

Workshop on Designing Efficient Public Procurement Policies to Foster Technology Transfer and Development Capacity In Emerging Markets

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Linking developmental deliverables to public sector contracts

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Ron has been a director of Soderlund and Schutte since 1990. He has been at the forefront of many development initiatives in South Africa since the early 1990s, including procurement reform, the use of procurement as an instrument of policy, the changing of construction methods, technologies and practices to facilitate socio-economic development imperatives and the conceptualisation and implementation of a construction procurement system to reflect societal expectations. He has developed many South African National Standards and a series of international standards (ISO 10845) for construction procurement. In 2009 he was awarded a senior doctorate (Doctor of Engineering) from the University of the Witwatersrand for his published work on contributions to the delivery of infrastructure for the advancement of a changing South African society. In 2010, he was awarded the Institution of Civil Engineer's International Medal in recognition of his significant contribution for the last 20 years in the delivery of enabling engineering mechanisms for the UN Millennium Development Goals.

Abstract

Public procurement, because of its nature and size, can have a significant impact on a country's social and economic development agenda. It is also one of the few levers that government has at its disposal to encourage the private sector to embark upon a developmental agenda.

Developmental deliverables, depending upon the prevailing procurement regime, can be offset against the awarding of a contract, where typically such deliverables are delivered over a period considerably longer than the contract period. The alternative is to link developmental deliverables to the provision of goods and services in terms of the contract. This can be achieved in a fair, equitable, transparent, competitive and cost effective manner using most public sector procurement regimes.

This paper outlines a generic approach to the development of a procurement strategy for outsourced goods, services and works which focuses on the opportunities for the delivery of development deliverables through the performance of the contract. As such it examines the range of options for selecting packaging, contracting, pricing and targeting strategies and procurement procedures that have the potential to deliver development outcomes within a supply chain. It also examines the role which targeted procurement procedures, framework agreements, term contracts, partnering and target cost contracts can play in this regard.

Introduction

ISO 10845-1 defines procurement as *the process which creates, manages and fulfils contracts relating to the provision of goods, services and engineering and construction works or disposals or any combination thereof.*

Public procurement, because of its nature and size, can have a significant impact on social and economic development (Arrowsmith, 1995). A study undertaken for the European Community cites five principle domestic socio-economic or political functions which public sector procurement may be used to achieve, in addition to obtaining the required goods and services. These are(McCrudden, 1995):

- a) to stimulate economic activity;
- b) to protect national industry against foreign competition;
- c). to improve the competitiveness of certain industrial sectors;
- d). to remedy regional disparities;
- e) to achieve certain more directly social policy functions such as to foster the creation of jobs, to promote fair labour conditions, to promote the use of local labour, to prohibit discrimination against minority groups, to improve environmental quality, to encourage equality of opportunity between men and women, or to promote the increased utilization of the disabled in employment.

Governments in both developed and developing countries have responded to the use of procurement to attain policy objectives in a number of ways, ranging from making it mandatory for officials to use procurement to attain socio-economic objectives to ruling out its use for such purposes. Others allow officials discretion in the use of procurement for such purposes. Certain international trade agreements limit the use of procurement to promote policy objectives by placing prohibitions on discrimination and other restrictive trade measures and / or by rules on contract award procedures e.g. the European Union rules on procurement and the World Trade Organisation's Agreement on Government Procurement (GPA) (Arrowsmith *et al*, 2000).

Goods and services are typically procured from contractors beyond the borders of a country when they are not available within a country or when there are problems with the capacity, capability and competitiveness of the local supply bases (Department of Public Enterprises, 2007). Governments, in support of national development objectives, are invariably not supportive of being dependent on foreign contractors and would prefer that goods and services be produced by local contractors. The development of a competitive domestic market is a very attractive option as it lowers the costs of services, increases security of supply, provides employment to its citizens and provides a platform for local innovation..

Governments often look to offsets in public sector procurement to encourage local development by means of licensing of technology, investment requirements, counter-trade or similar requirements. Investment and counter trade deliverables are, however, typically delivered over a period considerably longer than the contract period and are most often unrelated to the contract. This not only distorts markets but also makes their measurement, evaluation and enforcement difficult.

The alternative is to link developmental deliverables relating to the leveraging of technology, skills transfer and increasing investment in the local industry, to the supply chain within a contract. This can be achieved in a fair, equitable, transparent, competitive and cost effective manner using most public sector procurement regimes. This approach, however, requires an understanding of procurement systems, strategies and methods for linking deliverables to contracts.

