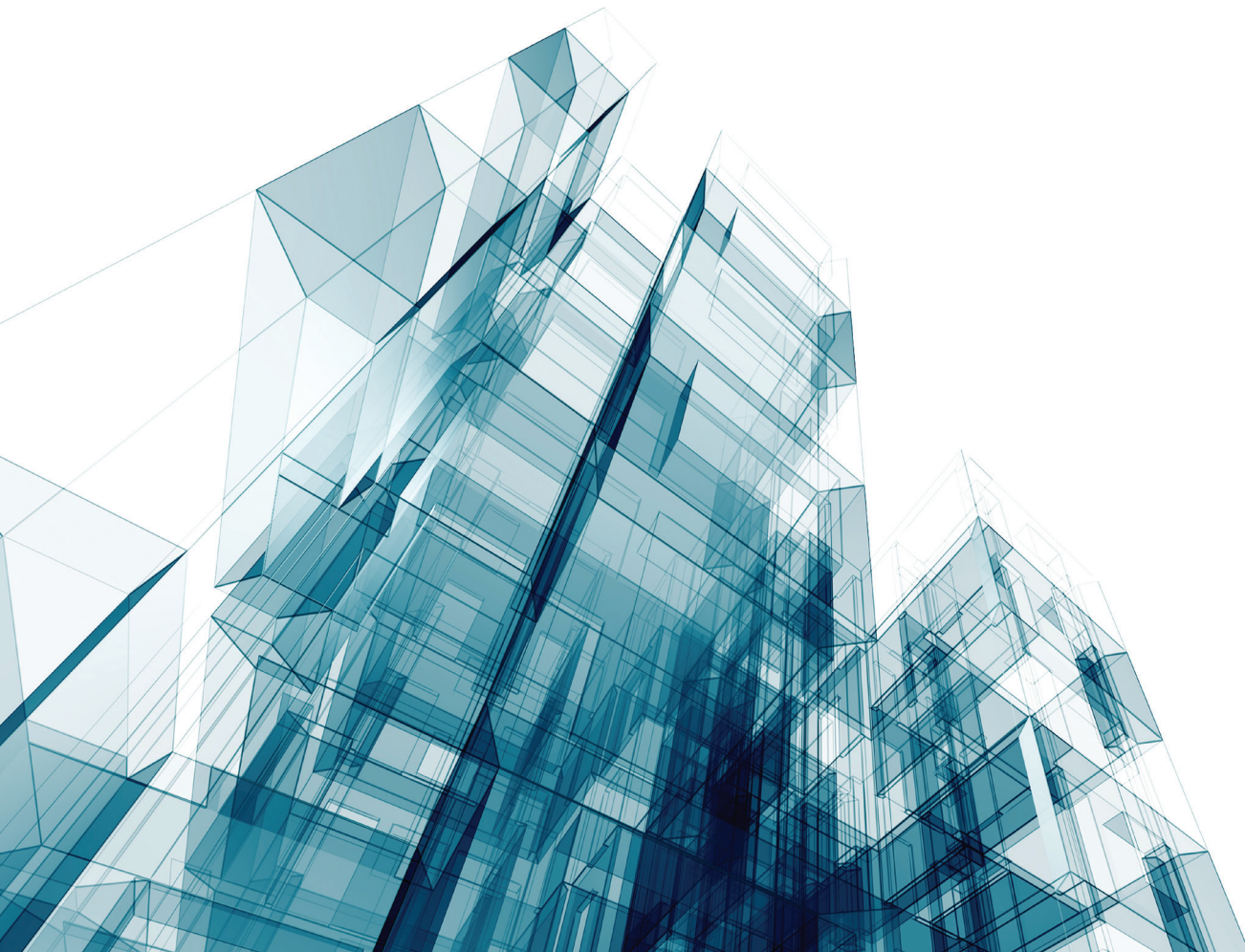




RICS professional guidance, Global

The informed infrastructure client

1st edition, September 2015



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Contents

RICS professional guidance	2
Foreword	4
Introduction	5
1 Complexity/capacity gap analysis	6
1.1 The routemap to success	6
1.2 Complexity analysis.....	7
2 Requirements	8
2.1 Introduction	8
2.2 The essentials of requirements.....	8
2.2.1 Accepting the challenge.....	8
2.2.2 Early operator and maintainer involvement	9
2.2.3 Expectations and compliance	9
2.2.4 Using relevant information.....	11
2.2.5 The mission statement.....	11
2.2.6 A set of values	11
2.2.7 Policies and principles	11
2.2.8 The balanced scorecard.....	11
3 Governance	14
3.1 The importance of good governance	14
3.2 Demonstrating fitness to deliver	14
3.3 The accountable manager	14
3.4 The decision heirarchy	15
3.5 Maintaining constructive challenge	15
3.6 Expert advisory panels.....	15
3.7 Managing over-optimism.....	16
4 Organisational design and development	17
4.1 Why it is important.....	17
4.2 What is 'the client'?.....	17
4.3 The client's position and time within the market	17
4.4 Inter-relationship.....	17
4.5 Progressive organisation.....	18
4.6 Skill and capacity flexibility	18
5 Execution strategy	19
5.1 Purpose.....	19
6 Procurement	20
6.1 Balanced scorecard	20
6.2 Market engagement.....	21
6.3 Packaging strategy	21
6.4 Contract selection.....	22
6.5 Route to market	23
6.6 Benefits realisation	23
Conclusion	24
Endnotes	25
Sources of further information	26

RICS professional guidance

International standards

RICS is at the forefront of developing international standards, working in coalitions with organisations around the world, acting in the public interest to raise standards and increase transparency within markets. International Property Measurement Standards (IPMS – ipmsc.org), International Construction Measurement Standards (ICMS), International Ethics Standards (IES) and others will be published and will be mandatory for RICS members. This guidance note links directly to these standards and underpins them. RICS members are advised to make themselves aware of the international standards (see www.rics.org) and the overarching principles with which this guidance note complies. Members of RICS are uniquely placed in the market by being trained, qualified and regulated by working to international standards and complying with this guidance note.

RICS guidance notes

This is a guidance note. Where recommendations are made for specific professional tasks, these are intended to represent 'best practice', i.e. recommendations that in the opinion of RICS meet a high standard of professional competence.

Although members are not required to follow the recommendations contained in the guidance note, they should take into account the following points.

When an allegation of professional negligence is made against a surveyor, a court or tribunal may take account of the contents of any relevant guidance notes published by RICS in deciding whether or not the member acted with reasonable competence.

In the opinion of RICS, a member conforming to the practices recommended in this guidance note should have at least a partial defence to an allegation of negligence if they have followed those practices. However, members have the responsibility of deciding when it is inappropriate to follow the guidance.

It is for each member to decide on the appropriate procedure to follow in any professional task. However, where members do not comply with the practice recommended in this guidance note, they should do so only for good reason. In the event of a legal dispute, a court or tribunal may require them to explain why they decided not to adopt the recommended practice.

Also, if members have not followed this guidance, and their actions are questioned in an RICS disciplinary case, they will be asked to explain the actions they did take and this may be taken into account by the Panel.

In some cases there may be existing national standards which may take precedence over this guidance note. National standards can be defined as professional standards that are either prescribed in law or federal/local legislation, or developed in collaboration with other relevant bodies.

In addition, guidance notes are relevant to professional competence in that each member should be up to date and should have knowledge of guidance notes within a reasonable time of their coming into effect.

This guidance note is believed to reflect case law and legislation applicable at its date of publication. It is the member's responsibility to establish if any changes in case law or legislation after the publication date have an impact on the guidance or information in this document.

Document status defined

RICS produces a range of professional guidance and standards documents. These have been defined in the table below. This document is a guidance note.

Type of document	Definition	Status
Standard		
International standard	An international high-level principle-based standard developed in collaboration with other relevant bodies.	Mandatory
Professional statement		
RICS professional statement	A document that provides members with mandatory requirements or a rule that a member or firm is expected to adhere to. This term encompasses practice statements, Red Book professional standards, global valuation practice statements, regulatory rules, RICS Rules of Conduct and government codes of practice.	Mandatory
Guidance		
RICS code of practice	Document approved by RICS, and endorsed by another professional body/stakeholder, that provides users with recommendations for accepted good practice as followed by conscientious practitioners.	Mandatory or recommended good practice [will be confirmed in the document itself].
RICS guidance note [GN]	Document that provides users with recommendations or approach for accepted good practice as followed by competent and conscientious practitioners.	Recommended best practice. Usual principles apply in cases of negligence if best practice is not followed.
RICS information paper [IP]	Practice-based document that provides users with the latest technical information, knowledge or common findings from regulatory reviews.	Information and/or recommended good practice. Usual principles apply in cases of negligence if technical information is known in the market.

Foreword

Whether you live or work in a developed or developing country, in a city or a rural area, there is no question that infrastructure has an impact on your quality of life. Without infrastructure, economies falter, cities grind to a halt and people do not receive the services they require to live and work effectively.

