

The utility of standard setting at an international level for domestic procurement regulation in Africa

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Abstract:

The public sector procurement system needs to deliver cost effective goods and services in support of a nation's economic prosperity and welfare aspirations. Such goods and services may be required for consumption purposes to enable officials to perform their duties or to create the necessary infrastructure for them to do so or required to achieve improvements or efficiencies in services, production or export capabilities.

Goods and services required for consumption typically involve off the shelf products, readily available commodities and standard, well-defined scoped and specified services. The delivery and maintenance of infrastructure requires that products be developed, altered or maintained on a site necessitating the procurement and management of a network of suppliers, including subcontractors.

Procurement outcomes in infrastructure projects are sensitive to the decisions made during the planning, design and execution of projects as well as during procurement processes. Procurement yields the necessary resources to delivery projects while delivery management deals with the management of projects which collectively delivery strategic objectives and realise anticipated benefits.

Standards provides rules, guidelines or characteristics for activities or their results for common and repeated use, aimed at the achievement of the optimum degree of order. Procurement processes and forms of contract for all types of procurement as well as delivery management processes can be standardised and documented. Standardisation can amongst other things remove uncertainties in processes, improve the predictability of procurement outcomes, improve efficiencies and reduce risk pricing. International standards cover the range of options which may be encountered and as a result enables a strategic approach to procurement above the project level to be taken.

This paper explores the opportunities and benefits of using international standards to regulate procurement in Africa in order to derive better value for money within the public sector.

1 Introduction

According to Arrowsmith (2010), there are three phases to the procurement process, namely a planning process which decides where goods or services are to be bought and when, the process of placing a contract following a selection procedure and the administration of a contract to ensure effective performance. Arrowsmith makes the observation that regulatory rules generally focus on the second phase as legal rules and other regulatory measures become important tools of policy. This results in the narrow view that public procurement is “government’s activity of purchasing goods and services it needs to carry out its functions” (Arrowsmith, 2010) or “the acquisition of goods, construction or services by a procuring entity” (UNCITRAL, 2014). Value for money, and the associated regulatory rules, in this context focus on obtaining the goods or services on the best possible terms, typically for a single procurement transaction and is often linked to the concept of economic efficiency.

On the other hand, if the focus is on all three phases, a more expansive definition of procurement is the “process which creates, manages and fulfils contracts” (ISO 10845-1:2010). Value for money in this context is very different and may be applied to the aggregated outcome of a number of contracts which have dependencies in relation to a project. Accordingly, it may be regarded as the optimal use of resources to achieve intended outcomes. Underlying value for money is an explicit commitment to ensure that the best results possible are obtained from the money spent or maximum benefit is derived from the resources available. It is a means for developing a better understanding (and better articulation) of costs and results so that more informed, evidence-based choices can be made. Value for money needs to be assessed during the delivery cycle of a project using the so-called three “Es” – economy, efficiency and effectiveness at the end of the planning, implementation and close out stages of a project, respectively (see Figure 1). An overarching fourth “E” also needs to be considered, namely equity (Watermeyer, 2013).

