Project Intelligence

2018 Project Controls
Survey Report

2018

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As a passionate advocate of project controls and the benefits they bring to the performance and outcome of any project, large or small, I'm pleased to see an increasing acceptance of this across the geographies and industries which took part in LogiKal's 2018 Project Controls Survey.

The journey to a world where project controls are consistently used to effectively improve project performance and deliver successful outcomes will take time. These 2018 results show an improvement in maturity since we published our initial survey results in 2016, which is positive, whilst also recognising that as a profession there remains more to do. This survey report seeks to highlight improvements and provide a perspective on challenges so as to share learnings and help industry improve accordingly.

Improvement is occurring and our results imply that where improvements occur, it is driven by senior leadership of forward-looking, end client organisations and more mature organisations within the supply chain seeking to realise the benefits of project controls. I believe the positive change we are seeing is strongly influenced by people and organisations who have seen the benefits of project controls first hand, showing the value of experience across project, industry and geography. Professional groups including the Major Projects Association, Infrastructure and Projects Authority, Association for Project Management (APM) and Project Management Institute (PMI) continue to influence improvement also through the sharing of learning and best practice internationally.

We predict project controls will become more central to modern projects globally as the benefits become easier to validate and quantify, mirroring advancements in data analytics and business intelligence systems. Skills and experience in these areas are already in demand. This demand will be further compounded with increasing government infrastructure spend, the drive for greater transparency and efficiency in highly regulated sectors such as utilities, and an increasingly positive outlook for the mining and the oil and gas sectors. As a result, we will need to think smarter about where we find these skills and how we deliver project controls and projects as a whole.

Developing project controls skills in addition to leveraging skills that already exist will be critical to addressing increasing demand and we must look at innovative ways to achieve this. Although the survey indicates that the skills of our teams are improving, it also highlights a need to improve capability further, so we must all look to do more. There is a real opportunity to address the ongoing gender diversity gap as part of this process.

We clearly see that a balanced workforce is key. To attract more women into the profession, whether through graduate intakes or by creating opportunities for them to cross over from other project disciplines or other professions and industries altogether, we need to look closely at how diversity policies are put into practice. Our results demonstrate that a gender-balanced workforce is more likely to succeed so projects are likely to get good returns when investing to achieve it.

In addressing efficiency, the integration of project management systems to improve data validation and predictive analysis was seen as the most highly ranked development for project controls by respondents. This is underpinned by the results also showing there is an ongoing use of management systems which aren't sufficiently robust for the complexity of the projects and data they are managing. There will be more development and innovation in systems as interest grows in areas such as Artificial Intelligence and machine learning though this will take time as advancements in technology prove themselves, gain greater visibility in the industry and become more affordable. Improving the robustness, integration, automation and efficiency of existing project management systems will provide significant returns, and is therefore a natural first step.

Thanks again for your involvement and contribution to this year's Project Controls Survey. We highly appreciate everyone's contribution year on year and are pleased to see a stronger level of involvement this year yet again. Your responses continue to assist us in moving industries and regions forward, communicating project control improvements and benefits alike to help facilitate their adoption more broadly. Together we are continuing to de-risk delivery through improved project intelligence and decision-making.

Until next year,

Bryn Lockett
CEO

INTRODUCTION

Since 2015, LogiKal's annual project controls survey has measured the use of project controls and the maturity of project management systems, analysing their impact on project success. Last year, our survey investigated the underlying reasons for organisations to invest in increasingly robust project controls solutions, and conversely for not doing so.

The 2017 survey revealed clear views that:

- There is a growing degree of importance attached to project controls (a 4 percentage point rise from our 2016 survey) and an increasing association with project success.

- Organisations that recognise project controls as a profession achieve better project outcomes.

- Lack of direction and support from management is a major issue affecting project controls maturity.

- Performance information is not being used constructively to manage the delivery of projects. This is despite a 68% success rate for organisations that did use performance information to manage project delivery versus a 7% success rate for those that didn't.

This year we touch on diversity and innovation in the industry. This is in addition to our usual survey areas which enable us to benchmark against previous results and measure improvement, or otherwise, in the use and effectiveness of project controls throughout various industries.

We received a record number of responses this year and would like to thank all who contributed once again to this invaluable piece of research. We encourage you to share this report with colleagues across the industry and welcome any discussions based on our findings.
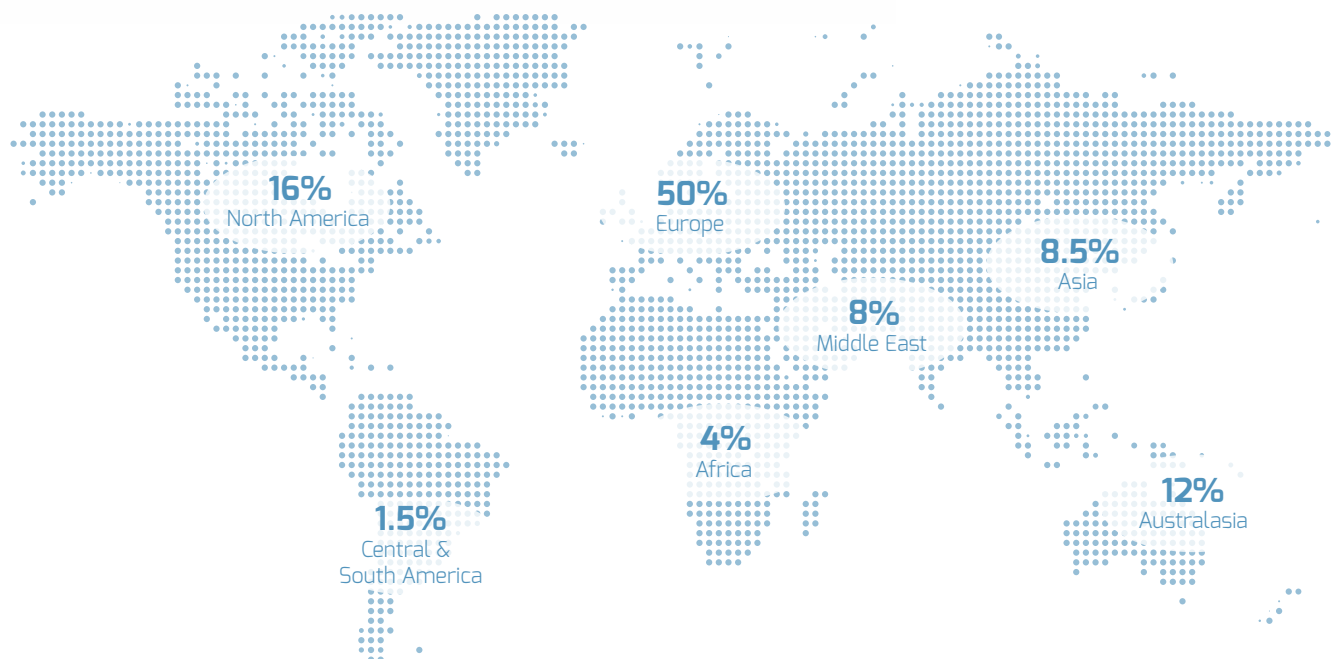
SURVEY AT A GLANCE