The vision for a country's infrastructure usually comes from its government and there is something to be said for providing a more strategic trans-parliamentary or governmental view to enable longer term planning, mitigate risk and enable buy-in by investors and organisations to the opportunity infrastructure can provide as an asset class.

There is no doubt, poorly performing or inadequate infrastructure stalls growth and can impact GDP. A partnership between central public sector accountability and private sector deliverability for infrastructure is often the preferred route.

But what can, or should be expected from the infrastructure client and how can service providers ensure that they are providing the client with the best possible service for the desired outcomes?

Across the globe there is huge demand for the key, enabling infrastructure to be built faster, more productively and sustainably, and to deliver greater public benefits. There is a global race, in competition with countries like China and India, who understand the importance of modern infrastructure in delivering a thriving economy and are investing billions in updating everything infrastructure from energy, to highways, ports and rail.

With global infrastructure and capital spending set to reach close to \$10 trillion annually by 2025, this is a huge challenge for delivery; requiring better-informed clients to optimise the deliverability of infrastructure and optimise benefit realisation.

This guidance note is intended to help develop and support the 'informed' client at a critically exciting time for global infrastructure development, such that they are best able to optimise the opportunity by learning from the lessons of the past in the design, build, operate and maintenance of the world's global infrastructure asset base.

It has been developed with global clients and key government departments, to inform all project participants. The benefits of this will make infrastructure assets attractive to investors, stand the test of time, provide economic benefit and, most importantly, deliver the best possible efficient and cost effective service to the public.

The production of this guidance note is timely, as infrastructure is seen as a key capital enabler for the cities of the future and a gateway to broader opportunities. This guidance provides a working document for members who either work within client bodies or provide advice to client bodies and key stakeholders, to deliver the strategy of the iconic future infrastructure that will support the plan to build, repair and renew our key current infrastructure.

If you are working in infrastructure development, it will help you understand the landscape of infrastructure opportunity and build on the lessons of the past on a global scale.

Amanda Clack, FRICS
RICS President Elect

Introduction

This guidance note is intended for RICS members practising in the infrastructure sector, either providing services to an infrastructure client or working within an infrastructure client organisation.

Every effort has been made to align the language used here with that of other contemporaneous publications to which readers may refer.

The effective date of this guidance note is 1 December 2015. However, practitioners are encouraged to adopt the practices in this guidance note earlier if appropriate.

How is a client 'informed'?

An informed client recognises and adopts best practice in its delivery activities. A client is 'informed' when:

- it understands its capability and capacity and also where it is lacking in relation to the task it faces
- it is effective in gaining and using knowledge to make informed decisions
- it is efficient at organising itself for the task; and
- it designs and retains a sufficient degree of flexibility to be able to adapt to the demands of the project.

What do we consider 'infrastructure'?

For the purposes of this guidance note, the scope of infrastructure follows the description in the IUK Routemap¹ of transport, flood protection, energy, communications, and water and waste management.

Who is the 'client'?

This guidance summarises how a client becomes 'informed' when preparing to deliver a project. For the purposes of this guidance note, the client is 'the body responsible for delivering the project including suppliers accountable within the governance structure'. This definition includes directly employed staff, but may also include temporary staff on short-term contracts, agency staff, designers, programme partners, delivery partners and suppliers. The nature of what comprises the client is discussed in more detail in Section 4 – Organisational design and development.

Projects, programmes and portfolios of projects

For simplicity, the term 'project' has been used throughout this guidance note to represent the range of potential scenarios including projects, programmes and portfolios of projects.

1 Complexity/capacity gap analysis

1.1 The routemap to success

To be an informed infrastructure client in the delivery of a project, firstly a client needs to understand the areas of weakness in its delivery capability and capacity and then undertake the tasks necessary to make informed decisions to facilitate effective delivery of its objectives, accommodating selected stakeholder expectations to realise the benefits of the business case.

The client begins by determining the complexity of the task compared with the capability and capacity of the client as a delivery organisation. This may be seen as a position audit or more as part of the process of accepting the challenge set by the sponsor. The requirements include the sponsor's requirements together with the expectations of stakeholders that the client chooses to meet.

The execution strategy is a document that has iterative revisions throughout the life of the project, developing in detail to reflect immediate decisions and containing current levels of information in relation to future decisions.

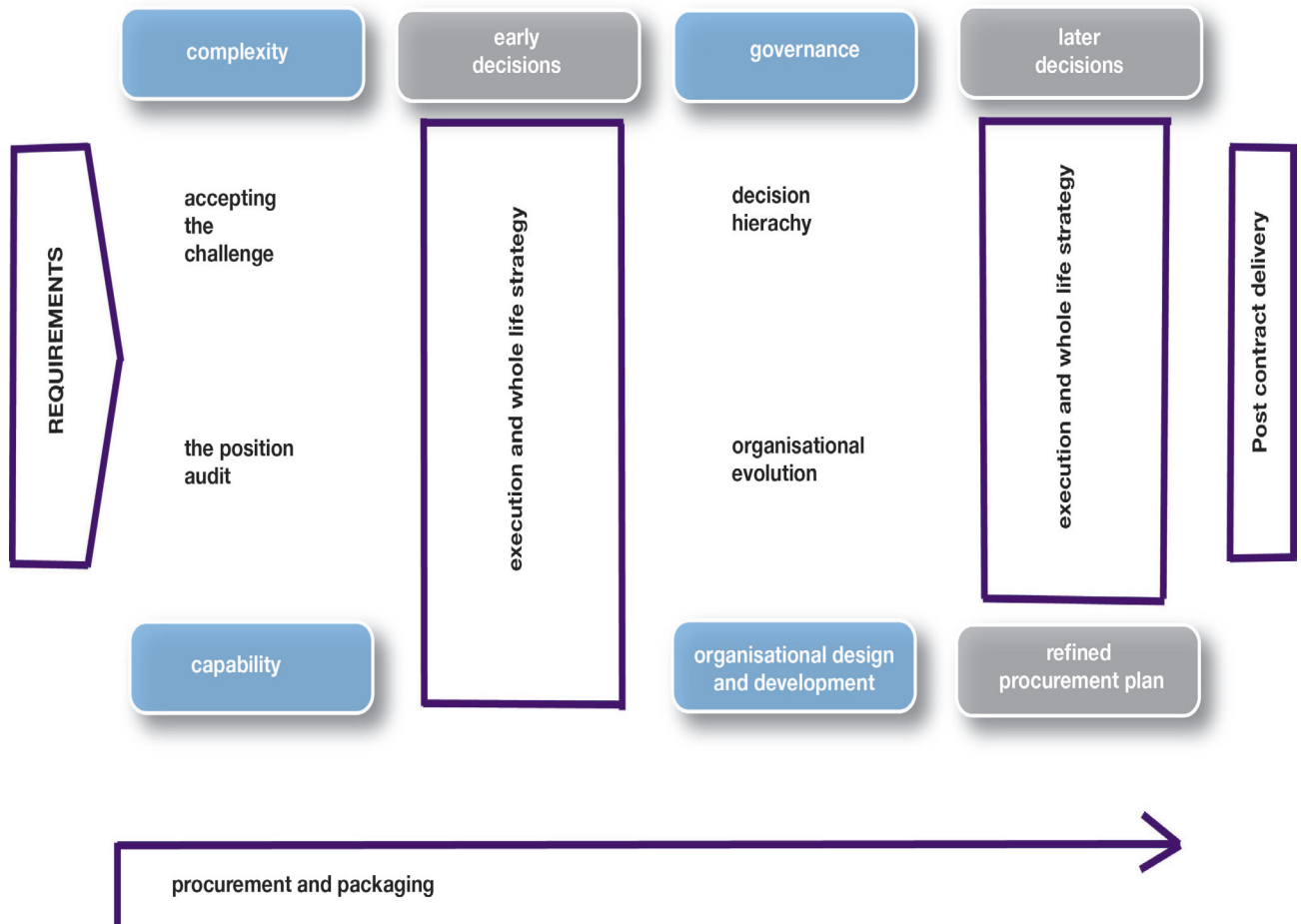


Figure 1: The routemap

The client will develop its governance and organisational design and development to meet the needs of the project. In parallel, the procurement process will be developing as part of and alongside organisational capability and capacity development, to meet the needs of project delivery.

1.2 Complexity analysis

Prior to an in-depth review of the elements of a project, a client needs to conduct a position audit to determine its strengths and weaknesses in relation to project initiation.

An example of this is Delivery Environment Complexity Assessment (DECA²). A method of helping 'audit teams, sponsors and clients shape their understanding of the challenges and opportunities faced in delivering objectives and outcomes, and the steps needed to address the complexities associated with these risks.' It is an example of the initial step necessary to provide a gap analysis to inform the client decision-making process.

The DECA assesses 12 factors, which can be identified as relevant to one or more of the separate elements of requirements, governance, organisational design and development, execution strategy and procurement.