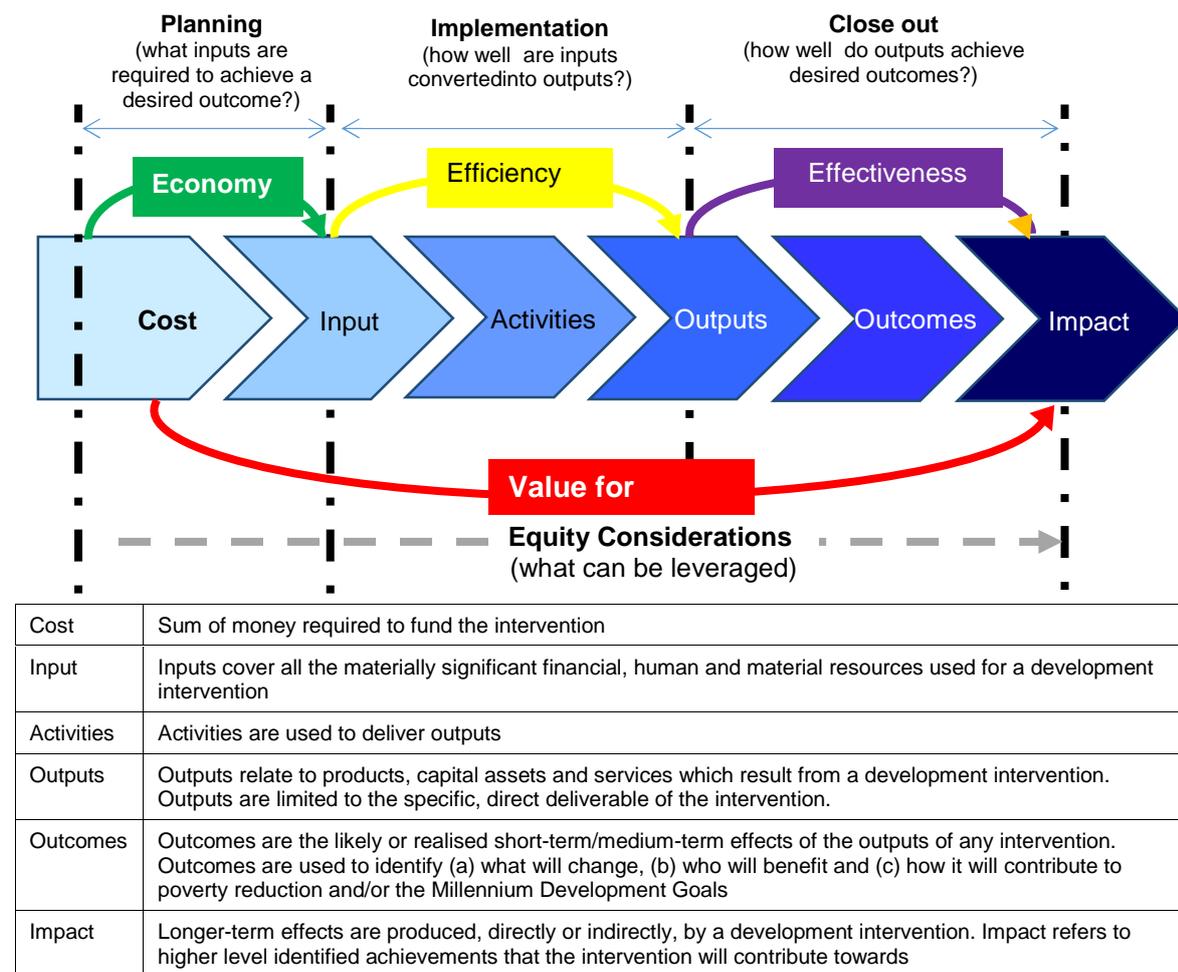


Figure 1: Concept of value for money (after Watermeyer, 2013)

The critical starting point in delivering value for money through projects is, in the first instance, to screen and align such projects with strategic objectives, priorities, budgets and plans, and thereafter, during the planning phase, to clearly define objectives and expected outcomes, as well as parameters such as the timelines, cost and levels of uncertainty. This frames the value-for-money proposition that needs to be implemented at the point in time that a decision is taken to proceed with a project, i.e. it establishes “economy” and identifies “equity”.

Implementation sits between “economy” and “effectiveness”. Projects need to be executed “efficiently” in order to minimise time delays, scope creep and unproductive costs, and to mitigate the effects of uncertainty on objectives so as to maintain the value-for-money proposition formulated at the outset of the project. During the close out of a project the projected outcomes need to be compared against the actual outcomes to confirm the “effectiveness” of the project. Value for money will occur when what is achieved equals or exceeds what was expected. Any deficit between what was planned and what was achieved puts value for money for a project at risk. An assumption can, however, be made that if the implementer exercises due care and reasonableness during implementation, value for money will be achieved as the difference lies not in the efficiency of implementation but in the inherent project risks materialising or shortcomings in framing the value for money proposition at the start of the project. It is a well-researched fact that risk is inherent in all projects and not all risks can be accurately forecasted or controlled during project planning and implementation.

A system that is better able to deliver value for money needs to differentiate between the different types of procurement which pose different challenges and require different skills sets. It also needs, where appropriate, to incorporate oversight functions to assess value for money. It also requires different regulatory instruments covering some or all the phases of the procurement.

This paper outlines the differences between two different types of procurement at each end of the spectrum, namely the procurement of general goods and services to support officials in the discharge of their duties and the procurement of infrastructure i.e. immovable assets that are acquired, constructed or result from construction operations or moveable assets which cannot function independently from purpose-built immovable assets. This is necessary to understand what can be regulated within a procurement system and the reasons for doing so.

This paper thereafter:

-) suggests an alternative means of regulating procurement through international standards, particularly where there is a need to take a broader view of what needs to be regulated; and
-) explores the opportunities and benefits of using international standards to regulate procurement in Africa in order to derive better value for money within the public sector.

2 Differences between types of public procurement systems

The public sector procurement system needs to deliver cost effective goods and services in support of a nation’s economic prosperity and welfare aspirations. Such goods and services may be:

-) consumed or required by officials to discharge their duties or to provide the necessary working environment within which they can perform their duties;
-) required to provide or maintain the necessary infrastructure for officials to do their work; or
-) required to create or maintain public economic infrastructure which provides improvements or efficiencies in services, production or export capabilities.

Goods which are consumed typically involve off-the-shelf products, readily available commodities. The services that officials require in support of their duties are commonly standard, well-defined scoped and specified which require little or no strategic inputs once a contract is put in place. The delivery and maintenance of infrastructure, on the other hand, requires that products be developed, altered or maintained on a site. This frequently necessitates the procurement and management of a network of suppliers and service providers in order to arrive at the required project outcomes.

Procurement outcomes in infrastructure projects are sensitive to the decisions made during the planning, design and execution of projects as well as during procurement processes. Procurement yields the necessary resources to delivery projects while delivery management provides the necessary oversight, direction and leadership needed to successfully achieve the outcome of the project.

The fundamental differentiator between the supply chain management system for general goods and services and that for infrastructure lies in the need to manage the delivery both at a contract and a project level. Figure 2 and Table 1 highlights the differences between the two systems.