Goals for procurement systems

Procurement systems are developed around a set of objectives or goals. These goals may in turn be categorized as those relating to good governance (primary goals) and those relating to the use of

procurement to promote social, national agendas and sustainable development objectives (secondary or non-commercial objectives) (Watermeyer, 2004b).

Governments establish their procurement systems and policies either explicitly or implicitly around a set of goals. Such goals may be used as the point of departure for the development of regulations or form part of the legislation itself. For example, the goals associated with the first nation-wide non-binding regulation in China, the Interim Measures for the Administration of Government Procurement (1999), were to unify legislation and to forge an open, just and fair framework for procurement, while the Constitution of the Republic of South Africa (Act 108 of 1996) requires the government procurement system to be fair, equitable, transparent, competitive and cost effective (Watermeyer, 2004b).

Similarly, secondary objectives regulating procurement may be expressed in law or in policy. For example, the Constitution of the Republic of South Africa (Act 108 of 1996) establishes South Africa's preferential procurement policy and the Preferential Procurement Policy Framework Act (Act 5 of 2000) establishes the framework within which such a policy is to be implemented. In India, there are policies in place which permit "purchase preferences" (i.e. allowing public sector units who compete with the private sector to revise their prices downwards where their tenders are within 10 per cent of a large private sector unit) and reserve a large number of products for production by small scale firms and provide for price preference in favour of small-scale firms. In Malaysia, procurement policy supports the National Development Policy which seeks to improve the economic participation of the indigenous people (Bumiputera) and to make them equal partners of development in the country (Watermeyer, 2004b).

ISO 10845-1:2010 requires an organisation to *develop and document its procurement system*

- a) *in a manner which is fair, equitable, competitive and cost-effective and which may, subject to the policies of an employer and any prevailing legislation, include the promotion of other objectives, in accordance with the requirements of Table 1, and*
- b) *around a process which commences once the need for procurement is identified, ends when the transaction is completed and includes the attainment of procedural milestones which enable the system to be controlled and managed.*

Table 1: Basic procurement system requirements (ISO 10845-1:2010)

Attribute	Basic system requirement
Fair	The process of offer and acceptance is conducted impartially without bias and provides participating parties simultaneous and timely access to the same information. Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Equitable	The only grounds for not awarding a contract to a tenderer who complies with all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Transparent	The procurement process and criteria upon which decisions are to be made shall be publicized. Decisions (award and intermediate) are made publicly available together with reasons for those decisions. It is possible to verify that criteria were applied. The requirements of procurement documents are presented in a clear, unambiguous, comprehensive and understandable manner.
Competitive	The system provides for appropriate levels of competition to ensure cost-effective and best value outcomes.
Cost-effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and the least resources to effectively manage and control procurement processes.
Promotion of other objectives	The system may incorporate measures to promote objectives associated with a secondary procurement policy subject to qualified tenderers not being excluded and deliverables or evaluation criteria being measurable, quantifiable and monitored for compliance.

The promotion of secondary objectives is nevertheless required in terms of ISO 10845 to be fair, equitable, transparent, competitive and cost effective in a measureable, quantifiable and verifiable manner. As such, it cannot distort competition or lead to outcomes that are not cost effective as

deliverables are not guaranteed or are set at a level that most tenderers can readily attain in the performance of the contract.

Addressing secondary objectives in a procurement system

Secondary or non-commercial objectives can be categorized in terms of obligations placed on tenderers or successful contractors as tabulated in Table 2. The focus of each of the four categories of obligations described in Table 2 is different. The Type I and II categories (structure or internal workings of the contracting entity) typically focus on the structure and internal workings within the contractor's organisation immediately before the commencement of the contract and for the duration of the contract. The Type III category (outsourcing) on the other hand, focuses on undertakings that targeted enterprises or labour (or both) will be engaged in economic activities in the performance of the contract, while Type IV (nominated deliverables) uses procurement to leverage socio-economic benefits which are related or unrelated to the contract.