Presented in template form, the DECA helps a client understand the complexities of the delivery task, the capability and capacity of its organisation, and consequently the gaps and areas where an action plan is required to meet the needs of the project. The DECA can be used periodically during the course of a project to inform the client and the decision-making process.

There are various examples of such tools both in the UK and globally that can assist a client in taking this first step.

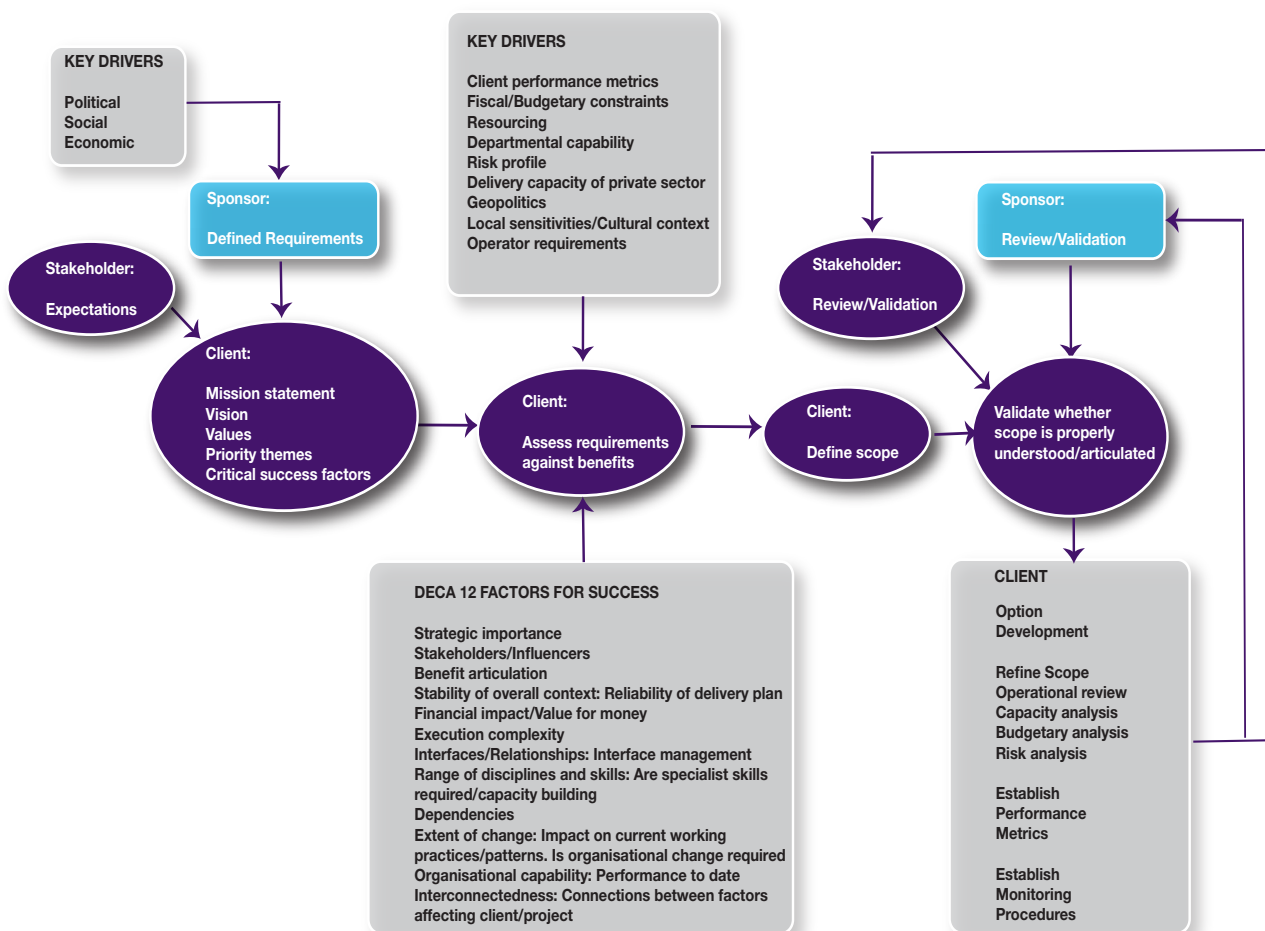


Figure 2: Process flowchart (Image courtesy of UK NAO)

2 Requirements

2.1 Introduction

Requirements consist of two elements:

- the physical asset that the client is required to deliver (scope), howsoever defined by the sponsor, which may include maintenance and operations; and
- the qualities of the process by which the asset will be delivered.

The sponsor of the project will define the asset requirements and the client will determine which expectations placed upon it by stakeholders it will meet in the way the project is delivered.

Projects are undertaken to realise social and/or economic benefit. The client is tasked with delivering the requirements that are intended to realise this benefit. The client cannot realise the benefits of the business case, only deliver the requirements that are defined as necessary to deliver them. For example, the benefits of the major rail projects such as the Mass Transit Railway (MTR) in Hong Kong are measured in the growth of business as a consequence of its construction but the increased passenger flow and improved experience for travellers are part of the requirements.

The degree to which the requirements are prescribed will vary. The importance of unambiguous requirements cannot be understated as demonstrated in the Office of Government Commerce's (OGC) *Common Causes of Project Failure*, which lists a lack of clear links between the project and the organisation's key strategic priorities, including agreed measures of success, as a primary cause of project failure.

The requirements are communicated within the mission statement, values, priority themes and critical success factors for the project, as the client understands stakeholders' expectations and researches the lessons learnt from previous projects. These defining criteria can form the basis of a balanced scorecard for the project, which in turn can become a single continuing thread, embodying the expectations of the sponsor and stakeholders, and flowing through all aspects of the project; in particular through the procurement and post contract phases, enabling selection of the most suitable suppliers and then monitoring and managing their performance through key performance indicators. The ability of the client to establish these elements into its core processes may be a measure of its success at achieving both sponsor and stakeholder expectations.

In particular, establishing a mission statement helps focus all participants on the end goal and can aid focused decision making at every level of the client organisation. It provides confidence to the sponsor that the client understands the

scope; allows the sponsor to confirm that it has properly articulated the scope, and further that it will realise the desired benefits.

The values and priority themes demonstrate to stakeholders that the client understands their expectations. The critical success factors inform the sponsor and stakeholders how it is anticipated that project performance will be measured, providing a level of confidence in how the delivery of the requirements will be demonstrated.

2.2 The essentials of requirements

There are a number of areas that the client may consider so that it is more informed and to increase the chances of successful delivery of the project:

2.2.1 Accepting the challenge

The client should satisfy itself that the requirements as set out by the sponsor are deliverable and can therefore realise the benefits of the business case.

*'Having robust internal assessment and challenge to establish if the project is feasible.'*³

Prior to accepting a project, the client should have the opportunity to validate that the requirements are deliverable within the given constraints. If it concludes that they are not deliverable, the client should refuse to accept the task until the concerns are addressed. The extent to which the client is able to undertake this assessment will vary, but to accept the challenge of delivering a project that cannot be delivered within the given constraints, or that will demonstrably not realise the anticipated benefits, will result in a failed project for both the sponsor and client.

A key element is pre-commitment⁴, which recognises the importance of robust internal assessment and challenge to establish project feasibility. The relationship between sponsor and client should be an equal one, with both parties able to demonstrate the validity of their contribution. At this stage, a robust challenge by the client can give the sponsor confidence that its business case will be delivered. This process also gives the client confidence that the requirements are robust and can be delivered, while at the same time developing the sponsor/client relationship.

This initial encounter between sponsor and client may take place within an organisation where the sponsor to client relationship is generally not equal, or where the client is in the early stages of its life.

The client should, where possible and feasible, undertake its own independent assessment to challenge the requirements. This may be carried out with the sponsor but requires a high degree of openness by individuals so may be best achieved by independent facilitation with clearly established principles for conduct of the review. The quality of the initiation of a project has been demonstrated to be 'highly predictive of project success'⁵, through evidence gathered by the National Audit Office (NAO) from a sample of over 40 projects.

Example: When the London Olympics Delivery Authority (ODA) accepted the challenge to deliver the Olympic Games there was a 100 day period during which the ODA scrutinised the business case for the delivery of the infrastructure for the London 2012 Olympic Games prior to accepting the task. This review resulted in the acceptance of the business case by the ODA but only after the budget had been revised.

2.2.2 Early operator and maintainer involvement

It is crucially important that the client clearly establishes the strategy for operation and maintenance early in the project to have a basis against which to guide its future decisions.

To successfully realise the benefits of a project, early engagement with the operators and asset maintainers is essential. For projects where the operators and maintainers are not identified early, there needs to be a specific early focus on the operation and/or maintenance strategy, which should retain sufficient flexibility to accommodate development of the strategy as more information becomes available, or the operators and maintainers are identified. In these circumstances the strategy should be careful not to restrict its future development, as this will increase the risk that the benefits cannot be fully realised.