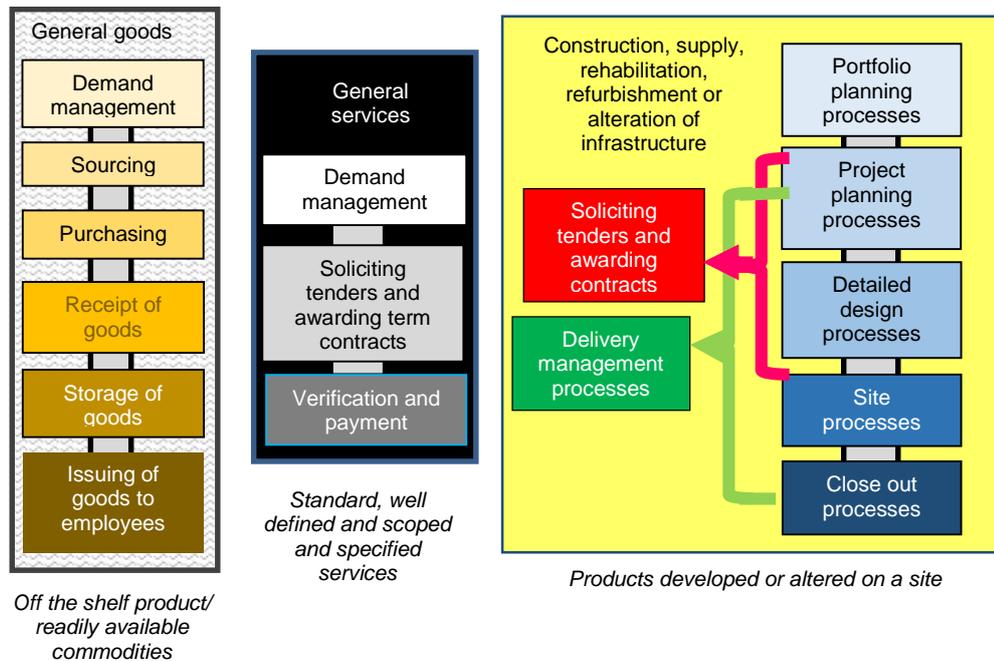


Figure 2: Different procurement types

The procurement of general goods and services is typically framed around the acquisition of goods and services where a need has been identified. It focuses on the development of specifications and the issuing of purchase orders, optimising resources within an activity to improve outcomes and the choice of goods and productivity of service for a particular transaction. The procurement of infrastructure, on the other hand, is framed around the process which creates, manages and fulfils contracts. It focuses on optimising resources across the entire supply chain from inception to completion to improve outcomes, integration of timing and outputs of the delivery team, management of risk throughout the whole supply chain and trade-offs between options to achieve project outcomes.

3 Procurement routes for infrastructure

Infrastructure procurement is the procurement of goods or services including any combination thereof associated with the acquisition, refurbishment, rehabilitation, alteration, maintenance, operation or disposal of infrastructure.

The role players in infrastructure projects are the client team, the delivery team and stakeholders, whose basic functions are as indicated in Figure 3. The public sector's role in infrastructure projects is to ensure that a solution to the business case for a project is achieved. This sector accordingly needs to plan, procure and manage delivery outcomes i.e. to function as the sponsor and implementer as indicated in Figure 3. These responsibilities cannot be assigned to the private sector. The public sector may, however, contract with the private sector in order to obtain support services to assist them to function as an implementer.

Table 1: The fundamental differences between the procurement of general goods and services and infrastructure

Characteristic /consideration	General goods and services	Infrastructure
Satisfying the business need	The business need is commonly achieved through the production of a specification, which then forms a requisition for the procurement of goods or services	The business need is frequently satisfied through multiple contracts which need to be procured and managed in such a way that the anticipated benefits are progressively realised
Demand management	The demand is usually determined and managed through inventory / bin levels or the frequency of the required service	Demand is determined and managed through: <ul style="list-style-type: none">) service life plans which are based on an assessment of current performance against desired levels of service or functionality, which reflect cost estimates of life cycle activities, and) infrastructure plans which provide a credible forecast of current demand and net demand for services or requirements for functionality over a period of time.
Risks	Risks are relatively low as they are typically linked to the ability of the supplier / contractor to timeously supply the required goods or to provide the required service to the standard demanded by the purchaser or employer within the tendered amount. The consequences of late delivery are usually low .	Risks are high due to uncertainties at the start of a contract which include economic circumstances, human behaviour, natural events, weather, inherent site conditions, political circumstances, community unrest, technology and technical issues, management activities and controls and individual activity. Risks can also manifest in commercial and legal relationships and weak clients as well as in the difference between estimated quantities at tender stage and final quantities at the completion of the works and the manner in which contractors are compensated for risk events for which they are not responsible for.
Interdependencies and interfaces between contracts	Interdependencies and interfaces between contracts are rare as the procurement commonly involves off the shelf products or readily available commodities or standard, well defined and scoped services	There are several interfaces and interdependencies between contracts as works (products) are developed or maintained on a site. A supply chain frequently needs to be contracted and mobilized to provide the necessary professional services, manufacture and / or supply materials, products, components and assemblies, provide the necessary equipment and labour to provide the works and to manage the implementation of the project.
Final contract price of contract	Final contract price typically equates to the quantum of goods or services which are consumed multiplied by the agreed rate	The final contract price in works contracts equates to the sum of the initial contract price for work which is known, the cost of changes in scope of contract (variations) to enhance quality performance or to address shortcomings which can impair performance, the amount of contract price adjustment for inflation provided for in the contract and the cost of risk events that materialise in the execution of a contract for which the contractor is not responsible.
Conditions of contract	Conditions of contract describe the rights and obligations of the parties and commonly lack agreed procedures for the administration or management of the contract. Frequently a contract or a service level agreement is negotiated after the evaluation of tenders, based on the tender submission.	Conditions of contract provide terms that collectively describe the rights and obligations of contracting parties and the agreed procedures for the administration of their contract. A standard form of contract or standard contract is used. Such contracts provide fixed terms and conditions which are not varied. This is necessary to allocate risks to the parties and to provide the methodology by which adjustment to both the prices and the time for completion can be made for changes in the scope of work and for risk events for which the contractor is not at risk. This enables tenderers to take into account the allocation of risks and how the contract will be administered in their tender submissions, enables tenders to be evaluated on a comparative basis, reduces risk pricing and compensates contractors for the occurrence of risk events for which they are not at risk without amending the contract.
Budget, contract price and purchase order value	Contract price is commonly adjusted to fit budget or the budget reduced to the contract amount when it is known. The purchase order amount typically equals the contract price which in turn equals the budget.	The budget needs to include contingences to fund changes in the scope of contract (variations) to enhance quality performance, or to address shortcomings which can impair performance, and risk events for which the contractor is not responsible. The purchase order amount may need to be adjusted to enable contingencies to be accessed. The budget, the amount due in terms of the contract and the purchase order amount are rarely the same.

