KPMG

Project delivery confidence

Realising the value of your capital projects and programmes through enhanced project controls

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> Organisations who utilise effective project control skills have **75.5%** chance of increase in profitability compared to organisations that do not."

1. The case for effective project controls

Project and programmes help organisations achieve their goals and strategic objectives. For example, 95% of government policies are delivered through major projects[1]. Put simply, business outcomes are affected by the success of projects and programmes. Investment in capital infrastructure projects is estimated at $3.2 trillion per year until 2030[2].

This significant scale of investment calls for effective project control to realise return on investment (ROI). However, many capital projects are not delivered successfully, negatively impacting organisational earnings and profitability. According to research across 20 countries and five continents, 9 out of every 10 projects encountered cost overrun[3]. 63% of all world bank funded projects have also encountered overrun[4], indicating this challenge as a truly global phenomenon.

95% of government policies are delivered through major projects

The quantum of projects that failed to be delivered on time and within budget has remained consistently at 40% - 45% over the years[5].

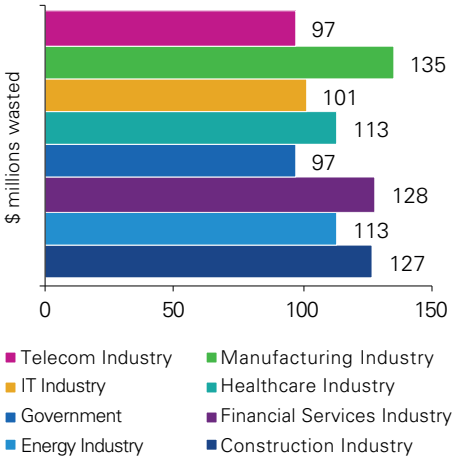
High profile examples include:

- Berlin's New Brandenburg Airport: 41% over budget and 9 years late[6]
- Denver International Airport: 194% over budget and 1.3 years late[7]
- Scottish Parliament: £400 million over budget and 3 years late[8]
- Crossrail: £4 billion over budget and currently 3 years late[9]

Organisations globally also waste an average of $114 million for every $1 billion spent on projects and programmes due to poor project performance. In the UK, $130 million is wasted for every $1 billion.

This problem is common across various industries in the economy for example, construction industry ($127 million wasted for every $1 billion spent), energy industry ($113 wasted for every $1 billion spent), government ($97 million wasted for every $1 billion spent), and healthcare industry ($113 wasted for every $1 billion spent)[10].

$ millions wasted across industries per $1 billion spent on projects



1 National Audit Office, 2013
2 McKinsey, 2013.
3 Flyvbjerg, 2003
4 Adam and Lindahi, 2017
5 PMI, 2018
6 O'Neil, 2019)
7 Szyliowicz and Goetz, 1995
8 Flyvbjerg 2017; O'Neil, 2019
9 Infrastructure Intelligence, 2020
10 PMI, 2020

2. Using project controls to enable success

Project control is the recognised mechanism for preventing project failure, increasing the chances that projects finish on time, and within budget, and achieving their contributory effect on strategic objectives.

It is the application of relevant management and technical processes and measures to projects and programmes, which allows early identification, management and mitigation of project challenges and risks so that project and strategic objectives can be achieved.

Research has found that organisations who utilise effective project control skills have 75.5% chance of increase in profitability compared to organisations that do not[11].

Effective project controls help reduce impact on budget and schedule therefore saving costs and improving ROI for organisations. However, project control is a multifaceted, sometimes complex process which is not carried out consistently within organisations; and there is a lack of a common industry standard. Nonetheless, when deployed consistently using leading practices, project controls can provide organisations with the following:

1. Improved margins
2. Increased visibility of the financial performance of programmes
3. Improved predictability of project cost and time requirements
4. Reduction in costs of projects and a competitive advantage over organisations that have got less mature project control capabilities.

11 Pollack and Aldler, 2016

3. Barriers to effective project controls

Implementing project controls within an organisation is not without its challenges. Project control is a multifaceted process that relies on people, tools, and systems to be effective.

To implement a project control environment successfully, it is important to understand some of the barriers first, which can be categorised under four themes based on their origin during the project control process[12]. These are:

1. Organisational project control barriers
2. Project delivery management approach project control barriers
3. Project client emanating barriers
4. Project team originated barriers.