Table 2: Classification of secondary objectives in terms of obligations placed on contractors (after Watermeyer, 2004a)

Type		Obligation placed on tenderer or successful contractor
Number	Descriptor	
I	Structure of the contracting entity	Comply with nominated requirements to be eligible for the award of a contract or a score in the evaluation of tender offers
II	Internal workings of the contracting entity	Comply with nominated requirements to be eligible for the award of a contract or a score in the evaluation of tender offers; or undertake to implement certain work place actions during the performance of a particular contract
III	Outsourcing	Provide business or employment opportunities (or both) to target groups through activities directly related to a particular contract
IV	Nominated deliverables	Undertake to provide specific deliverables, which might be related or unrelated to a particular contract

Several models for public sector procurement interventions apart from offsets have evolved, based largely on country-specific procurement regimes and requirements. These can be broadly categorized as falling into one of five generic schemes indicated in Table 3, which, in turn, can be subdivided into one of ten implementation methods.

Concerns regarding the undermining of primary procurement (good governance) objectives are invariably expressed whenever procurement is used as an instrument of socio-economic policy. Typically the concerns raised revolve around the risk of the following occurring when implementing a preferential procurement policy (Watermeyer, 2004a):

- a) loss of economy and inefficiency in procurement;
- b) the exclusion of certain eligible tenderers from competing for contracts;
- c) the reduction in competition;
- d) unfair and inequitable treatment of contractors;
- e) lack of integrity or fairness;
- f) lack of transparency in procurement procedures; and
- g) failure to achieve secondary procurement objectives through the procurement itself.

It should be noted that these risks relate to the compromising of a procurement system's good governance objectives.

Type IV (nominated deliverables) secondary objects that are unrelated to a particular contract (offsets) are extremely difficult to implement in a manner which does not violate most of the

abovementioned concerns, particularly if obligations extend beyond the procurement contract period. Accordingly, these secondary objectives are considered from the outset to compromise primary procurement objectives.

Watermeyer (2004a) performed a risk assessment based on AS/NZS 4360:1999 (Risk Management) on the implementation of a preferential procurement policy which has objectives that can be realised by creating a demand for services and supplies from, or to secure the participation of, targeted enterprises and targeted labour (Types I and III secondary objectives), using eight of the methods listed in Table 3. His analysis indicated that the methods which relate to award criteria at the short listing (method 5) and tender evaluation stage (method 6), which although not guaranteeing that socio-economic objectives will be met, are the methods that are most likely not to compromise requirements for a system which has fair, equitable, transparent, competitive and cost effective good governance goals, if appropriately managed. The analysis furthermore indicated that method 3 (contractual conditions), method 8 (product / description specification), and method 9 (design of procurement to benefit particular contractors) have the potential under certain circumstances to satisfy primary objectives (e.g. where the requirements can be met by most potential tenderers in the performance of the contract), while method 1 (set asides), method 2 (qualification criteria), and method 4 (offering back) are most likely to compromise such objectives. (His analysis omitted financial incentives, which result in the same conclusions as methods 5 and 6.)

Table 3: Methods used to implement policies relating to secondary objective (After Watermeyer, 2004a)

Scheme Type	Methods		Actions associated with the method
Reservation	1	Set asides	Allow only enterprises that have prescribed characteristics to compete for the contracts or portions thereof, which have been reserved for their exclusive execution.
	2	Qualification criteria	Exclude firms that cannot comply with a specified requirement, or standard relating to the policy objectives from participation in contracts other than those provided for in the law.
	3	Contractual conditions	Make policy objectives a contractual condition, e.g. a fixed percentage of the work shall be subcontracted out to enterprises that have prescribed characteristics, or a joint venture shall be entered into.
	4	Offering back	Offer tenderers that satisfy criteria relating to policy objectives an opportunity to undertake the whole or part of the contract if that tenderer is prepared to match the price and quality of the best tender received.
Award criteria	5	Weighting of objectives at the shortlisting stage	Limit the number of tenderers who are invited to tender on the basis of qualifications and give a weighting to policy objectives along with the usual commercial criteria at the shortlisting stage.
	6	Award criteria (tender evaluation criteria)	Give a weighting to policy objectives along with the usual commercial criteria, such as price and quality, at the award stage.
Incentives	7	Incentive payments	Incentive payments are made to contractors should they achieve a specified target (key performance indicator) in the performance of a contract.
Indirect	8	Product/service specifications	State requirements in product or service specifications, e.g. by specifying labour-based construction methods.
	9	Design of specifications, contract conditions and procurement processes to benefit particular contractors	Design specifications or set contract terms (or both) to facilitate participation by targeted groups of suppliers.
Supply side	10	General assistance	Provide support for targeted groups to compete for business, without giving these parties any favourable treatment in the actual procurement.