Much has been written in relation to early contractor involvement in a project. This has its place and brings with it risks and potential benefits. Arguably, it is more important for the client to engage early and successfully with the operators and maintainers of the asset(s). The extent to which these considerations are taken into account in the early stages of a project will influence how well the benefits can be realised.

A particular issue of infrastructure projects is that due to the significant size of the capital outlay these projects may be more focused on initial capital expenditure as opposed to whole life cost decisions; often projects are undertaken within a budget constraint to a design life, with whole life cost benefits a secondary consideration.

An informed or progressive thinking client, seeking to optimise the value from its assets and return on investment, may take this concept to the next stage by informing its project implementation decisions through adoption of a total expenditure (TOTEX) approach to asset management. In such a case, the project benefits would be framed to reflect the intended TOTEX benefits to be delivered.

2.2.3 Expectations and compliance

Stakeholders may include industry partners, impacted third parties (from local football teams to local authorities), beneficiaries or opportunists. All stakeholders have an interest, of some nature, in the project.

Stakeholders may be identified through a process of stakeholder mapping. Once identified, the requirements established through this process can be flowed down through the supply chain and tracking can assist the client in ensuring that any and all expectations are met or managed.

Some expectations may become embodied in statute as undertakings and assurances (U&As – the expectations of stakeholders including legal, contractual and moral obligations), or as obligations in third party agreements. Other expectations come from what is seen as emerging best practice, e.g. project bank accounts, use of BIM, lean construction and sustainability. Some, like safety, come from both and are continuing to evolve.

Expectations may include minimising disruption, compensation and other wide-ranging factors. There are reputational expectations that increase with the scale of the project, up to moving the industry forward and demonstrating and creating world-class performance. There are also derivative benefits expectations, which may include supporting the local economy or the flow of money into the supply chain.

While obligations can be flowed down a supply chain, responsibility to ensure that all U&As are met remains with the client.

U&As may be recompense for those directly affected through compulsory purchase and interference with access or trade. Others may have direct commercial agreements in place. The general public interest is also a stakeholder, with an expectation that project delivery will achieve best value.

A client should know the project stakeholders, have an understanding of the expectations they have placed upon the project, determine which ones it will meet, and be able to demonstrate that they have been met. Gathering this knowledge and making these decisions will enable the client to establish the values, priority themes, critical success factors, policies and principles that it will use to guide it through delivery of the project. While these may be revisited during the life of the project, in practice, if they are properly considered at the outset, they will change very little but may be refined and further refined as the project evolves through its various stages.

While the primary objective of the client is to deliver the scope to realise the benefits of the business case for the sponsor; stakeholders influence the way in which that scope is delivered. Clients may need to manage a large number of stakeholders. Meeting the expectations and managing the complex inter-relationships of the myriad of stakeholders with an influence upon or affected by the project, without compromising the objective to deliver the scope, is a significant challenge.

Meeting stakeholder expectations can be achieved in many different ways, ranging from placing obligations on the supply chain through formal agreements and legislative requirements. The wider expectations placed upon the client are embodied in the way the client delivers the project.

For the Crossrail project, the *Crossrail Act 2008* put in place a number of U&As that would be delivered or met in the process of delivering the project. The U&As are third party agreements or unilateral undertakings. Crossrail mapped and monitored how it met the U&As and how they flowed down into the contracts and through the supply chain. Crossrail also captured sponsor and stakeholder expectations through its mission statement and values.

Example: The project to deliver the London 2012 Olympic and Paralympic Games infrastructure resulted in a myriad of stakeholders emerging, ranging from local authorities through to national sporting associations and non-departmental government organisations – these all saw investment in the project as an opportunity to elicit benefits for their chosen interest group. This resulted in the development of a balanced scorecard, which is shown in section 2.2.8.

Example: A project to deliver major modifications to a European oil refinery required the instigation of an extensive stakeholder engagement and management plan, to address a wide range of often conflicting environmental and economic development concerns. Issue priority matrices were utilised to prioritise stakeholder issues and inform the development of detailed stakeholder engagement plans.

The client should always be striving to exceed and improve upon best practice to provide best value for money.

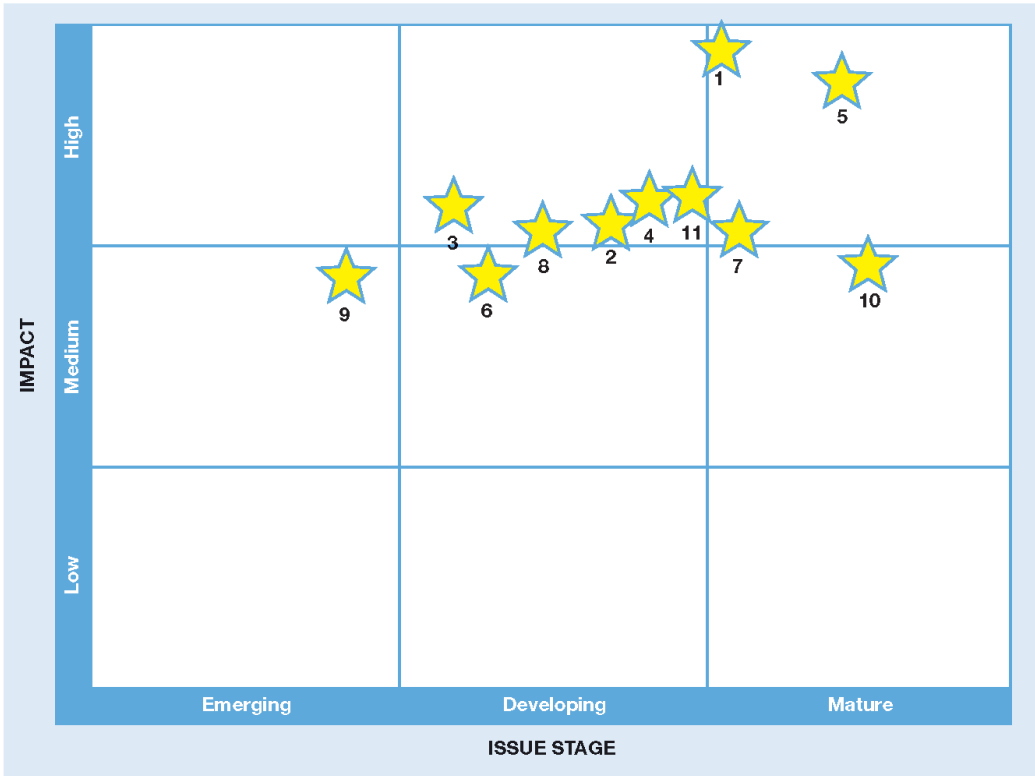


Figure 3: Impact matrix

2.2.4 Using relevant information

A client will continuously review the available body of knowledge and extract relevant information to optimise its fitness for purpose to deliver the requirements⁶; and it should consider what in the available body of knowledge it should take into account as it establishes its optimal approach.

The challenge for the client is how best to approach this task. The key is to ensure that it finds the balance between what is tried and tested and what is right for the project, which may lead to bespoke solutions to best meet the project's needs. The outcome of the research will influence the client's thinking in relation to its governance structure, its organisational structure and its delivery strategy and approach.

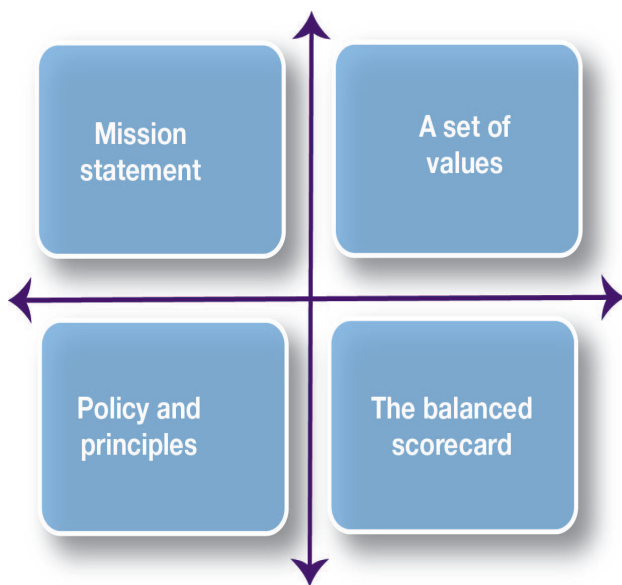


Figure 4: Key areas diagram

Lessons learned from other projects will be a cornerstone of the information against which the client will make its decisions.

2.2.5 The mission statement

As previously noted, a client should establish a mission statement that encapsulates the objectives to be achieved by the project, contained in the requirements.

The mission statement will seek to encapsulate the requirements into a single goal with which everyone involved in the project can align and work as a single mind to realise the benefits.

A concise and considered mission statement provides the project with a single target and ultimate aim, and a benchmark against which to check every decision – does this decision take me closer to achieving the mission statement?