1 Project control barriers stemming from the organisation

This is the most important barrier to effective project controls. Many factors that engender project failure can be linked to organisational issues[13]. Key challenges include a poor project control culture and inadequate tools and processes. An organisation that does not take project controls seriously and has inadequate tools and processes for project control will make even the best project professionals and senior management struggle during project delivery.

Even within organisations that have embraced project controls, if they are poorly designed, implementation will be a challenge. Additionally, a lack of management buy-in and lack of a project control culture in an organisation will often lead to project controls being implemented half-heartedly and limited investment and training being dedicated to them.

Senior management support is significantly more important for project success than any other factor[14].

Although having adequate processes in place is advocated, a plethoric project control process and system is also a barrier as staff may come to consider them burdensome and consequently utilised apathetically. The quality of training and knowledge that the people working on the project have about the controls is another key barrier. There is still a misconception that project control is just about Gantt charts and status reports, including an inadequate understanding of how to correctly deploy tools and techniques such as earned value analysis, critical path method, progress analysis, s-curves etc.[15]. Adequate training of all members of the project team, is crucial in the smooth operation and use of project control systems[16].

2 Project control barriers stemming from project management

69% of organisations highly value project management but only 22% use standardised project management practices throughout their organisation[17].

Additionally, project delivery teams sometimes underestimate the attention required to monitor project progress and performance at the early stage of a project, believing that there is still enough time to recover the project if progress stalls.

> **69%** of organisations highly value project management but only **22%** use standardised project management practices

12 Olawale 2020 & 2021
13 Munizaga and Olawale, 2021
14 Young and Poon, 2013
15 Olawale, 2020
16 Bryde et al. 2018
17 PMI, 2020

A lack of attention from the very start of a project will subsequently lead to a frantic rush to finish the project through acceleration which inevitably impacts negatively on project controls and quite often increases the project cost.

3 Project control barriers stemming from the client

Some barriers to project control may emanate from the client processes and their approach to the project. Usually, this will relate to external clients but it also covers projects delivered to business units or functions by their organisation's project delivery team. To the project management team, the business unit is a client or customer.

> Inadequate or poor communication has been identified as the primary cause of **29%** of project failures

One of the barriers that falls under this category is excessive stage gates. If authorisation gates are not proportionate to the value, pace and complexity of projects being delivered, it may restrict the project team's ability to make agile, tactical decisions and thus become detrimental to effective project controls.

Lack of clear and correct communication between a client's office staff and their project site representatives can sometimes lead to confusion. Inadequate or poor communication has been identified as the primary cause of 29% of project failures[18]. High information asymmetry typically exists between a client and project contractors which needs to be addressed for project control success[19]. The importance of clear communication for effective project controls cannot be overstated because project control relies on information and data.

4 Project control barriers stemming from the project team

Lack of trust

Projects require some form of cooperation and trust, even though participants may all try to protect their own various interests. However, lack of trust often exists among the project team members. Any lack of transparency is bound to be problematic in the quest to achieve effective cost and time control, since information about the project cost and time performance is essential for the project control process. The importance of teamwork is critical for project success[20]. A higher level of trust should enhance project performance, especially if the relationship is used to improve cross-disciplinary teamwork[21].

Insufficient time allocation

Projects are usually developed and delivered under time constraints and quite often the project delivery team members are not able to devote enough time to project control, as they are usually busy expending time and effort on core delivery activities. One reason for this is the impression that it will be very onerous to fully participate in the project control process and attention should be focussed on completing the project which can at times be frantic. Project controls information and data are therefore rushed and produced half-heartedly, usually out-of-date and mostly inaccurate.

Nonfactual reporting

Poor reporting is a common problem during project delivery because reporting of information by the project delivery and sometimes management team is not always factual[22].

Research has found that project managers produce biased reports 60% of the time and the bias is more than twice as likely to be optimistic than pessimistic[23]. One of the reasons for this is that project delivery personnel are sometimes unwittingly optimistic about the status of the project or attempt to mask issues, in the hope that they can bring a failing project back on track without raising the alarm to their senior staff based in the office.

> Research has found that project managers produce biased reports **60%** of the time and the bias is more than twice as likely to be optimistic than pessimistic

Consequently, the reported information is not reflective of the true status of the project, and senior managers do not have visibility of areas needing corrective action, thus making project controls ineffective.