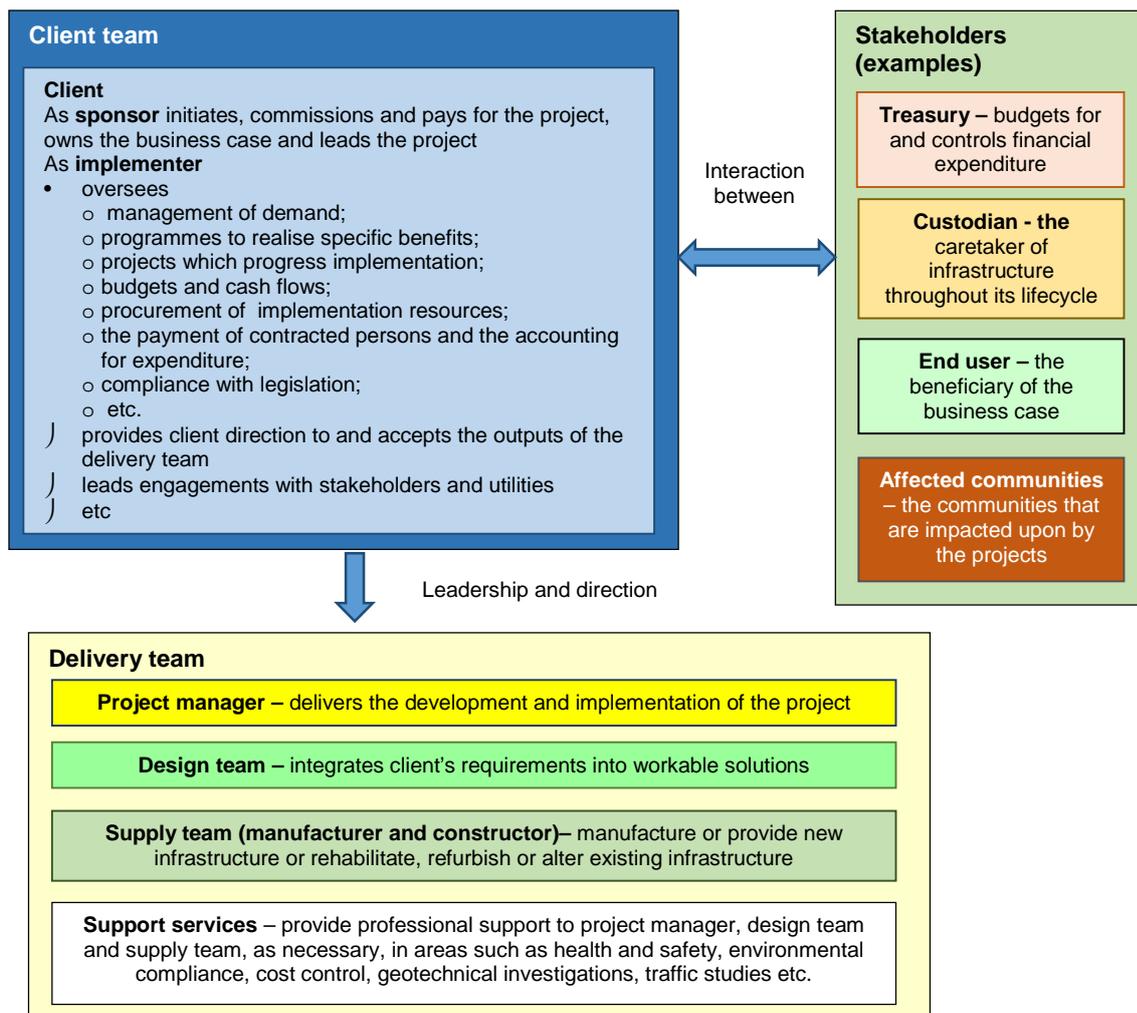


Figure 3: Fundamental roles and responsibilities in infrastructure projects

Typically, an individual employed by the implementer is named as a delivery manager for a single project, a cluster of projects or a programme of projects and is held accountable for the project outcomes. The primary role of such a person is to set the team up for successful delivery, remove obstacles or blockages to progress and direct the project in such a manner that the value that is anticipated at the end of the project is achieved.

The services of delivery team may be procured in whole or part. Any services which are not procured may be resourced with an implementer's own staff.

Figure 4 indicates the different routes for procuring infrastructure. Decisions surrounding funding, requirements for delivery management and co-ordination determine the procurement route that is followed.