Example: Crossrail has a mission statement, which is to deliver 'a world-class, affordable railway delivered through effective partnerships and project excellence.' This mission statement was revisited a number of times during the project but in essence remained unchanged.

2.2.6 A set of values

A client should establish a set of values to align behaviours within its organisation to meet stakeholder expectations, having taken account of all the available information.

Example: Crossrail established a set of values, which were used to ensure that everyone involved in the project understood the priorities and focus. Those values generated behaviours aligned with the aims of the project, which were:

- safety first
- collaboration; and
- innovation.

Example: Thames Tideway Tunnel (TTT) – The project team has developed a set of 'value streams' reflecting those values which the contracting entity regards as critical to the successful delivery of the project. The contracting entity will apply these value streams throughout the project's development, financial close and most importantly beyond, to inform the TTT evaluation and award criteria and to inform requirements in the Infrastructure Provider and construction contractors. The project team's rationale is that things that are important do not cease to be important at any stage, and post contract incentivisation will seek to benchmark performance around those values by the use of key performance indicators (KPIs).

2.2.7 Policies and principles

A client should establish policies and principles that guide the organisation in the way in which it will deliver the project in every area; health and safety, technical, procurement, commercial, sustainability and so on. These provide the client with a map of the expectations it has of itself and a benchmark against which to consider any action and behaviours that it is demonstrating.

2.2.8 The balanced scorecard

(see also Section 6.1)

A client establishes a balanced scorecard to enable it to effectively communicate its values to the sponsor, stakeholders and the supply chain. This then allows the client to align its engagement with the supply chain with its objectives, and to monitor and manage its supply chain against these.

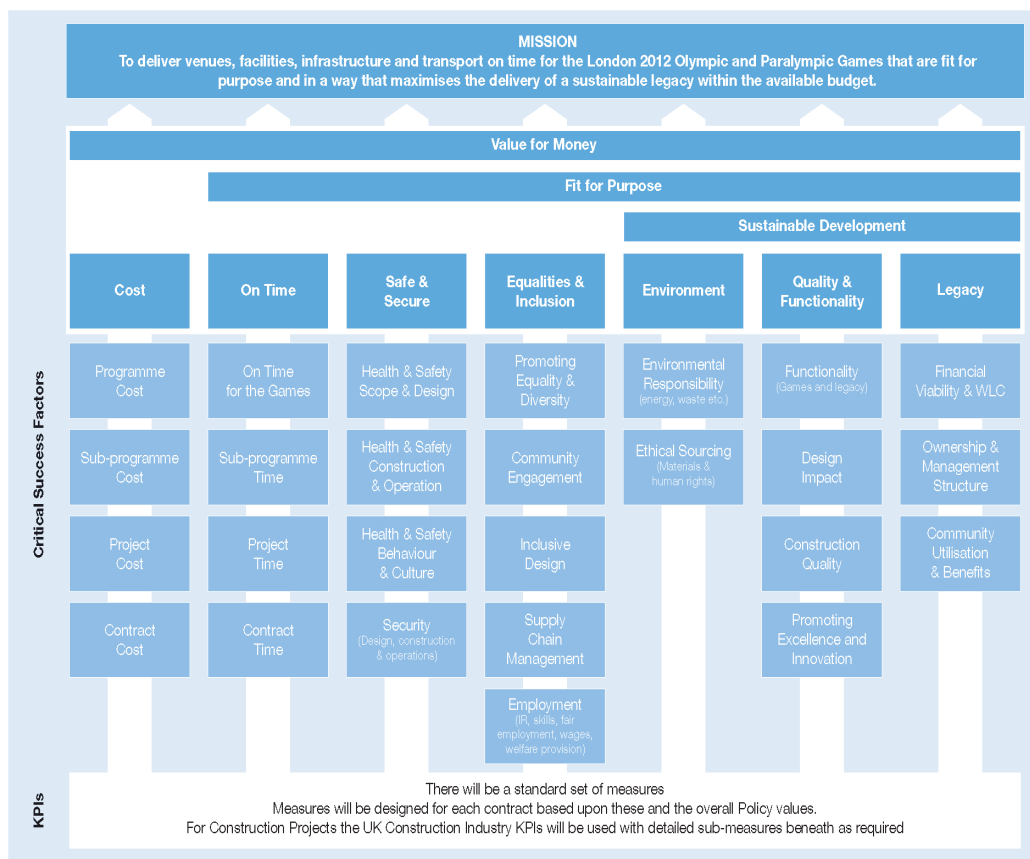


Figure 5: The balanced scorecard

A balanced scorecard captures objectives, principles, behaviours and values, which together should facilitate meeting the primary overall objective contained in the mission statement.

The supply chain exists to make profit, but also has long-term ambitions within a hierarchy of needs. The hierarchy of needs can be summarised as reputation, remuneration and benefits realisation.

A balanced scorecard should generally focus on the non-financial aspects of the requirements. It can be used to establish league tables between contractors to illustrate performance in any of the requirement areas, such as community support, apprenticeships, carbon achievements,

and lean construction. Focusing on the pinnacle of the hierarchy of needs, the application of the balanced scorecard throughout the project aligns actions to achieve the benefits.

The balanced scorecard is an area of development where the benefits for moving the industry forward do not yet appear to be fully appreciated. Further development in this area is a benefit to the industry and its potential to influence every area of a project's life is not to be underestimated.

In developing a balanced scorecard, consideration should be given as to what behaviours are being encouraged, and to the client's approach to involvement in the supply chain and its procurement process.

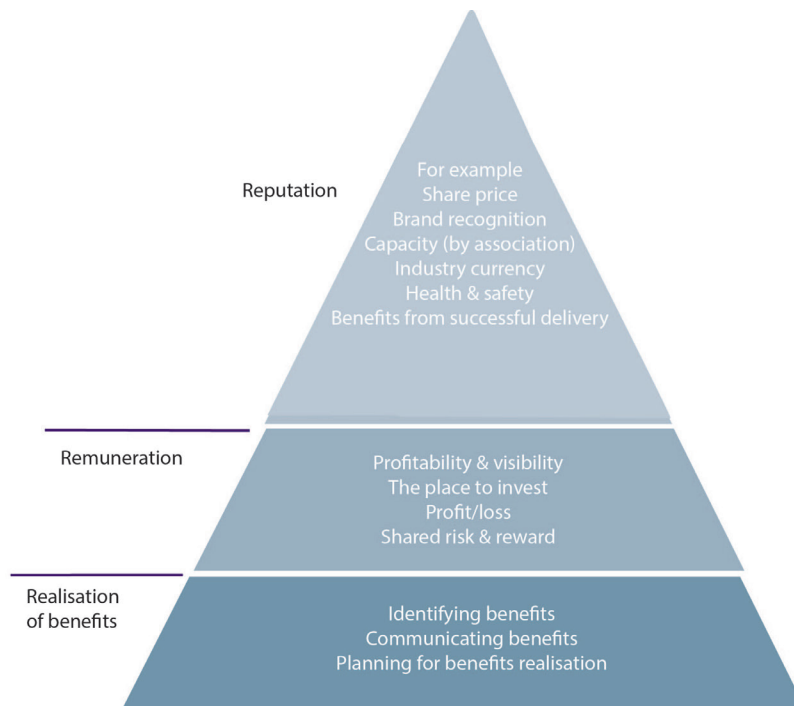


Figure 6: The hierarchy of needs

Example: The ODA had a very 'hands-on' approach to its involvement in the procurement of its second tier supply chain, embedding procurement managers into the Tier 1 contractors' teams to coordinate and assist in the management of procuring the supply chain across the programme. Conversely, Crossrail took a more 'hands-off' approach, entrusting proper procurement of the supply chain to the first tier suppliers, but made use of standard terms and conditions, and acceptance of subcontractors through the use of the NEC form of contract, a requirement of the Works Information.

During the procurement process, award criteria and sub-criteria can be used that reflect the values, objectives and principles embedded in the balanced scorecard. The tender process offers the suppliers and their supply chains the opportunity to demonstrate how they will meet these criteria. The use of the balanced scorecard post contract can measure a contractor's performance against these criteria and enable further development, without compromising the integrity of the risk allocation between the parties. Furthermore, the balanced scorecard could be used to embed a contractor's tender proposals into the contract without compromising the integrity of the procurement process. It can also be used as part of the selection and evaluation criteria for award of call off contracts under a framework agreement.

3 Governance

Governance provides the structure for decision making within an organisation. The effectiveness of this function will be a significant factor in determining the success of a project. Through the governance system, the executive of a client manages the risks related to achieving the objectives of the organisation and provides assurance to its stakeholders and sponsor that their expectations are being met.

3.1 The importance of good governance

Weak governance has been cited as a common cause of project failure⁷. The Institute of Civil Engineers (ICE) 2009 Best Practice Guide lists effective governance as 'one of the six key responsibilities for client organisations'. In 2011 the National Audit Office (NAO) published *Initiating Successful Projects* and a number of the key elements identified in the report are reliant on good governance to support the initiation of a project.