18 PMI, 2018
19 Bryde et. al. 2018
20 Chan et al. 2001
21 Kadefors, 2004
22 Olawale and Sun, 2015
23 Snow et al. 2007

4. Achieving effective project controls

The barriers to effective project controls can be overcome by putting in place a well-designed and intelligent project controls regime within an organisation. In order to achieve effective project controls, there are some essential components that are required.[24]

1 Simplicity and ease of use

Project control processes, procedures and systems in an organisation should be simple, clear, and easy to implement. If not, users will be discouraged or possibly apply it incorrectly. Poorly designed and implemented project controls can be perceived as too time consuming and demanding of data and information and this is often perceived as outweighing any benefit from implementing the processes. Highly complicated systems could lead to staff becoming discouraged and resistant. It is therefore important to design project controls intelligently and ensure that there is a balance between the time spent collecting and operating the project control process/system and the added value of such efforts. Effective project control processes get this balance right so that project staff will be willing to utilise it without perceiving it as an onerous task and extra work but seen as part of their project management duties. A control system should always take into consideration the amount of detail required which will vary according to the level of management it is for[25].

2 All-participatory

There is a general tendency to make project control the sole responsibility of a function within an organisation such as the project management office, project controls, quantity surveying, cost management or even finance. For a project control system to be effective, it is important to develop a culture that makes the governance and adherence to project controls not just a matter for a single function but for all areas of an organisation. The implementation of effective project controls requires the cooperation of different project stakeholders and coordination among the different departments within an organisation.

3 Process-led

Quite often project controls of many organisations may be too computer-centric and reliant on the ability to be 'whizzed' using IT systems, not focussing on processes and practices. The importance of systematisation of project control processes is not being played down, in fact we recommend it as it will enable the project control process.

However, organisations should not disregard the importance of the processes and practices that will generate the information and data needed to implement the systems.

24 Olawale, 2021
25 Al-Jibouri, 2003

Effective project controls can be IT-enabled but should always be process-led and not IT-led. The focus of project control should be more on the management of the various sub-processes as good control and performance of these processes will eventually lead to the achievement of the desired overall project goals[26].

4 People centric and training

A project control regime that aspires to be effective should be designed considering the requirements and needs of the people that will be implementing it, especially site and operational staff. These people are important for the smooth operation of any project control process since the data and information needed for any analysis and subsequent control will be provided by people. However, only 45% of organisations have a formal process for developing project management competency[27]. An organisation that is serious about delivering projects effectively should not only put in place the necessary project control systems and processes but will also need to provide the necessary training to correctly implement them.

> Only **45%** of organisations have a formal process for developing project management competency

5 Clarity and visibility of what to do at every stage

Have you ever joined an organisation and found a process or system difficult to follow? Project control is a cyclical process involving planning, monitoring, reporting, analysing, and action utilising many technical and management processes. Many project controls in practice do not adequately highlight what is expected during the various areas and steps of the process. Although, an overly prescriptive project control process is not the solution and is not what we recommend since projects differ in characteristics.

However, staff would find it helpful if project control processes and systems were easy to follow through visibly knowing what is expected, and if possible, the reasons for this during all aspects of the project control process. The project control approach needs to be planned at the outset of a project so that the project management team is aligned. Due to the varied level of experience of the project team members, alignment on the project control approach is only achievable by establishing a set of Project Controls guidelines and procedures for the organisation.

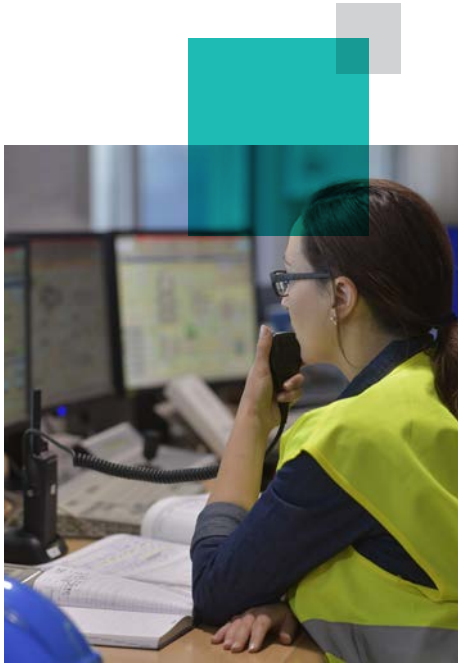
> Cost and time control are not often integrated in practice but often segregated during project controls

6 Integration of cost and time

The interrelationship existing between cost and time during project controls cannot be overstated. It is difficult to separate the causes of overrun into that of cost and schedule, which implies that the reasons for cost increases are normally also the reasons for time extensions[28].

Despite this, cost and time control are not often integrated in practice but often segregated during project controls[29].