4 Managing and controlling procurement processes and activities

A process can be considered to be an activity or set of activities using resources which are managed to enable the transformation of inputs into outputs. An organisation wishing to plan, design and execute infrastructure projects effectively needs to determine and manage numerous interrelated and interacting processes. Accordingly, the effective delivery of infrastructure necessitates that:

-) the processes be identified and appropriately defined;
-) procedures to ensure the effective planning, operation and control of such processes be documented;

-) responsibilities for activities be assigned;
-) procedures be implemented; and
-) oversight arrangements are put in place to assess value for money in project outcomes.

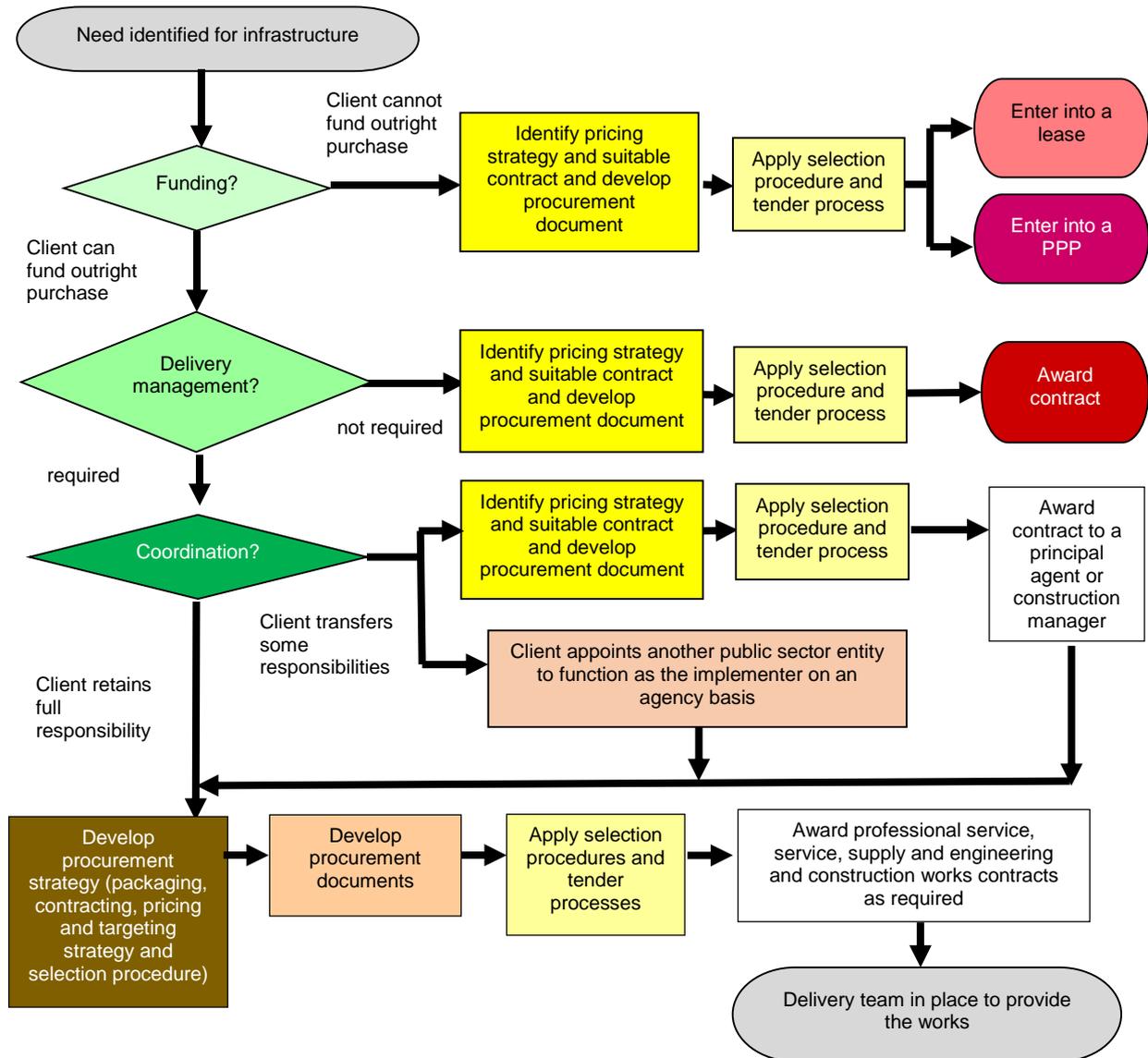


Figure 4: Routes for procuring infrastructure

The starting point is to determine and document the processes associated with the planning, designing and execution of infrastructure projects as well as their sequence and interaction. Thereafter, procedures associated with the performance of activities need to be documented and responsibilities assigned to persons with competence (ability to apply knowledge and skills to achieve intended results) to perform such activities. Controls also need to be put in place to ensure both the operation and control of these processes to ensure their effectiveness based on the conceptual thinking presented in Figure 5. Resources and information need to be made available to support the operation and monitoring of these processes. Finally records which provide evidence of conformity to requirements need to be identified, stored, protected and retained in a readily retrievable manner.

A control is a restraint or check point within a process where:

-) decisions are taken before authorising the proceeding with an activity within a process or commencing with the next process;
-) confirmation of conformity with requirements is required before completing a task or activity; or
-) information is provided which creates an opportunity for corrective action to be taken.

Controls provide a means for directing an organisation towards what is aimed or sought and confirming conformity with requirements. They provide an opportunity to take corrective action or to confirm compliance with documented requirements. A control which authorises the proceeding with an activity within a process or commencing with the next process is commonly referred to as a gate.