Participants

11+
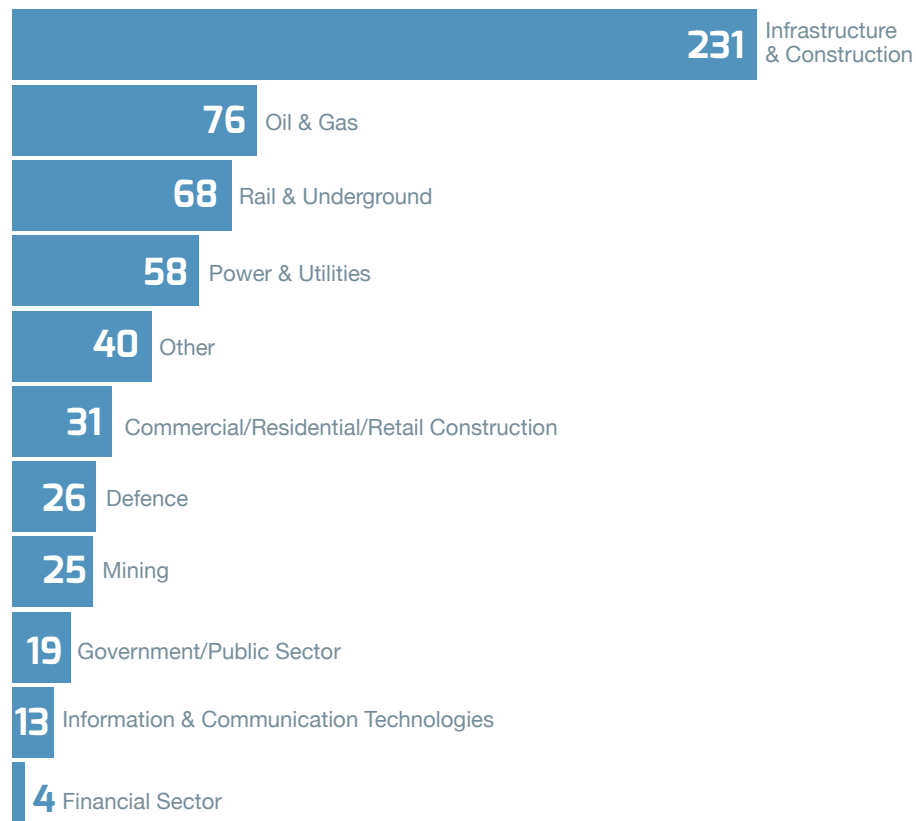Industries

591
Participants

7
Regions

16%
North America

50%
Europe

8.5%
Asia

8%
Middle East

4%
Africa

12%
Australasia

1.5%
Central &
South America

EMPLOYMENT TYPE

23%
Client

37%
Contractor

35%
Consultant

5%
Other

PARTICIPANTS BY INDUSTRY

231	Infrastructure & Construction
76	Oil & Gas
68	Rail & Underground
58	Power & Utilities
40	Other
31	Commercial/Residential/Retail Construction
26	Defence
25	Mining
19	Government/Public Sector
13	Information & Communication Technologies
4	Financial Sector

KEY FINDINGS

- The vast majority of respondents (88%) indicated that their organisation regards project controls as important, very important or critical, in line with last year's findings.

- Once again from a project controls perspective, lack of commitment from management and leadership has proven to be a key blocker to project success and is a critical area we must address.

- Skills are improving and are strongly linked with project success – 65% of respondents reported an increase in the capability of their teams over the last two years and those with capable teams reported much higher project success rates.

- Process and Compliance were strongly linked with project success – our respondents reported a six times greater project success rate than those with little or no process compliance.

- There has been little change in project controls systems over the past two years. The tools used by our respondents are more or less the same and levels of full integration are identical to those reported in our 2016 survey. The majority of respondents cited integration of management systems as the most important upcoming development in the industry over the next few years – a positive trend as the field matures.

- Increased diversity within project controls teams has been shown to have a significant impact upon ratings of project controls effectiveness and positive project outcomes.

- Analysis revealed that those that adopted Building Information Modelling (BIM) were more likely to report higher than average success rates. They also reported greater levels of improvement in the effectiveness of their project control processes.

Skill Increase

65%
of respondents reported
an increase in the capability
of their teams over the last two years

Project Success

3x
greater project success
rate for fully process
compliant projects

Attitudes

88%
of respondents regard
project controls
as important, very
important, or critical

Processes

6x
greater project success
rate for businesses with
well drafted and well-
integrated processes
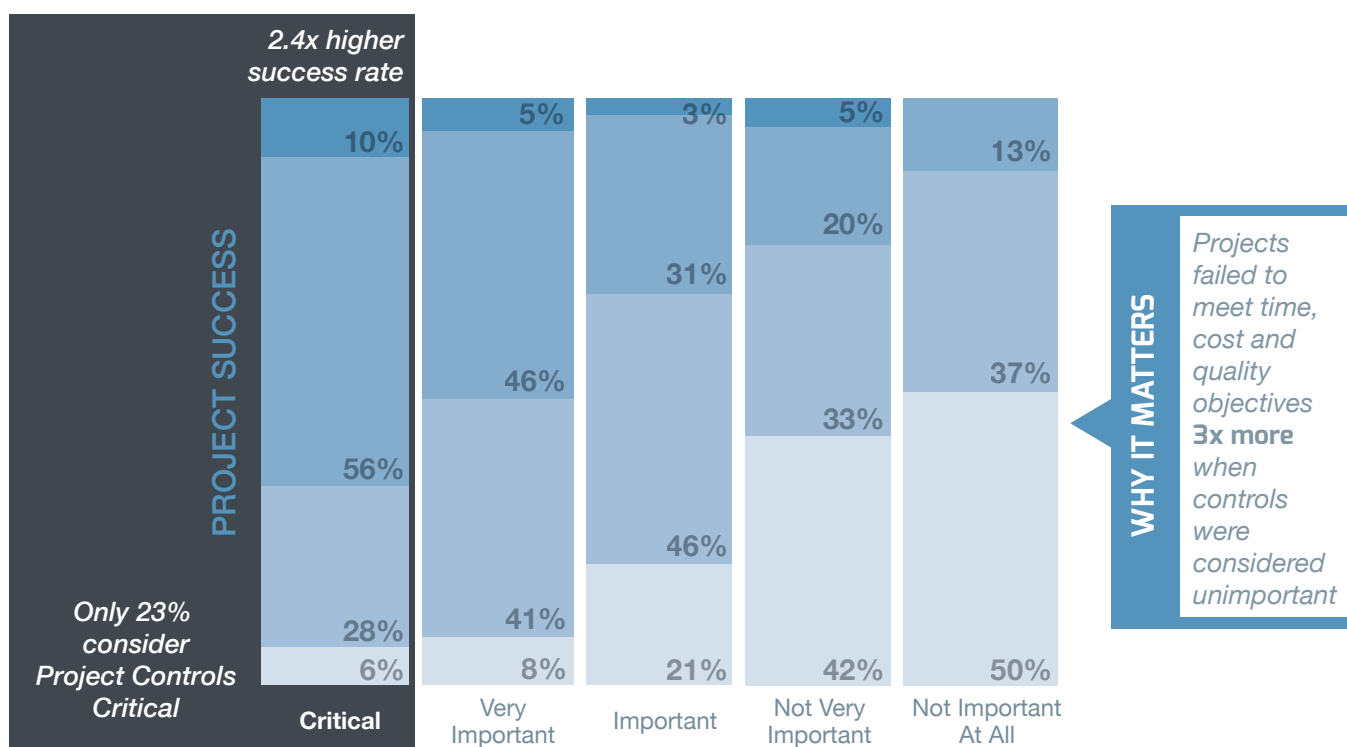
PERCEPTION OF PROJECT CONTROLS