Developing a procurement strategy

Introduction

Strategy in the delivery and maintenance of infrastructure may be considered as the skilful planning and managing of the various processes associated therewith. It involves a carefully devised plan of action which needs to be implemented. It is all about taking appropriate decisions in relation to available options and prevailing circumstances in order to achieve optimal outcomes.

Procurement strategy is the selected packaging, contracting, pricing and targeting strategy and procurement procedure for a particular procurement (ISO 10845-1, 2010). Procurement strategy in the context of the leveraging of technology, skills transfer and increasing investment in the local industry within the supply chain needs to take place at a portfolio level i.e. where projects and programmes, which are not necessarily interdependent or directly related are grouped together to facilitate effective management of that work to meet an organisation’s strategic business objectives (see Figure 1).

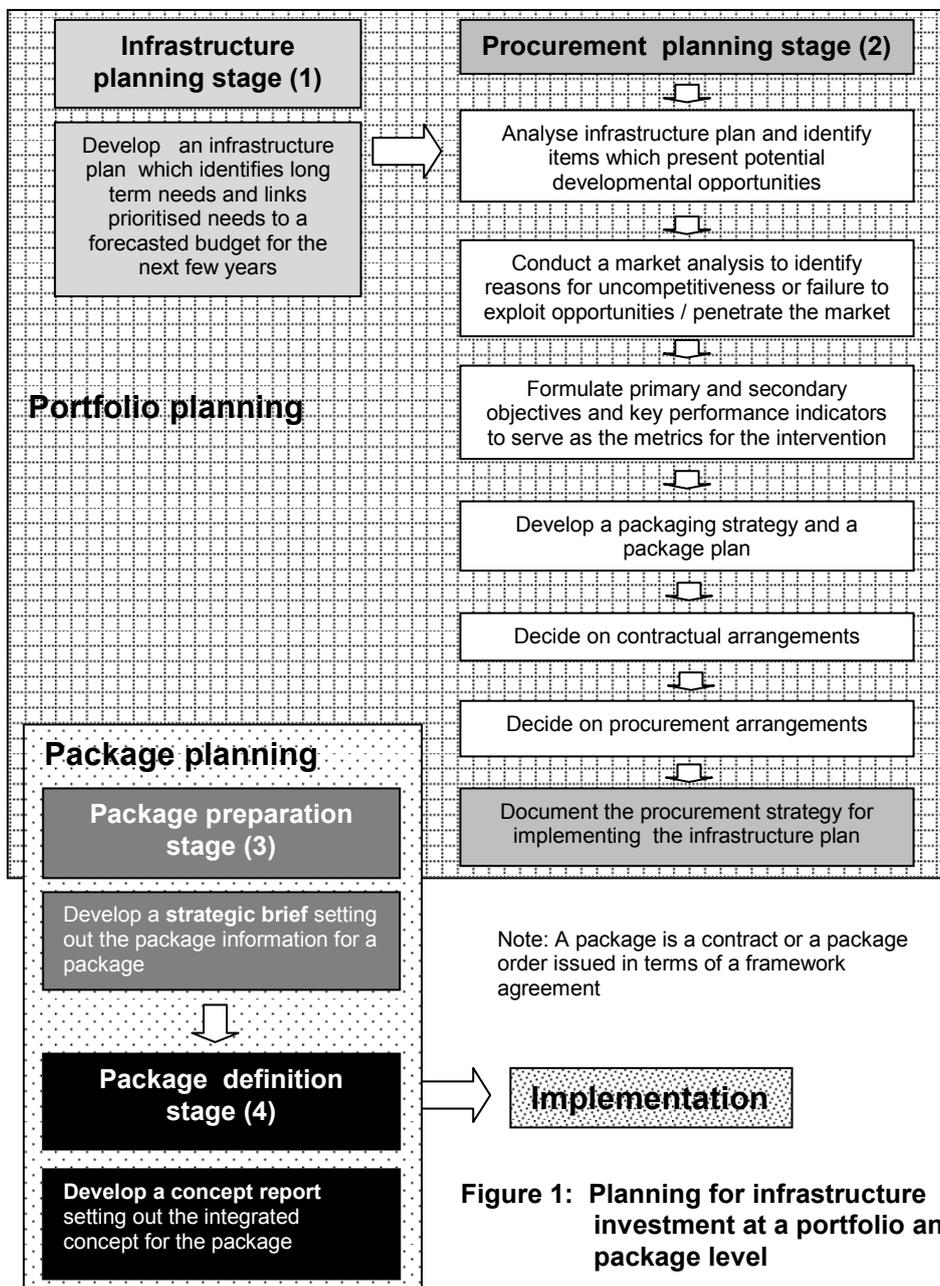


Figure 1: Planning for infrastructure investment at a portfolio and package level