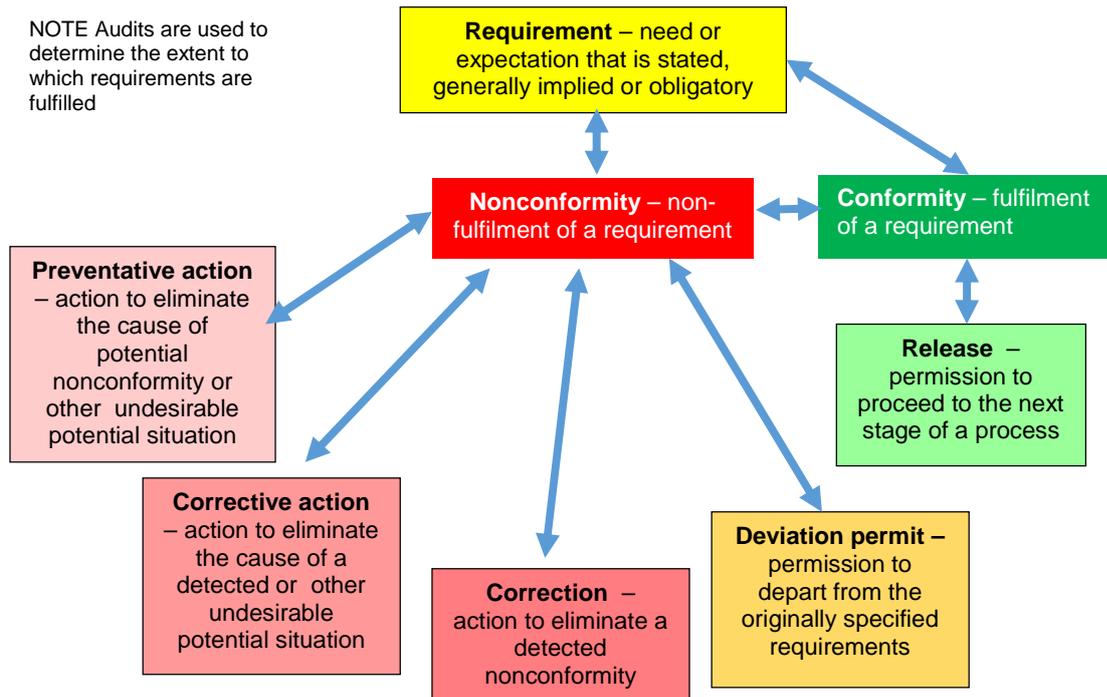


Figure 5: Concepts relating to conformity based on ISO 9000

The work flow associated with the procurement and delivery of infrastructure comprises a set of generic processes around which a control framework comprising a series of gates can be developed as indicated in Figure 6. The gates can be linked to documented deliverables (information) where decisions are required to progress to the next activity or process. These gates not only enable risks to be proactively managed, but also facilitate auditing.

5 Regulating infrastructure procurement and delivery management in South Africa

South Africa’s National Planning Commission’s (NPC) *National Development Plan 2030: Our future – make it work* identified a number of shortcomings in the current South African procurement system. The NPC found that the “*emphasis on compliance by box-ticking makes the system costly, burdensome, ineffective and prone to fraud*” and “*procurement systems tend to focus on procedural compliance rather than value for money, and place an excessive burden on weak support functions.*” The NPC accordingly proposed that the following five areas be focused on in designing a procurement system that is better able to deliver value for money, while minimising the scope for corruption (Watermeyer, *et al*, 2013):

-) differentiate between the different types of procurement which pose different challenges and require different skills sets;

-) adopt a strategic approach to procurement above the project level to balance competing objectives and priorities rather than viewing each project in isolation;
-) build relationships of trust and understanding with the private sector;
-) develop professional supply chain management capacity through training and accreditation; and
-) incorporate oversight functions to assess value for money.

The South African National Treasury issued during November 2015 a Standard for Infrastructure Procurement and Delivery Management (SIPDM) through the Public Finance Management Act of 1999 and the Municipal Finance Management Act of 2003 in line with the Commission's recommendations. This standard regulates the following:

- 1) the decision making process associated with procurement and delivery management (planning design and execution of projects) through control frameworks and policies associated with the assigning of responsibilities for approving or accepting deliverable associated with a gate (control point) or the authorising of a procurement process or procedure(see Figure 6);