On any project, a clear and efficient decision making process is essential to allow effective progress to be made in delivering the requirements. The executive is the ultimate decision-making body within a delivery client team for a particular project and endorses the mission statement, the values, the priority themes and the critical success factors that can be captured in a balanced scorecard for procurement and performance monitoring and management. Getting these basics right is crucial to developing a team with members that are all working in the same direction. The larger and more complex the project, the more important good governance becomes and without good governance a project can become overly complex.

A chartered surveyor should understand the principles outlined in this section that support good governance, to be able to provide professional advice to clients. These principles are contained within four areas of consideration in the routemap:

- accountability
- authority
- alignment; and
- disclosure.

A client that has been tasked with a project may also need to demonstrate that it is fit to deliver that project; in essence this is demonstrating a level of competence communicated through its governance function.

3.2 Demonstrating fitness to deliver

Whether a client organisation is in its infancy or is an established client, it may need to demonstrate its competence to deliver the requirements to the sponsor and to its stakeholders.

Example: For the Crossrail project the company:

*'earned its autonomy to deliver the programme by passing a series of challenging review points to demonstrate that the organisation and the programme was sufficiently well-developed and capable to proceed'*⁸.

By passing the requirements to meet Review Point 4, the sponsors released Crossrail Limited to autonomously deliver the requirements⁹.

3.3 The accountable manager

A client should identify the accountable manager who is ultimately responsible for delivering the requirements. The organisation supports this individual. A project needs a clear framework of accountability and delegated authority. Senior management oversight of a project has been identified as a key requirement for success¹⁰.

To support the accountable manager, the client organisation must have:

- a decision hierarchy that allows for effective decision making
- the requisite delegated power to make decisions throughout the organisation
- clear accountabilities and responsibilities
- people with appropriate skills and experience
- promotion of the appropriate attitude and behaviours
- the necessary support framework
- the flexibility to change over time to meet the project's needs; and
- appropriate governance processes and procedures.

In *Managing risks in government*¹¹ '...risk management is most effective when ownership of and accountability for risks is clear...' is recognised as one of the key principles identified in the report, and that this is important because:

it provides assurance to the board and leadership that important risks are being effectively managed and, where necessary, escalated; and

it allows the client to intervene on risks being managed by third parties, where necessary, where the framework of accountability is contained in contractual terms and conditions and supplier management arrangements.

Example: The Laidlaw report into the failed procurement of the Intercity West Coast Competition recognises that a contributory factor to the flaws that caused the failure included, at 3.12.3 that:

'...the organisational structure at the DfT failed to set out roles, responsibilities and associated accountabilities clearly...'

And at 3.12.4 that:

'...the effectiveness of the governance framework was severely reduced by the lack of clarity in the functions, authorities and interrelationships of various committees and boards...'

3.4 The decision hierarchy

A client should establish and maintain a robust decision-making structure supported by independent assurance processes. A good governance regime will establish and maintain an auditable and transparent decision hierarchy that separates strategy decisions from financial authority. Individual decision-making authority at a senior level on significant matters of strategy should be minimised. Providing flexibility within the process for ad hoc quorate meetings of the key decisions makers should allow decisions to be made within appropriate governance.

Good governance may include maintaining a clear separation between employer and project manager functions and defending the impartiality of the project management function in matters of certification and assessment.

3.5 Maintaining constructive challenge

A client should maintain effective and continuous constructive challenge to ensure its alignment with the project objectives.

Decision making is best undertaken with a degree of challenge, supported by expert advice and underpinned by an assurance process that provides confidence, such that decisions are undertaken in accordance with approved process, procedure and best practice.

One way in which clients may provide expert advice and challenge is through the use of expert panels.

3.6 Expert advisory panels

Expert panels can provide critical advice on all aspects of a project and can assist and challenge individual parts of the business, such as procurement or technical, to suit the needs of the project.

Expert panels should be managed by the head of the relevant directorate, in alignment with the decision making hierarchy, but should have a reporting line directly to the accountable manager in order to maintain the integrity and independence of the panel in all matters.

These panels may respond to requests from the directorate or may request information on an area of risk, to understand how the directorate is dealing with a specific issue. The panel, whose function is to give independent and, if necessary, critical advice, might be termed the 'critical friend'.

The function of expert panels may be purely advisory, providing an opinion on certain matters, or the panel may itself identify matters on which it wishes to give an opinion; alternatively the panels may be directing, in that they may give advice directing an organisation on the most appropriate way to meet the needs of the project.

With the former approach, the client has a means of checking itself and providing assurance to its own decision making process. With the latter, the client uses the expert panel to give advice on the most appropriate steps the client could take to deliver the objectives. In either situation, the client is free to follow this advice or take an alternative approach; however, if an alternative approach is taken, the client should be able to justify its decision. In this way, the decision-making is transparent and, through effective challenge, can be seen to be a considered evaluation of options and risks. Ultimately, the client is responsible for delivering the requirements to realise the benefits of the business case.

Expert panels should be embraced as a force for good within a project rather than seen as an interfering hand in delivery. The purpose of the panel is to give independent advice from experts in the relevant field in order that the risks and potential mitigations are properly understood in the decision making process. Using expert panels protects the risks to the realisation of the benefits of the business case and allows for a more efficient use of resources in the organisational design and development.

Projects that have used expert panels are Crossrail 1 and the London 2012 Olympic Games. Crossrail used expert panels as an advisory group while the ODA used the panel for compliance and oversight.

As an example of expert panels, the Crossrail project made use of an expert procurement panel. The project successfully delivered all major contract procurements within the time constraints and without a single successful challenge.

3.7 Managing over-optimism

A report by the NAO, *Over-optimism in government projects*, recognises the risk that over-optimism presents to the successful delivery of projects. The report identifies areas that contribute to over-optimism, which include:

- Independent challenge and accountability:
 - failures of governance to address weaknesses in planning; and
 - project being approved despite flaws.
- Complexity:
 - an incomplete understanding of the challenges departments are taking on; and
 - failure to put skills, resources and experience in place to manage it.
- Stakeholders:
 - failure to appreciate the impact and value added from others outside the immediate project team introduces risk.
- Behaviours and incentives:
 - the tendency to be over-optimistic whether unconsciously or deliberately; and
 - the risk that a culture of short-termism within the organisation may exacerbate a problem.
- Evidence base:
 - weaknesses in the quality and appropriateness of data and modelling techniques distorting the information on which decisions are taken, which mask the risks.

4 Organisational design and development

Governance plays a key role in managing expectations and challenging the process to minimise the risk of over-optimism, and ensure that the functions all have a realistic and properly considered approach to their tasks.

To deliver the requirements a client should establish an organisational design and development strategy to ensure sufficient resources with the necessary skills at the right times. A client should determine the right balance of in-house and imported resource, and facilitate effective communication and decision-making within the governance structure aligned to the mission statement, values and the critical success criteria.

A client needs to understand its requirements, governance, execution and procurement strategy, and to determine its organisational design and development strategy.

4.1 Why it is important

A client's ability to effectively deliver the requirements is dependent upon having the right resources available at the right time and in sufficient numbers. The spectrum of procurement options ranges from direct delivery to completely outsourced delivery under private public funded, vehicle-type projects. This section is not considering the resources provided by the supply chain; this resource requirement is captured by procurement.

This section considers the client body, how it is defined, how a client may approach the task of determining its organisational design and how it might develop its strategy to keep the organisation (or relevant parts of it) fit for purpose throughout the life of the project. The life of the project may be from initiation to completion of construction or through the asset life to its ultimate disposal.

An organisation delivering a project is by necessity, constantly evolving to meet the needs of the project. With some projects, this can include phasing itself out of existence once the project is complete.

4.2 What is 'the client'?

In the context of organisational design and development, it is important to appreciate what is considered within the scope of the term 'client' and the perception that this term may change over the life of a project.

The directly employed staff will always be seen as part of the client however, beyond this basic definition, the client may include agency staff, directly engaged temporary workers, programme partners, delivery partners and the like. What may be considered as within the client body will be determined in part by how the client sees itself, by how it organises its governance and in part by its organisational design.

4.3 The client's position and time within the market

A client should develop its organisational design to interact with the markets in which it will be operating. This will be affected by the market's position in its economic cycle; whether it is a period of surplus demand or supply within the market. The economic climate will influence a client's thinking on its ability to attract the right resources and the extent to which it will need to supplement its in-house resource. The nature of the interaction with the market will be determined by a combination of the market and the procurement strategy adopted.

Prior to engaging with the market in the procurement process, a client should understand its position within the markets with which it will engage, to inform its organisational design strategy. By gaining market intelligence a client can understand the capacity and capability of the market and begin to consider how it will need to organise itself to best exploit the market's capabilities. This understanding of the market is not market engagement, as carried out under procurement, but market understanding to inform its decisions on organisational design and development.