Importance of Project Controls

This year, 88% of respondents said that they perceive project controls as 'important', 'very important' or 'critical' with less than 2% of respondents believing it to be 'not important at all'. Tellingly, half of those who perceived project controls as 'not important at all' stated that their projects generally failed. Mining came out on top, with 96% of those in the industry valuing project controls as at least 'important', which was almost double
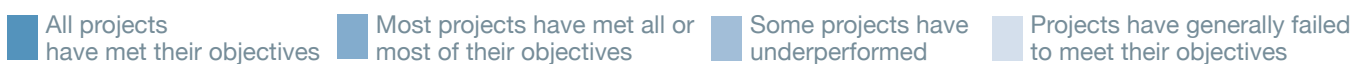
that of government and public services sectors valuing controls the least at 53% of those surveyed.

What is most striking is the relationship between the perception of project controls and project objectives achieved when it comes to time, cost and quality. Those that perceived project controls as 'critical' were twice as likely to have all project objectives met while those that perceived project controls as 'not important at all' were more than three times more likely to fail.

PROJECT SUCCESS AS A FUNCTION OF THE IMPORTANCE PLACED ON PROJECT CONTROLS

2.4x higher success rate

Only 23% consider Project Controls Critical

PROJECT SUCCESS

	Critical	Very Important	Important	Not Very Important	Not Important At All
All projects have met their objectives	10%	5%	3%	5%	13%
Most projects have met all or most of their objectives	56%	46%	31%	20%	
Some projects have underperformed	28%	41%	46%	33%	37%
Projects have generally failed to meet their objectives	6%	8%	21%	42%	50%

WHY IT MATTERS

*Projects failed to meet time, cost and quality objectives **3x more** when controls were considered unimportant*

IMPORTANCE OF PROJECT CONTROLS

■ All projects have met their objectives   ■ Most projects have met all or most of their objectives   ■ Some projects have underperformed   ■ Projects have generally failed to meet their objectives

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Effectiveness of Project Controls

Twenty percent of respondents believe controls are highly effective in their businesses, an improvement of 4% from our 2016 survey. Only 16% of respondents surveyed believe project controls are ineffective in their organisations.

Eighty-four percent of respondents regard their operation of project controls as at least 'generally effective'. However, one-third of this group identified that their controls systems had a gap which they felt should be addressed.

Our review of how people use and integrate systems suggests that this is closely linked to the type of systems they choose to manage cost, time and risk on projects, as well as how well these systems are integrated.

Impact of Project Controls on Project Outcomes

Based on respondents' recent project experiences, the 2018 survey results indicate a strong relationship between the effectiveness of project controls and the success of projects. There is a clear trend validating the sentiment that businesses that place a higher value on controls are more likely to meet their project objectives. Notably, organisations that place critical importance on project controls are twice as likely to succeed.

In a breakdown of project success by region (where success is considered as meeting all project objectives), the North American and Asian markets enjoyed the highest project success rates. Projects in Australasian markets which met all their project objectives all had well-drafted and well-integrated processes. These projects all came from the oil and gas and government/public sectors.

Central/South American and Australasian regions showed the greatest room for improvement with 50%

of those in Central/South American and 32% of those in Australasian regions stating that project controls needed at least significant improvement. In Australasia, this was most evident in infrastructure and construction as well as rail and underground markets.
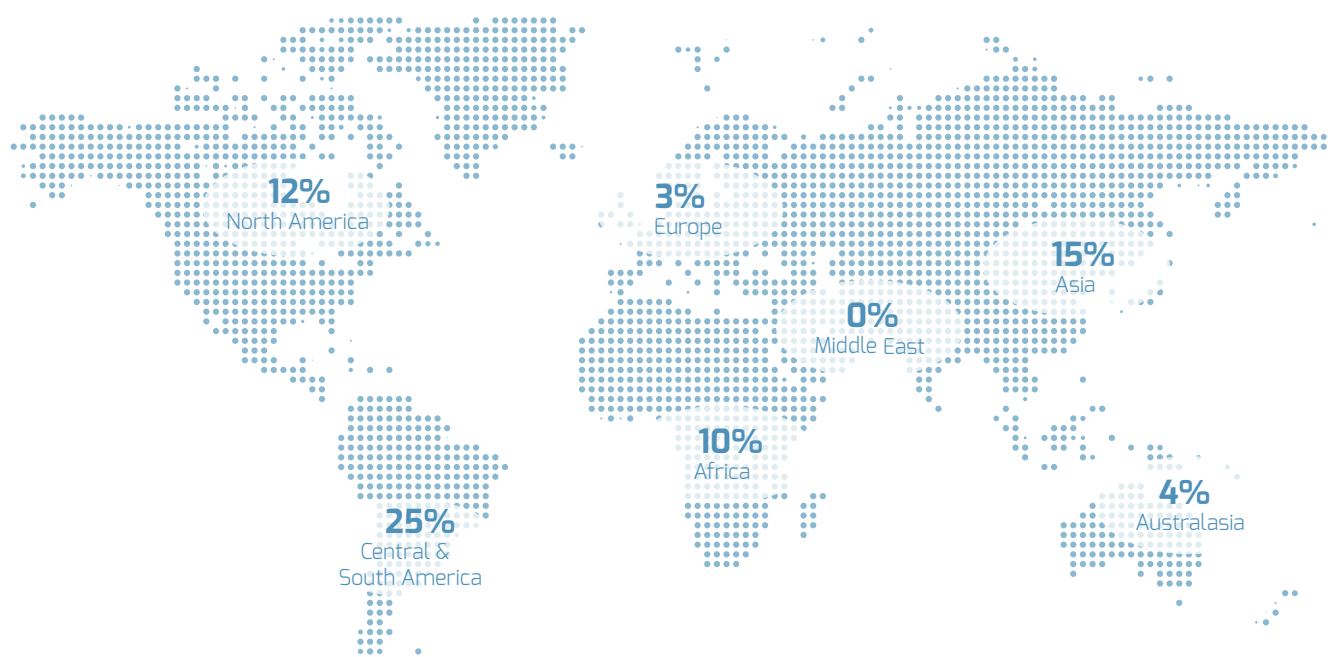
Projects are more likely to face unsuccessful outcomes when organisations perceive controls as unimportant, failing to meet time, cost and quality objectives at a rate three times higher than the global average. The failure rate was equal when project controls were perceived as being weak or ineffective.