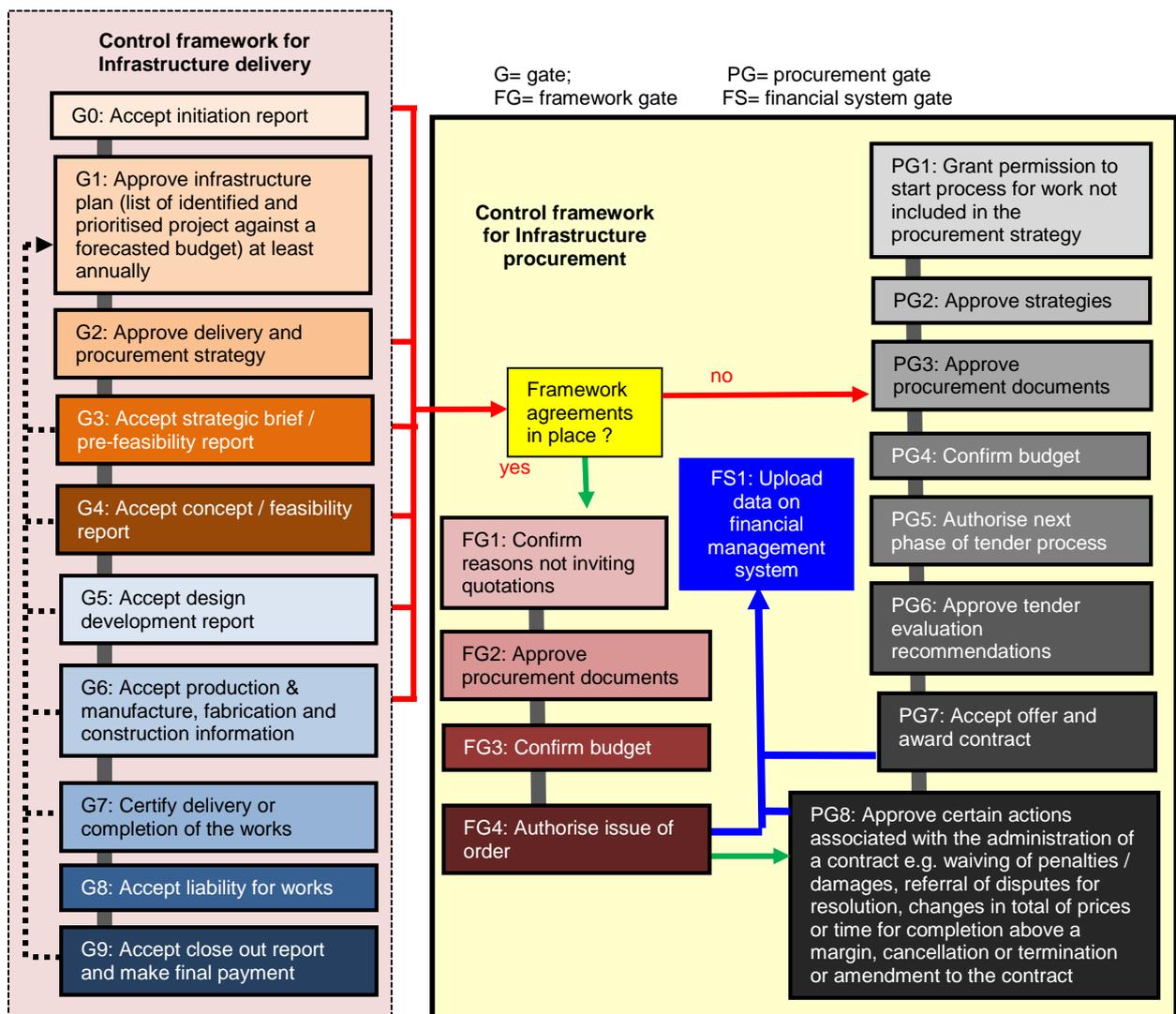


Figure 6: Control framework for infrastructure procurement and delivery management

- 2) aspects of delivery management as indicated in Table 2; and

- 3) procurement processes, methods and procedures and procurement documents, linked to parts 1 to 4 of SANS ISO 10845, *Construction procurement*, (the South African Bureau of Standards' adoption of the International Organisation for Standardisation's standard ISO 10845) and a limited range of domestic and international standard forms of contract including those published by the Federation of Consulting Engineers (FIDIC) and the Institution of Civil Engineers (NEC3).

Table 2: Aspects of delivery management which are regulated in the SIPDM

Aspect regulated	Instrument used to regulate delivery management
Decision to proceed with implementation	Conducting of independent gateway reviews on high value projects at the end of the planning stage to improve the quality of the information upon which a decision is taken to proceed with implementation.
Institutional arrangements	Putting in place a suitable organisational policy to implement the standard which assigns responsibilities for taking decisions at gates, establishes delegations to award contracts and orders and contains ethical standards for those involved in the procurement and delivery of infrastructure. Putting in place an agency agreement where an organ of state delivers infrastructure on behalf of another which includes a service level agreement and the allocation of responsibilities between the two organs of state.
Demand management	Developing service life plans and infrastructure plans to manage demand. Establishing control budgets at the end of the project planning stage and managing implementation against these budgets.
Acquisition management	Preparation of annual implementation plans for projects which require planning and design services prior to being implemented Preparation of procurement plans for contracts which do not require planning or design prior to being implemented
Contract management	Reporting on information obtained from administering a contract in accordance with the provisions of the contract
Logistics management	Putting in place suitable arrangements for the free issue of material and requirements for long lead items.
Disposal management	Establishing a disposal committees to decide on how best to demolish, dismantle or dispose of unwanted, redundant or surplus materials, plant and equipment.
Reporting of supply chain management information	Reporting to the relevant treasury on certain aspects of procurement
Regular assessment of the supply chain management performance	Preparation of and submission to the relevant treasury of an annual performance report which reports on a number of KPIs which seek to establish the efficacy of the infrastructure procurement and delivery management arrangements
Risk management and internal controls	Utilisation of gates to authorise activities or commencing with next process, confirm compliance with requirements and, if necessary, to take corrective action Maintaining of risk registers

6 Regulating processes, practices and procedures through standards

The prescribing of norms and standards or the referencing of standards in legislation provides another means for regulating procurement, irrespective of whether or not a narrow or expansive definition of procurement is embraced. In South African law for example, the Public Finance Management Act of 1999 (Act No 1 of 1999), which is one of the regulatory instruments for procurement, permits the National Treasury to issue norms and standards. The Standards Act of 2008 (Act No 8 of 2008) permits South African National Standards or any provision thereof to be incorporated into any law by referring to the title and the number or the title, the number and the year or edition number.