4.4 Inter-relationship

The outcome of the complexity/capability gap analysis will provide a client with a good understanding of the challenge for its organisational design and development. A clear understanding of its requirements, governance, execution and procurement strategy should also be factors in determining the most appropriate organisational design and its development over the life of the project.

From the requirements, a client will not only understand the scope but also the stakeholder expectations of the way in which the project will be delivered and the requisite skills that will be necessary for these elements of the client function. The governance will determine the decision making hierarchy of the organisation and the support that will be necessary for the accountable managers to be able to make informed decisions.

The execution and procurement strategy will have a great influence on the shape, scale and nature of the client. These different facets of the project all impact on the organisational design and create a tension that requires the client to determine, manage and assure the organisational structure, in particular considering the level of in-house resource as against external resources of whatever type.

Understanding the approach taken by other projects will assist a client in the development of its organisational design and development strategy.

4.5 Progressive organisation

A client that is developing a progressive organisation should promote a collaborative approach to contracting. This is an organisational philosophy that will be supported by contract selection, not created by it.

4.6 Skill and capacity flexibility

Maintaining the flexibility to have the right resources in the right quantities at the right time, even when you do not know exactly what those requirements might be, may be fundamental to successful project delivery. Clients may consider delivery partner models that provide this flexibility in addition to its fixed staff resource and its ability to flex this element through the use of temporary staff.



Figure 7: The circle of organisational elements

5 Execution strategy

5.1 Purpose

A client develops an execution strategy for delivering the project. It captures the product for governance, organisational design and development, and procurement. It demonstrates to the sponsor a common understanding of the objectives and provides confidence in the client's ability to deliver the requirements. Its maintenance provides a record on progress and assurance to sponsors and stakeholders as to how and whether the obligations and assurances have been or are being met.

6 Procurement

A client develops its procurement strategy as part of its execution strategy, to deliver the requirements in parallel with the development of its organisational design and development and its governance.

An informed infrastructure client should adopt best practice procurement¹².

'Government should adopt the principles of the procurement and programme management approach used by the ODA (Olympic Delivery Authority) for all public sector projects valued at over £10m...'

Sir John Armitt, London 2012: *A global showcase for UK plc*

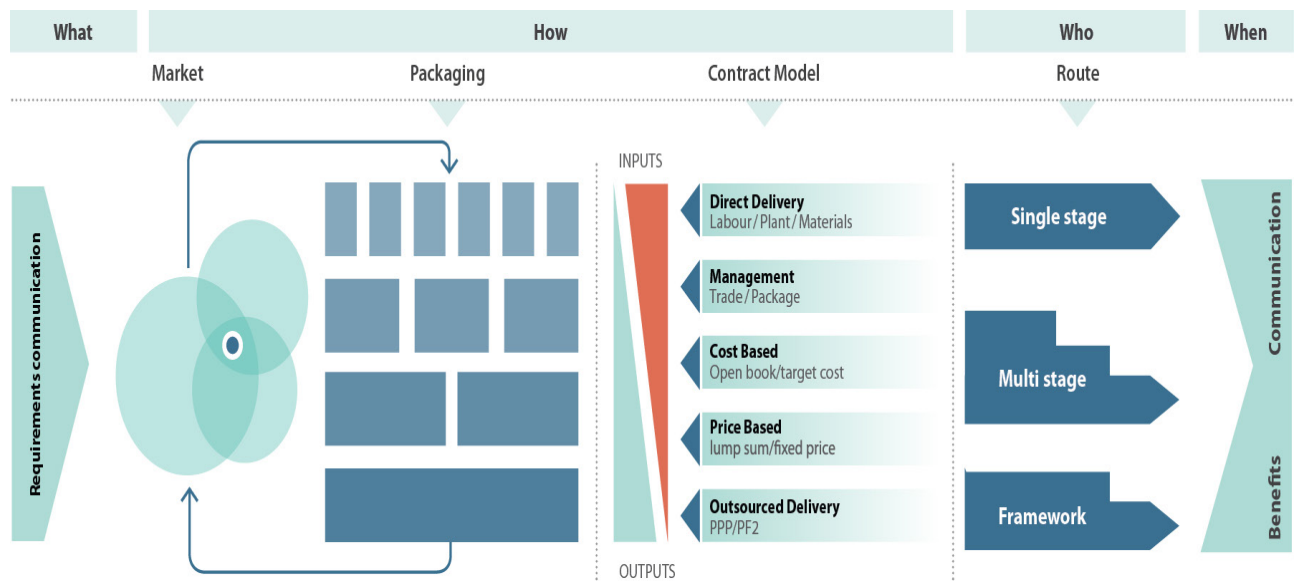


Figure 8: The procurement module

6.1 Balanced scorecard

(see also Section 2.2.8)

As described earlier, a client understands the requirements and utilises the balanced scorecard to award the necessary contracts. Using the balanced scorecard to award contracts is an area of development for construction and is not currently common practice.

As set out in Section 2, requirements for a project are a combination of the specific objectives set within the business case and the client’s determination of the balance of the relevant wider requirements of stakeholders, including legal, social, environmental and economic factors. The requirements establish what the completed project will be or what it will deliver; these will also establish what additional requirements and methods of delivery the client will need to adopt to achieve the desired outcome and realise the expected benefits.

As previously stated, the sponsor establishes the requirements in terms of scope, which will comprise the specific asset or outcome and the budget within which the project will be delivered, together with any pre-existing constraints within which the client should operate. Other elements of the requirements will derive from stakeholder engagement and commitments, market understanding, legal rules and regulations, lessons learned from previous projects and soft elements through social, environmental and economic factors (known as the ‘triple bottom line’).

To successfully deliver the requirements and achieve the anticipated benefits realisation it is essential to embed the critical success factors and priority themes throughout the procurement process. The mission statement, values, objectives and deliverables then provide a roadmap to achieving those requirements and help the client determine what constitutes value for money when making project decisions.

Requirements should be well established prior to engaging with the market. This does not preclude early understanding of those markets as necessary

to understanding the complexity of the challenge, or the capability of the market when making early organisational design decisions on the options for organisation structure to best interface with the markets.

Establishing a balanced scorecard early in the life of a project will assist the client in maintaining a focus on the requirements and benefits realisation. This gives the client a clear vision as it develops and evolves its organisation to meet the needs of the project and as it makes its procurement and delivery decisions. The weighting of a balanced scorecard allows the client to keep a clear and constant but evolving focus on its objectives throughout the life of the project.

Through clarity of requirements the market understands what it must do to meet the expectations of the client and stakeholders. Programmes, by their very nature, are not simply about providing the relevant infrastructure asset but need to also deliver triple bottom line success. The extent to which the client achieves the requirements can be measured through KPIs that are aligned with the priority themes and the identified critical success factors.

The process can be supported in the contract administration stage by a commercial assurance process, which monitors progress in delivering performance and the extent to which this meets the requirements. The client can then use this information in the post contract stage to improve contractors' performance through commercial incentive or reputational necessity.

The client should determine the extent to which it wishes to influence or impose its requirements on the lower tiers of the supply chain and how it wishes to structure and organise its interface with the supply chain. The level of intrusion into the lower levels of the supply chain will also be a measure of the potential risk transfer back to the client as the employer. Positive engagement that supports these tiers to deliver the client's requirements can be extremely valuable, particularly in the support of a contractor's supply chain procurement activities, giving assurance that these will allow the supply chain to be procured and meet the project's needs.

6.2 Market engagement

A client uses market engagement to raise appetite and test the strategy (see the Procurement module at Section 6):

- an informed infrastructure client engages with the markets it operates within to develop and test its procurement strategy and maximise the appetite for its requirements; and
- an informed infrastructure client uses the knowledge gained from market engagement to develop its packaging, contract and commercial risk allocation and its route to market.

An informed client engages with the relevant markets from the earliest stage in the life of a project. This engagement is an iterative process for testing and understanding the markets at every stage of the procurement process to

inform decision-making. It is important that the client uses the information to make its own decision rather than take the decisions that the market wants, which will be biased in the suppliers' commercial interest. A client determines the most appropriate strategy and tests the market to establish whether there is the capability, capacity and appetite for the preferred strategy.

A client does not sit on top of the market it is engaging with but within it. It may be a significant client to some suppliers, but a minor client to others. It achieves confidence in its ability to deliver the requirements and the market gains confidence in the client's competence and capability to engage with the market. That confidence is created through the way in which the client interacts with its supply markets, the procurement decisions it takes and the contracts it puts into place. The client's behaviour is also important in shaping the relationship post contract in addressing contractual and commercial issues that arise, and cannot be resolved through the standard contractual procedures.

Proper engagement with all parts of the market will seek to understand not only the capability, capacity and appetite but also the constraints.

Early and appropriate market engagement allows the suppliers to develop their capability, engage within the market for joint venture partners and best prepare themselves for the procurement process and the potential delivery opportunity. Through this process, the client gains confidence in the sizing and scope of the packages.