In industries where projects are complex, such as those seen in rail and defence, or where there is a low level of maturity in the supply chain, projects are most impacted by ineffective project controls. This year, we saw this most in mining, energy and ICT, suggesting that strengthening project controls could improve project ROI as well as the likelihood of success in these sectors.

Perhaps unsurprisingly, respondents from consultancies reported higher levels of project controls effectiveness and project success over those from client and contractor organisations.

GLOBAL PERFORMANCE STILL IN INFANCY
Percentage of projects achieving all time, cost and schedule objectives

12%
North America

3%
Europe

15%
Asia

0%
Middle East

25%
Central & South America

10%
Africa

4%
Australasia

PROFILING PROJECT SUCCESS

In 2018 we saw a 50-50 split between those respondents whose projects performed well, and those who saw considerable underperformance. While we can't bottle project success, we can learn from the experience of others, emulate their achievements and avoid their mistakes. We've put together this profile of the top and bottom performers.

40.93% Projects have met **most of** their objectives

37.99% Projects have **underperformed** against their objectives

5.39% **All** projects have **met** their objectives

15.69% Projects have **not met** their objectives
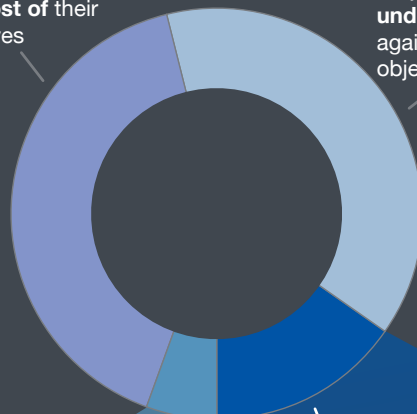
PROCESS CONTROLS WERE RATED AS CRITICALLY IMPORTANT IN 42% OF PROJECTS THAT MET ALL PROJECT OBJECTIVES

	SUCCESS	FAILURE
WELL DRAFTED PROCESSES	70%	5%
FOLLOWED PROCESSES TO THE LETTER	22%	5%
FULLY INTEGRATED PROJECT CONTROL PROCESSES	35%	6%
CARRIED OUT FREQUENT COMPLIANCE CHECKS	48%	29%
PEOPLE HAD ALL THE SKILLS NECESSARY TO CARRY OUT THEIR FUNCTIONS	30%	9%
PROJECT TEAM'S SKILLS WERE POOR	0%	21%
USED BUILDING INFORMATION MODELLING (BIM)	21%	2%

Key Improvement Factors and Project Outcomes

We asked respondents to tell us the top three factors that they believed were likely to have the most significant influence on improving the overall effectiveness of project controls within their organisation. Out of the nine factors we looked at, the five that ranked highest are shown in the image below.

Management commitment, integration, and leadership were by far the most highly ranked factors. Training was ranked a close fourth, indicating that up-skilling teams in key disciplines and tools could positively impact day-to-day operations. Supporting this, recruitment remained the least influential factor. This adds weight to the argument that the project controls discipline is faced with a skills shortage rather than a labour shortage.

It is well understood in project management that strong leadership aligns, influences and empowers people and teams to achieve success. Without it, projects can struggle.

Where projects were generally failing, the top three improvements needed were all people related issues, i.e. more senior management commitment, better functional leadership, or changes to recruitment and operational personnel.

Where organisations had projects meeting most or all of their project objectives, executive support became less important than the integration of tools and processes. Overall there is a stronger emphasis on the need to improve tools, processes and training.

WHEN IT MATTERS

60% of respondents with failed projects ranked executive support as the most significant factor in improving project controls effectiveness.

This reduced to 45% when projects were succeeding, where improving processes and integration became more important.

TOP 5 FACTORS TO IMPROVE EFFECTIVENESS

1	Management Commitment	54%
2	System and Tools Integration	48%
3	Functional Leadership	35%
4	Training	33%
5	Processes	27%
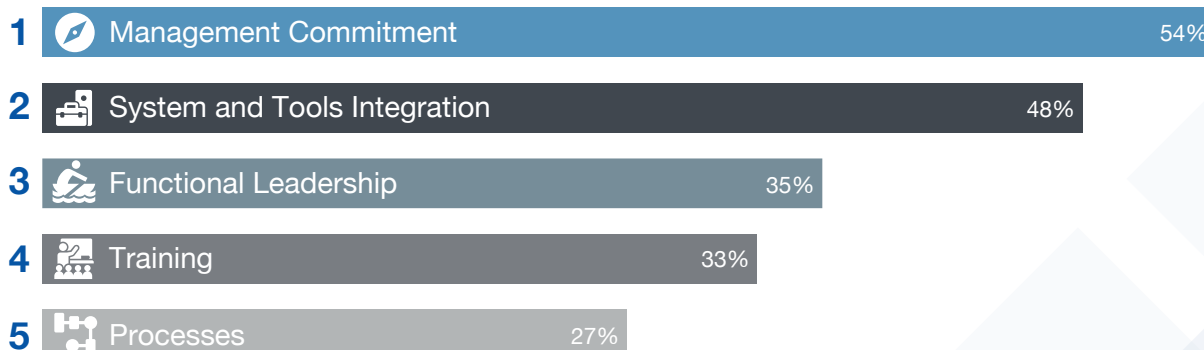
Project Controls Skills

Effective controls are highly dependent upon a team of specialists having the correct skills and capabilities. There is a clear relationship between controls skills and the success of a project. This is illustrated in the survey by a strong correlation between higher levels of skills and better project outcomes. If standards are poor, the project is more likely to have failed to meet its objectives.

It is evident that the project controls industry has ample room for growth and development. Over the past few years, we have seen high turnover within an over-heated market for project control specialists. This allowed a large number of people with mediocre skills to rise in rank. Whilst we saw a slight reduction in the number of teams with a 'mixed bag' of skills, this group still accounted for 44% of people in projects controls. One respondent highlighted that a high turnover of staff in their organisation prevented learning from past experience.