The International Organisation for Standardisation (ISO) is an independent, non-governmental international organization with a membership of 163 national standards bodies. ISO standards are developed through an open and transparent consensus process with input from experts and

stakeholder buy-in which ensures that a wide range of views are represented, including those relating to social and economic interests. Such standards are also periodically reviewed to ensure that they remain current and abreast of practice.

ISO has published an eight part family of construction procurement standards for a procurement system that is fair, equitable, transparent, competitive and cost-effective and which can be used to promote objectives additional to those associated with the immediate objective of the procurement itself. Part 1 establishes rules for the application of a wide range of selection methods and procedures. Part 2 establishes a format for the compilation of expressions of interest, tenders and contracts as well as the general principles for compiling such documents. Part 3 establishes standard conditions of tender while Part 4 establishes standard conditions for the calling for expressions of interest. Parts 5 to 8 establish KPIs to measure the outcomes of a contract in relation to the engagement of target groups, and to establish a target level or performance for a contractor to achieve or exceed in the performance of a contract. (Watermeyer, 2011).

ISO standards may be adopted by member countries as national standards with or without modification following the carrying out of a national public enquiry process (ISO/IEC. 2014). Parts of ISO 10845 have been adopted as national standards by the UK, Russia and Netherland while Albania, Bosnia and Herzegovina, Czech Republic, Kazakhstan, Mongolia, South Africa and Zimbabwe have adopted all eight parts.

Some countries such as Norway and New Zealand have published national conditions of contract (standard forms of contract) as national standards. In many other countries such documents are published by industry associations or learned societies. Such contracts mirror the culture of local practice and are drafted around significantly different objectives and principles, e.g. master-servant relationships or collaboration between two experts, risk sharing or risk transfer, independent or integrated design, etc. Nevertheless there are two international families of standards forms of contract that are used in Africa, namely FIDIC and the NEC3 contract published by the Federation of Consulting Engineers and the standard forms of contract cover a range of procurement types and contracting and pricing strategies that are drafted to cater for a wide spectrum of objectives and methods of managing risks (Watermeyer, 2012).

ISO has established a subcommittee for construction procurement. ISO TC59 / SC 18, which maintains the ISO 10845 standards and is currently working on broadening the coverage of international standards in this field.

7 Conclusions

Standards provide rules, guidelines or characteristics for activities or their results for common and repeated use, aimed at the achievement of the optimum degree of order. Procurement processes and forms of contract for all types of procurement as well as delivery management processes have been standardised and documented at either a national or international level. Standards can be readily referenced in legislation or regulation as well as to support public policy decisions or actions. Standardisation by its very nature removes uncertainties in processes, improves the predictability of procurement outcomes, improves efficiencies and reduces risk pricing.

There are currently standards available in Africa which cover all three phases of procurement. Countries can adapt or adopt these standards to regulate procurement broadly or narrowly. The advantages of making use of such standards to regulate procurement, include:

-) the development of regulations in support of legislation requires scarce skills and is a time consuming and resource intensive process whereas the referencing of standards significantly reduces the time and cost of producing regulatory instruments in support of legislation;
-) the adoption of standards as a regulatory instrument obviates the need to:
 - o develop standard operating procedures at an organisational level in order to implement legislation; and

- develop guidance material as guidance text is usually in the standard or associated reference documents.

) the adoption of standards enables:

- a legislated procurement system to be implemented in a systematic, uniform and auditable manner across all spheres of government and state owned enterprises;
- control frameworks which enable processes to be controlled and managed (quality management / auditable systems) to be put in place to improve procurement outcomes in the pursuit of realising value for money;
- a strategic approach to procurement to be taken above the project level as it enables all three phases of procurement to be regulated and integrated;
- those engaged in procurement activities to perform their duties, within the confines of their organization's procurement policy, in a uniform and generic manner;
- procurement documents to be readily compiled in a uniform and generic manner;
- curricula to be developed to capacitate those engaged in a range of procurement activities; and
- allows governments to readily develop an internal procurement-skills base, which is not lost when members of staff move between different departments or levels of government or organizations.

In summary, the use of standards for domestic procurement regulation offers many benefits and provides a solid platform to derive better value for money within the public sector.

References

Arrowsmith, S (Ed). 2010. Public Procurement Regulation: an Introduction.

<https://www.nottingham.ac.uk/pprg/documentsarchive/asialinkmaterials/publicprocurementregulationintroduction.pdf>

ISO/IEC. 2014. Using and referencing ISO and IEC standards to support public policy. International Organisation for Standardisation and international Electrotechnical Commission.

<http://www.iso.org/sites/policy/documents/Using%20and%20referencing%20ISO%20and%20IEC%20standards%20to%20support%20public%20policy%20-%20EN.pdf>

United Nations Commission on International Trade Law. (2014). UNCITRAL Model Law on Public Procurement. United Nations, New York.

Watermeyer, R.B. (2011). Standardising construction procurement systems. Report. The Structural Engineer, 89(20), October

Watermeyer, R.B. (2012) A framework for developing construction procurement strategy. Proceedings of the Institution of Civil Engineers, Management, Procurement and Law. Volume 165, Issue 4, pp. 223–237 (15)

Watermeyer, R. (2013). Value for Money in the Delivery of Public Infrastructure. West Africa Built Environment Research Conference, Accra, Ghana, August

Watermeyer, R, Wall, K and Pirie, G. (2013) The case for a separate supply chain for the delivery and maintenance of infrastructure. www.infrastructurene.ws/wp-content/uploads/2013/02/Technical-Paper-FULL.pdf