Cost and scheduling are closely interrelated, because they share a lot of common data in their controlling processes[30]. For any project controls to be effective the integration of cost and time should be at the core.



26 Haponava and Al-Jibouri, 2010
27 PMI, 2018
28 Chang, 2002
29 Olawale and Sun, 2015
30 Jung and Woo, 2004

6. How KPMG can help - Digitised project controls assessment and transformation

We help organisations reduce wastage, improve ROI and build delivery confidence, by enhancing their controls environment.

We do this using our tried and tested approach that comprises: our digital controls assessment tool; combined with a partnering approach that focuses on coaching and embedding knowledge into client teams.

KPMG's digital controls assessment tool is part of an online global suit of tools to assist clients enhance the performance of their capital projects and programmes. The tool includes a detailed controls assessment framework, global benchmark database, and library of leading practice to assesses an organisation's current control maturity; we identify gaps to leading practice and use this as the basis for making the change that matters. Our methodology focusses on improvement and transformation, not just measurement, and we address the crucial behavioural and cultural aspects required to enable effective controls.

KPMG project Controls Framwork: Core and sub processes

Within these major and sub-categories, the controls framework includes 196 specific assessment areas that we tailor to the needs of our clients

Cost and Financial Management
- Budgeting
- Payment processing and administration
- Project cost reporting and accounting
- Estimating / forecasting and contingency management
- Cash flow reporting
- Value engineering
- Project variance and historical trend analysis

Project Controls and Risk Management
- Change order management
- Risk management
- Design standards and specifications
- Regulatory compliance
- Quality control and inspection
- Environment, health, safety, security
- Project management self-assessment
- Customer satisfaction and lessons learnt

Schedule Management
- Schedule planning and development
- Schedule updating
- Schedule change management
- Schedule integration

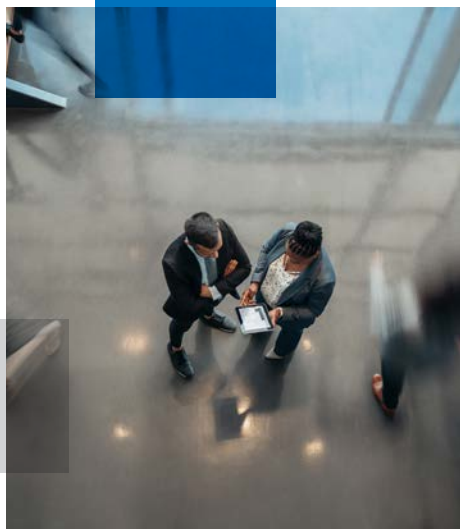
Procurement Management
- Procurement planning
- Sourcing strategy
- Contracting strategy
- Contract negotiation
- Contract administration
- Materials management
- Contract closeout

Strategy, Organisation and Administration
- Project planning
- Roles and responsibilities
- Policies and procedures
- Communication planning
- Project infrastructure and systems
- Document control and records management

Culture
- Clarity
- Role Modelling
- Enabling Environment
- Commitment
- Openness
- Transparency
- Comfort to report misconduct
- Enforcement

Project delivery confidence

Our project controls framework covers 6 core control processes, ~40 control sub-processes (shown graphically below) and up to ~200 assessment criteria that can be tailored for the specific needs of our clients, to suit different project and portfolio complexity and size. Our framework has been developed from our experience of designing, reviewing, and advising on project controls over many decades and is tailored to the practical realities of running an organisation.



Our methodology

Our structured and straightforward approach to enhancing controls is aligned to three phases:

1 Review

KPMG's digital controls tool supports a period of diagnosis as we complete a rapid, detailed assessment of a client's current controls environment and performance, identifying symptoms of controls issues.

2 Recommend

The gap analysis between existing maturity and the desired to-be state results in practical and prioritised recommendations for improving the controls environment, culture and enhancing performance.

3 Transform

KPMG's major projects advisory specialists embed in the client team, designing and implementing new and revised processes and procedures, cultural change and transformation to allow the client to accelerate performance.

Why KPMG

Our team are subject matter experts from a range of technical disciplines including engineering, project controls, scheduling, project management, quantity surveying and project accountanting. We have deep industry experience in delivering and advising across major infrastructure projects and programmes. We bring insight from our assessment of hundreds of major projects from which we have developed the fundamental building blocks to the deliverability of complex projects. We bring to you a fresh, independent, and multidisciplinary perspective on setting up for success by getting the basics right.

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