To understand how the industry is changing we asked how much people's project controls skills within organisations had changed over past two years - 65% stated that their skills have improved with only 6% stating that they have deteriorated.

Our results also identified a considerable skills gap in the controls industry with over half of respondents reporting their team have mixed or weak skills. Only 12% believed their team had all the skills necessary to perform their functions successfully. This is consistent with project controls being an emerging profession, currently developing inside many organisations.

WHY IT MATTERS

Projects failed **6x more** than the global average when skill standards were poor

12% believed they **had sufficient skills** in project controls

65% believed their **skills improved** in the last 2 years

Diversity

As part of our 2018 survey, we included a number of questions on diversity. We were interested to see whether the current focus on diversity in hiring, in particular gender diversity, was reflected in the project controls field.

Interestingly, our respondents reported little difference in the promotion of diversity across industry and organisation type (contractor, client or consultancy), with 93% of respondent organisations promoting diversity in the workplace. However, there were some marked differences when differentiating by region. Our respondents from the UK and APAC regions reported diversity promotion rates of 95% and 93% respectively. Across the Middle East, Africa and Central/South America, this figure was 74-75%.

When asked specifically about gender diversity, a similar pattern emerged. There was little difference across industry, but there were some noticeable differences by organisation type. Our respondents from contractor organisations reported that their organisations were less likely to promote diversity and had less gender diversity in their project controls teams when compared to those from consultancy and client/owner organisations.

While diversity is strongly promoted in most organisations, the survey showed that most industries have not yet achieved any significant measure of gender diversity within project controls teams. There was however, a strong correlation between gender diversity and project outcomes where a more balanced approach reflected a higher likelihood of project success. The degree of gender diversity may also be an overall reflection of better organisational culture and focus on personal skills and development.

Defence came out as the leader in diversity with the greatest gender balance. The industry is twice as likely to have teams made up of between 40-60% women than the global average.

In historically male-dominated fields like commercial/residential/retail construction, 7 out of 10 respondents reported fewer than 20% of their team-mates were women. Likewise, regions with male-dominated cultures did not demonstrate gender diversity. The least diversity was seen in the Middle East with 75% reporting fewer than 20% women in their teams. Despite this, those reporting a greater gender balance in the Middle East experienced similar trends in project success as the global average.

These results are encouraging as we believe they present a clear case of the benefit in going beyond just promoting gender diversity. To build a strong culture that looks to a broader talent pool, organisations will likely need to take a closer look at their recruitment practices and how well they align with the diversity policies they promote.

The process businesses undergo to integrate their systems usually requires detailed scoping and development of documentation before and after implementation. Going through this process in itself can often drive businesses to review and revise their processes so that the systems can better support their operational objectives. For this reason, we would reasonably expect that the greater the level of integration, the better the quality of processes will be, and the more consistent the project results.

Process Integration and Project Outcome

Integration of project control processes ensures consistent capture and presentation of data, making it easier to interpret the data and identify anomalies and errors. By assessing the interaction between process integration and the outcome of a project, we can determine the relative maturity of project controls within an organisation.

While only 8.4% had fully integrated processes, this number is three and half times the number in reported in 2016 (2.4%). One-third reported their processes were reasonably integrated. Almost two-thirds (59%) of respondents felt that their control processes were only partially integrated or operated in silos.

Closer examination of this top 8% reveals that when project controls processes are fully integrated, project outcomes are more likely to be successful – 57% of projects met all or most of their objectives and 24% met all objectives, totalling 81%.

In comparison, 64% of projects underperformed or failed when delivered by organisations without integrated project control processes or with project controls performed in isolation. This demonstrates that lack of integration decreases the likelihood of project success. Respondents from these organisations ranked senior management commitment and better functional leadership as more important than integration when it comes to improving project controls. This makes sense when considering that effective system implementation and integration starts with strong leadership to drive the culture these systems support.

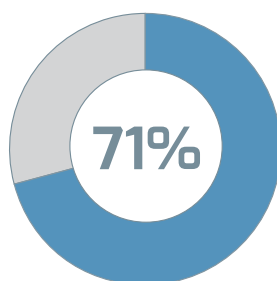### PROJECT CONTROLS INTEGRATION BREEDS PROJECT SUCCESS
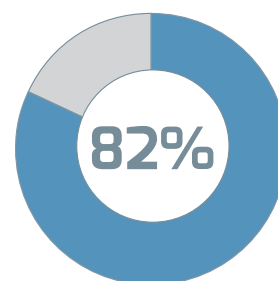Of those that were fully integrated:
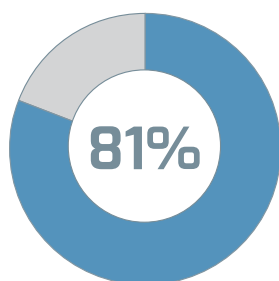
81%
met all or most of their project objectives
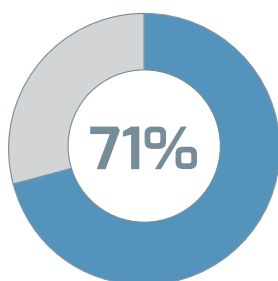
71%
believed they had most or all of the project controls skills they needed to be effective

71%
mostly or always used the information that the project controls team produced

82%
believed project controls could predict project outcomes most or all of the time

Process Quality and Project Outcome

Respondents gave a quality rating out of 10 to nine key project controls processes. Overall, there doesn't appear to be a huge variation in process quality scores, with the average being a mediocre 6 out of 10. Closer inspection revealed that successful projects did, in fact, give higher quality scores for their processes than unsuccessful projects. This reinforces the inherent connection between project success and mature project controls.