A client should establish a thorough and considered engagement plan that has the flexibility to adapt as market intelligence is produced.

6.3 Packaging strategy

A client develops its packaging strategy with proper consideration of the interface and delivery risks and how these will be managed (see the Procurement module at Section 6).

Packaging separates the scope to align with the relevant markets, the anticipated competency and capacity of suppliers anticipated to bid for the work, and establishes the physical and contractual interfaces. The packaging also seeks to balance the most appropriate distribution of the works and services taking into account the nature of the project, for example location, logistics, technical interfaces, practicalities and programme.

The packaging strategy will also have a direct effect on the way in which the client engages with the market, whether on a traditional basis, engaging with the first tier suppliers or on a primary suppliers' basis, such as Heathrow Airport Terminal 5, where the contractual chain was directly with suppliers through the supply chain rather than across it.

The packaging strategy establishes the framework within which the project will be delivered and will influence the organisational design and development. Packaging will be influenced by the client's appetite for risk, its perceived

level of expertise, either in-house or to be engaged, and will reflect the conclusions derived from market engagement.

Appropriate market engagement provides the client with confidence in the robustness of the developing procurement strategy and enables the packaging element of the strategy to be fixed.

In determining the appropriate packaging strategy, risk assessment of the interfaces will need to be undertaken to determine the optimum balance for project risks.

Common components should be considered at the packaging stage. Which elements need to be common across packages, for maintenance, or aesthetic or operational reasons? Early identification of these elements is important in that it may be better for the client to procure these directly to obtain consistency or to set up an arrangement that enables the supply chain to access the required items. These items may need to be separately procured in advance of the main packages so that they can be fully integrated at the time of tender and incorporated into the contract at award, rather than embarking on a complex post award negotiation where there is no longer the commercial necessity to accept and incorporate such contracts on competitive terms.

Overarching behavioural agreements such as alliancing or partnering might not offer sufficient demonstrable benefit at the outset of a programme. These are sometimes best established when particular issues can be identified or risks materialise, and proportionate and appropriate measures can be put in place to align the commercial interests of contractors with the objectives of the client.

Packaging may include clustering where there are sensible groupings of similar outputs, e.g. stations, tunnels, etc. Clustering can provide consistent decision making in relation to these groups.

Packaging may also be influenced by the availability and timing of funding, which may determine that enabling packages need to be identified to allow early works to be carried out. This creates a tension between optimising the scope within a package and the available funding and can lead to inappropriate packaging from a technical perspective; for example, where both a main works contract and a preceding works contract require the establishment of piling rigs on the same site, the value for money can be eroded and reduced due to this constraint.

Example: The 2012 Olympic Games: The programme constraints on the delivery of the infrastructure for the London 2012 Olympic and Paralympic Games was such that the early enabling, remediation and demolition contracts had to be commenced prior to the creation of the client organisation. The speed of delivery required and the emerging scope of the enabling works lead to a decision to let overarching geographically based contracts and

then for the Tier 1 contractors to subcontract to specialist contractors to undertake the works. Utilising the Tier 1 contracts to manage the coordination of the schedule, logistics, etc. might not have delivered the cheapest price but did enable the critical early works to get underway in line with the schedule requirements in order to meet the delivery date.

6.4 Contract selection

A client selects a form of contract that aligns with its philosophical approach to the market, reflects its appetite for risk, and aligned with that then allocates risk to the party best able to manage it:

- an informed infrastructure client should allocate the contractual risk to the party best placed to manage it, recognising that a client never ultimately avoids the delivery risk
- an informed infrastructure client should select its contract form from its appreciation of its mission statement, values, policy and principles, objectives, success factors and priority themes; and
- an informed infrastructure client should select its commercial risk position based on a clear understanding of the market in which it operates.

The contracting strategy determines the appropriate contractual risk allocation, form of contract, financial risk allocation and contractual processes. The client's decisions and selections will be influenced by the soft elements of the requirements through the mission statement, the values, policy, principles and priority themes.

As stated in Section 4 – Organisational design and development, a client that is developing a progressive organisation will promote a collaborative approach to contracting. This is an organisational philosophy that will be supported by contract selection, not created by it. Other factors that may influence client contract decisions are the knowledge of, and tools to manage, a particular form or bespoke requirements of the technical solution that may dictate specific provision requirements.

Contract selection and bespoke amendments reflect the client's decision on the appropriate allocation of risk for any particular package, taking account of stakeholder expectations and market appetite. The five options for contracting in the following diagram reflect an increasing or decreasing appetite for managing the financial and delivery risk. Within a project all options may be appropriate for different packages.

6.5 Route to market

A client determines the most appropriate route to market (see the Routemap at Section 1.1).

The route to market may be through a framework arrangement or a single or multi stage route. Frameworks are popular where the total scope of the requirement is unknown or is going to develop over time. Frameworks allow a group of suppliers with the capability and capacity to be identified ready to undertake the emerging scope. The award of the framework contract may include the fixing of contractual and to some extent, commercial elements.

Compliance with procurement regulations may have an influence in determining which route to follow, recognising the increased risk of a failure in the procurement process as the complexity of the process is increased.

Single or multi-stage route decisions are influenced by a client's perception of benefits to be derived from the alternative approaches. The greater the simplicity of the procurement processes the lower the risk of a procurement challenge, even on complex procurements. Every decision taken in a procurement process that has not been properly pre-planned has the ability to lead to the failure of the entire procurement process especially when compliance with procurement rules is required.

If a successful procurement challenge is made this has the potential to significantly delay the programme for the project. This is a significant risk for a programme and a successful procurement challenge is likely to be very high on the risk register for a project.

For some clients, the perceived benefits from an early engagement with the supply chain for the purposes of determining value engineering improvements to the requirements, may promote the use of higher procurement challenge risk routes to market, carefully designed and managed to provide these benefits.

6.6 Benefits realisation

An informed infrastructure client achieves the benefits realisation envisaged by the sponsor by delivering the requirements.

Conclusion

This guidance note contains the building blocks to enable the delivery of infrastructure benefits; to enable members to relate to a highly complex project or programme environment, appreciating that a number of steps are required before a contracting model and transaction model are conceived.

The guidance note sets some key points including:

- the recognition that a client body exists within a series of markets and needs to appreciate the varied relationships with the suppliers within each
- that requirements should be summarised in a way that can be easily communicated to the broader market such that the appetite to supply can be ascertained and business drivers can be understood and appreciated
- that the function of packaging the deliverables should clarify the interfaces that the client and supply chain determine is best and the client can configure the delivery organisation to manage the interfaces created, mitigate risks, and realise opportunities
- that there are only a limited number of contracting types, that these can only be effectively considered once the interfaces from the packing process have been defined and that clients should be able to articulate the allocation of the risks for management and mitigation by others, or total transfer
- that the route to market, the procurement route, is a balance of effectiveness and efficiency and that the process of down-selection should be as carefully considered as the award decision
- that the sustainability of relationships within the supply chain should be considered; the management or transfer of risk should be appropriate between the parties, and that such allocation or transfer can be maintained through delivery; and
- that the purpose of the project or programme should be maintained with clarity throughout the duration so that the client and supply chain understand when they have arrived at the outcomes required, and what that tangibly represents.

Above all, this guidance note seeks to inform those working in the broadest definition of the global Infrastructure sector that best practice approaches to delivery involve the considerations above as a minimum. Once a programme of infrastructure work is contracted to the supply chain it is often too late to wholly alter the outcome; it is earlier in the delivery process through the clear articulation of requirements, client on-going immersion within the supply chain and consideration of appropriate and sustainable risk transfer that success is defined.

Finally, that complex infrastructure projects or programmes are undertaken through people who have relationships, which by observing the steps articulated within this guidance note, can be better informed and thus harnessed, orientated and aligned for optimal delivery.

Endnotes

¹The IUK Routemap guides a client through the stages of gap analysis, requirements, governance, organisational design and development, execution strategy and procurement

² Delivery Environment Complexity Analysis (DECA) – Created in 2013 by the UK NAO

³ Initiating Successful Projects, December 2011, NAO

⁴ Initiating Successful Projects, December 2011, NAO

⁵ Initiating Successful Projects, December 2011, NAO (a sample of over 40 projects)

⁶ There is an expansive body of knowledge available to clients, for example in the UK the client can refer to the Cabinet Office, the National Audit Office, Constructing Excellence, Infrastructure UK and many other organisations

⁷ The OGC in the 2005 report *Common Causes of Project Failure*

⁸ NAO Report, Crossrail, 24 January 2014

⁹ With the exception of the rolling stock in which the DfT retained ownership

¹⁰ Lessons from cancelling the Intercity West Coast franchise competition, NAO report, December 2012

¹¹ *Managing risks in government*, NAO, 2011

¹² This approach has delivered the Olympics and has been used on the Crossrail Programme

Sources of further information

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