When processes are well-drafted and well-integrated, success is five times more probable. These findings echo our 2016 survey, showing a significant leaning towards higher process quality for successful projects. Respondents in this top category rated their level of
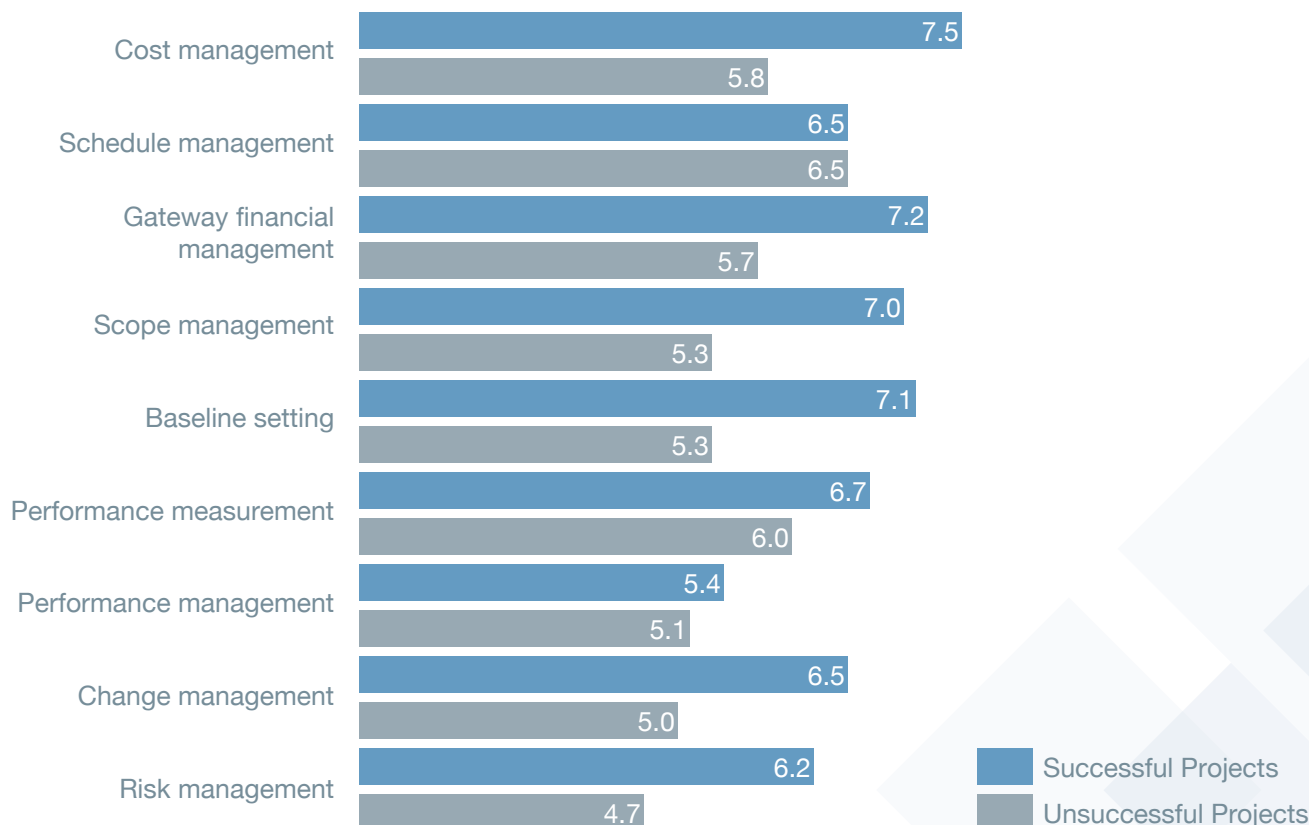
process quality above seven across all process areas surveyed (based on a 10-point scale with 10 the highest and 1 the lowest). This was between one and three points higher than the global average.

When considering project controls processes in relation to their business needs, those with processes needing significant improvement were twice as likely to be unsuccessful. This likelihood doubled when they identified processes as needing a complete redraft. On a scale of 1-10, these respondents rated the quality of their controls processes between 5.5 and 4.3, ranking them one to three points lower than the global averages.

Only 11% of respondents with ineffective control processes had reasonable or fully integrated systems, four times lower than the global average.

QUALITY COUNTS
Comparing process quality ratings in successful and unsuccessful projects

Process	Successful Projects	Unsuccessful Projects
Cost management	7.5	5.8
Schedule management	6.5	6.5
Gateway financial management	7.2	5.7
Scope management	7.0	5.3
Baseline setting	7.1	5.3
Performance measurement	6.7	6.0
Performance management	5.4	5.1
Change management	6.5	5.0
Risk management	6.2	4.7

Successful Projects
Unsuccessful Projects

Process Effectiveness by Industry

Further analysis sought to understand project controls process effectiveness by industry. The rail and underground market reported the weakest project controls processes, with the fewest respondents from this industry rating their controls as well-drafted and well-integrated. Infrastructure and construction had the strongest controls processes. Even here there was still room for significant improvement with over 40% of respondents disclosing that their controls fulfilled many needs but not all.
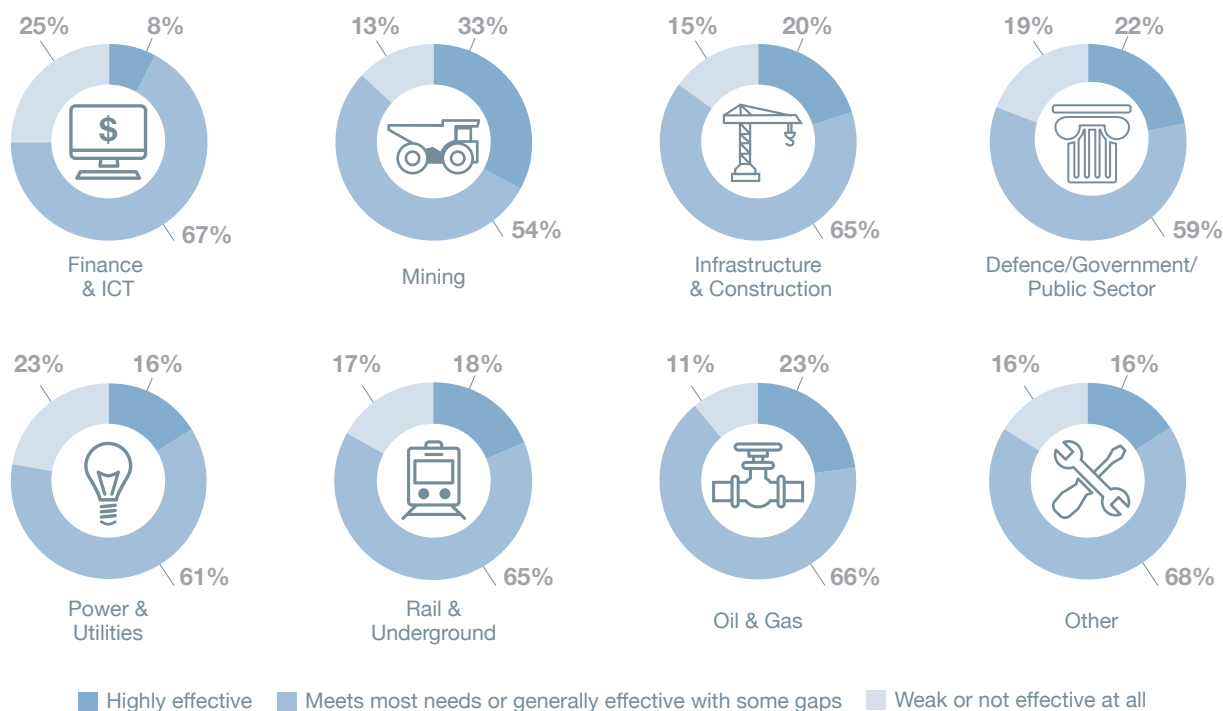
Process Compliance and Project Controls

Having established that well-structured and integrated processes are embedded in many organisations, we explored the extent to which project controls processes are followed by organisations.

When processes were strictly followed, the project outcome was six times more likely to be successful. However, when process compliance was weak, the outcome was over three times more likely to be unsuccessful.

When compliance checks were frequently undertaken, the project outcome was more likely to be successful. When checks were rarely or not at all taken the project outcome was two times more likely to be unsuccessful.

PROJECT CONTROLS EFFECTIVENESS BY INDUSTRY

25% / 8% / 67%	13% / 33% / 54%	15% / 20% / 65%	19% / 22% / 59%
Finance & ICT	Mining	Infrastructure & Construction	Defence/Government/ Public Sector
23% / 16% / 61%	17% / 18% / 65%	11% / 23% / 66%	16% / 16% / 68%
Power & Utilities	Rail & Underground	Oil & Gas	Other

■ Highly effective   ■ Meets most needs or generally effective with some gaps   ■ Weak or not effective at all

Use of Project Controls and Management Information in Decision-making

We were keen to understand how many respondents believe that their organisation made good use of their controls information in the management of projects. We asked respondents to categorise how information was used and analysed how well managers could interpret and make effective decisions based on the information their project controllers provided. We also considered the impact of project controllers' skills in presenting this information.

Management generally made good use of the project controls data generated by highly skilled project controllers. In contrast, those with lower skilled project controllers were more likely to respond that controls data was not used in project management.

Organisations that consistently relied upon information produced by their project controls team to inform decision-making found that they were 4 times more likely to deliver predictable project outcomes, and 8 times more likely to meet all project time, cost and quality objectives.

Further analysis indicated that the lower the level of skills identified by project controllers within an organisation, the more likely they were to be unsuccessful in their project delivery. All respondents who answered that controls information was not used in project management reported that their projects were unsuccessful. This reinforces our belief that retaining highly skilled practitioners of project controls support project success.

Organisations that consistently used project controls reports were:

4x more likely to deliver predictable outcomes

8x more likely to meet all time, cost, and quality objectives

The level of maturity of a project controls system is determined by two key factors:

1. *How effective the system and/or its tools are in enforcing defined processes, underpinned by how well-defined the processes are; and*

2. *The degree to which it integrates project management systems to improve automation, analytics and efficiency as a whole.*

The type of project controls tools used can impact how effectively they can be integrated. We surveyed respondents to find out what were the most popular systems used, how well they were integrated and how well they supported successful project outcomes. In reviewing the survey results we noticed the following trends in project management systems:

- introduction of apps to automate on-site activities
- uptake in digital engineering and the use of BIM within controls, and
- increased uptake in analytics tools for dashboard reporting and predictive analysis.

Planning Systems

Oracle Primavera P6 is still the predominant tool in use, with 66% of respondents naming this specific tool. Outside this survey we are seeing a shift in the way Primavera P6 is being utilised when organisations introduce cost management tools, shifting the time phasing and project forecasting into project cost control tools.

Around 90% of all those using Primavera P6 believed they had a robust system for managing time/schedule compared with 57% of those using Microsoft Project and 17% of those who used Excel. It's easy to see then why Primavera P6 comes out ahead the pack as the tool of choice.

Cost Control

Microsoft Excel is currently the most common tool used for project cost management, followed by SAP and ARES PRISM respectively. Despite this, clients using ARES PRISM and SAP outperformed Microsoft Excel, reporting greater predictability and ability to achieve project outcomes, as well as higher quality controls processes for managing project time/schedule. Those with robust systems also scored highest when it came to the skills of their team, implying that more experienced teams were driving the uptake of more robust systems.

An increasing number of projects are standardising their approach to managing cost, whether it be on a package within a project or project within a portfolio or program. We saw 30% of those who used Microsoft Excel for cost management use it in combination with other systems, compared with 34% in 2016. Our belief is that this is because replacing systems like Microsoft Excel with more effective cost management systems supports improved results in project delivery.

PROJECT OUTCOMES BASED ON SYSTEMS USAGE
Of those that used project controls systems

Schedule Management
- 55%
- 8%
- 3%
- 5%
- 29%

Cost Management
- 56%
- 10%
- 2%
- 7%
- 25%

Risk Management
- 56%
- 10%
- 5%
- 2%
- 26%
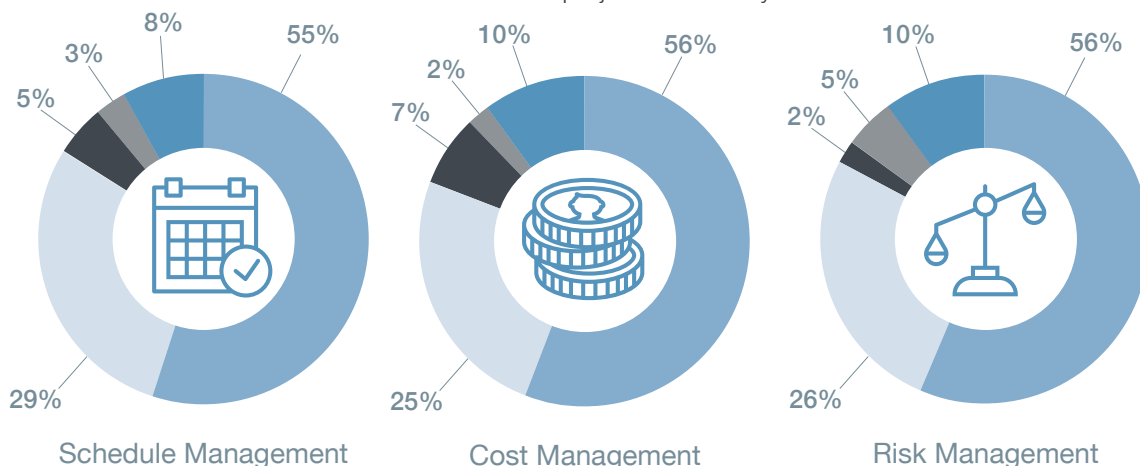
■ All projects have met with objectives ■ Most projects have met objectives ■ Some projects have met objectives
■ Projects have generally met objectives ■ Don't know or prefer not to say

Risk/Issues Management

This year again, Microsoft Excel is reported as the primary tool used by organisations to manage risks and issues on projects. Deltek Active Risk Manager (ARM) also tied with Microsoft Excel, followed closely by Oracle Primavera Risk Analysis (Pertmaster™) as the preferred quantitative risk management toolsets.

Results showed a similar pattern to that of cost management tools, with both Deltek Active Risk Manager and Oracle Primavera Risk Analysis showing users achieved better outcomes on projects. While Oracle Primavera Risk Analysis reported as being the most robust of the three, Deltek Active Risk Manager users reported that they performed better in achieving project objectives and higher quality processes for risk management.

System Integration

As project controls mature within organisations, process discipline as well as the degree to which systems are integrated with time, cost and risk improve. This is supported by a correlation between project controls process maturity and integration of project systems. Clients with greater process discipline are more likely to deliver successful projects. Where there is greater integration, this too increases the likelihood of project success.

Businesses are moving into data-rich environments which are having a major impact on project controls. System integration has generally increased across all industries, particularly in the integration of digital engineering and project analytics. This is likely to be driven by an increase in the availability of software supporting out-of-the-box integration for controls toolsets, as well as the introduction of Extract, Transform and Load (ETL) tools, workflow tools and other data management tools.

By listening to the market, software providers have substantially reduced the cost for clients to integrate their systems to improve the depth of their data and reporting drawn from different parts of their business. We believe this is also driving an increase in digitisation of paper-based systems and processes as applications like site diaries, site instructions, and defects reporting tools also slowly become the norm. This trend is presenting real opportunities for project teams to step away from time-consuming manual reporting and introducing automated dashboard reporting.

Variations in the level of systems integration appear to be closely linked to project maturity and project success, regardless of sector and global region. Over the coming years, we intend to look at this closer to determine how this changes over time both geographically and by sector.
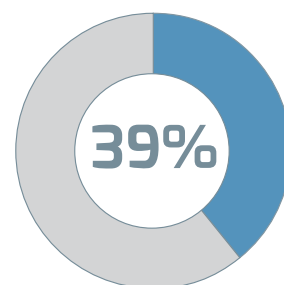
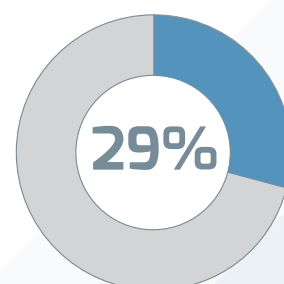### INTEGRATION LEADS TO BETTER PROJECT OUTCOMES

■ Successful Outcomes
□ Unsuccessful Outcomes

78%
Fully integrated

54%
Reasonably integrated
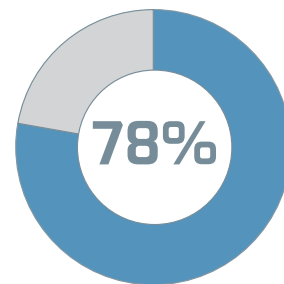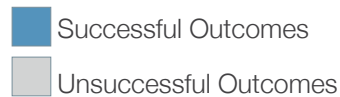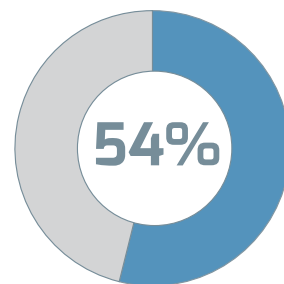
39%
Some aspects integrated

29%
Not integrated or in silos

Digital Engineering (BIM)

The emergence of Digital Engineering (including the use of BIM or Building Information Modelling) on projects is expected to make a significant contribution to the development and delivery projects into the future. In 2018, 58% of respondents surveyed either worked or were working in organisations with established or emerging Digital Engineering capability. Only 6% of this group, however, has managed to integrate their controls with Digital Engineering tools – a small improvement of 1% from 2016.

While growth has been slow, the value of Digital Engineering is clear: 75% of those that stated they used comprehensive BIM achieved all or most project objectives, compared with 36% for those that used none.

Our survey supports that there is an expectation that the responsibility for driving innovation in how Digital Engineering is adopted, including how guidelines and expectations are set for the supply chain, rests with the owner. Europe and the UK have seen large investments by owners in up-skilling the supply chain with a good degree of success over the past three years, while the Australian market is only now starting to adopt lessons learned from the UK and European markets driving the digital engineering agenda.

Impact of BIM on Project Outcomes

Upon analysis of the data collected on BIM; a pattern developed. Projects and organisations that utilised BIM toolsets benefitted from better project outcomes and project control effectiveness. Project failure rates dropped from 19% without BIM, to 8% when utilising these tools. Likewise, project control effectiveness ratings jumped up for those organisations utilising BIM toolsets, with 36% of projects or organisations utilising BIM rating their project control effectiveness as having 'improved greatly', as opposed to 13% of organisations who did not use BIM.

Innovations

Looking to the future of project controls, we asked survey respondents about what they considered to be the most important development, innovative or otherwise, to improve the governance and control of projects and the organisations delivering them.

Our respondents were in clear agreement that integration of management systems to improve data validation and predictive analysis was the most important. Fifty percent of respondents cited this over other responses including improvements in data analytics and intelligent dashboard reporting, use of tablets and smartphones to measure progress on site, and other visualisation advancements – such as drone footage, 4D/5D planning or augmented reality.

Improved integration has been a continuous theme, reiterated in participant responses through the various sections of this report. Rather than bemoaning a lack of innovation in the industry, we feel that this focus on integration highlights the push towards maturity.

CONCLUSIONS AND INSIGHTS

- Project control is becoming increasingly accepted globally as a powerful management tool to assist management decision-making and to improve project outcomes.

- There is an intrinsic relationship between good project controls and project success. The more integrated project controls were across time, cost and risk, the more they were seen as effective and robust.

- Support for project controls from management and leadership is linked to project success – it positively impacts project controls capabilities, and maturity within an organisation.

- Projects are facing a shortage of appropriately skilled project controllers. Those that reported having project controllers with sufficient skills to perform effectively were seen most often on projects where there were higher levels of project control integration.

- The wider project community could benefit greatly from understanding on a practical level the benefits of project controls, and why we need to be determined and disciplined in measuring and reporting project data.

- Having a diversity policy is now common worldwide, however, this not generally reflective of the level of gender diversity within a workplace. Projects that were the most gender-balanced (i.e. around 50% split between men and women) were more successful in achieving their project objectives, regardless of the industry or region.

- BIM awareness is still emerging with more and more organisations beginning to use it in the delivery of their projects. This technology is known to increase the speed of delivery and reduce costs and our survey backed this up through finding that increased utilisation of BIM being linked with improved project outcomes for the organisations of our respondents.

About LogiKal

LogiKal is an award-winning consultancy that helps businesses achieve better results in the delivery of projects, big or small. Their expert advice and performance management solutions improve operational performance, reduce costs and mitigate risks. Effective decision making is faster and easier with LogiKal's unique mix of specialised and proprietary systems and services integrating your project controls.

Founded in 2002, LogiKal has project management and controls specialists in the United Kingdom, Europe, Australia and Asia. Each of them shares LogiKal's vision for building and enhancing capability within teams so that they can maintain consistent and sustainable results. Through LogiKal, you can leverage the value of their experience delivering projects around the world.

LogiKal offers a range of services including consulting and advice, information management and managed services to help your project succeed. To enhance industry capability, LogiKal also provides coaching, training and professional development services with a range of accredited and non-accredited specialist skills courses necessary to deliver everything from small to complex projects.

Take part in the next survey

LogiKal publishes its Project Controls Survey Report annually. The survey monitors the maturity of the project controls industry and tracks emerging trends from around the world.

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