Develop an infrastructure plan

Procurement strategy at a portfolio level can only be undertaken after an infrastructure plan which identifies long term needs and links prioritised needs to a forecasted budget for the next few years has been developed. Such a plan needs to provide a projected list of work items described by category, location, type and function. The work items also need to indicate the nature of the work i.e. design, construction, installation, refurbishment, supply, rehabilitation and maintenance or any combination thereof.

Identify developmental opportunities

The work items in such a plan needs to be analysed and further categorised for development purposes in terms of the following (Department of Public Enterprises, 2007):

- a) items for which there is repetitive spend over time as sustained demand is a prerequisite for the development of local supplier capacity;
- b) high spend items, as this will result in the greatest impact on economic growth;
- c) items which are currently being imported;
- d) items for which an increase in expenditure is envisaged;
- e) items for which there is a lack of competitiveness in the existing supply base; or
- f) items for which there is potential for exports.

The analysis should also consider items that are upstream in the supply chain i.e. items that are manufactured.

Perform a market analysis

The market analysis, which should cover the entire supply chain of all items in the development categories of expenditure contained in the infrastructure plan, needs to identify the causes of uncompetitiveness, insecurity of supply, or the failure of investors to exploit opportunities for expanding local supply. It also needs to identify the local and imported components and more importantly, the imported items for which there appears to be comparative advantages for local supply and areas in which there is a lack of competitiveness in the local supply base or in which there is a need to increase the security of supply. The characteristics, strengths and weaknesses of the supply networks in these areas should be analysed, including assessing local prices versus global prices, the cost structure and cost drivers of local suppliers versus global suppliers, the determinants of competitive advantage, and the technology transfer, skills development and investment which would be required for local production (Department of Public Enterprises, 2007).

Research will then need to be carried out to determine the viability of developing the local industry to meet the demand and the potential for export markets. Issues such as the stability of the local and export demand, the competitiveness of local supply versus global supply, and what demand and supply side interventions need to be considered. The likely impacts also need to be assessed.

Interventions can include increasing the number of suppliers in the market to improve competitiveness or requiring international contractors to form joint ventures with local partners, develop the local industry, invest in local industry, provide technology transfer and skills development. They can also include changes in designs, standardisation to achieve economies of scale in manufacture, providing the market with information relating to long term demand, the packaging of contracts, and working closely with industry associations.

Formulate procurement objectives and key performance indicators

Primary and secondary procurement objectives are associated with any procurement. Primary procurement objectives typically include:

- a) tangible objectives including budget, schedule, quality and performance characteristics required from the completed works and rate of delivery;
- b) environmental objectives;
- c) health and safety objectives; and
- d) intangible objectives including those relating to buildability, relationships (e.g. long term relationship to be developed over repeat projects, early contractor involvement, integration of design and construction, etc.), client involvement in the project, end user satisfaction and maintenance and operational responsibilities.

Secondary procurement policy promotes objectives additional to those associated with the immediate objective of the procurement itself (ISO 10845-1). These should focus on objectives relating to local economic development i.e. the provision of work or business opportunities to local suppliers, contractors and service providers and the development of the local industry to meet the demand. Issues surrounding competing or conflicting primary and secondary objectives will need to be identified and thereafter accepted or resolved.

A key performance indicator (KPI) is a measure of performance which is commonly used to help an organisation define and evaluate how successful it is or to measure progress towards a goal or strategic objective. KPIs should as far as possible be quantitative indicators that can be readily assessed during the performance of the contract.

KPIs relating to the engagement of enterprises, joint venture partners, local resources and local labour in contracts are needed to set targets in contracts or to measure procurement outcomes. Contract participation goals can be used to measure the participation of targeted enterprises or targeted labour, i.e. the flow of money from the contract to the target group. Procedures as to how such goals can be quantified and verified in the performance of the contract should be included in the contract (Watermeyer, 2000). This can be done in specifications or other contract information which applies to the contract, as illustrated in Figure 2.

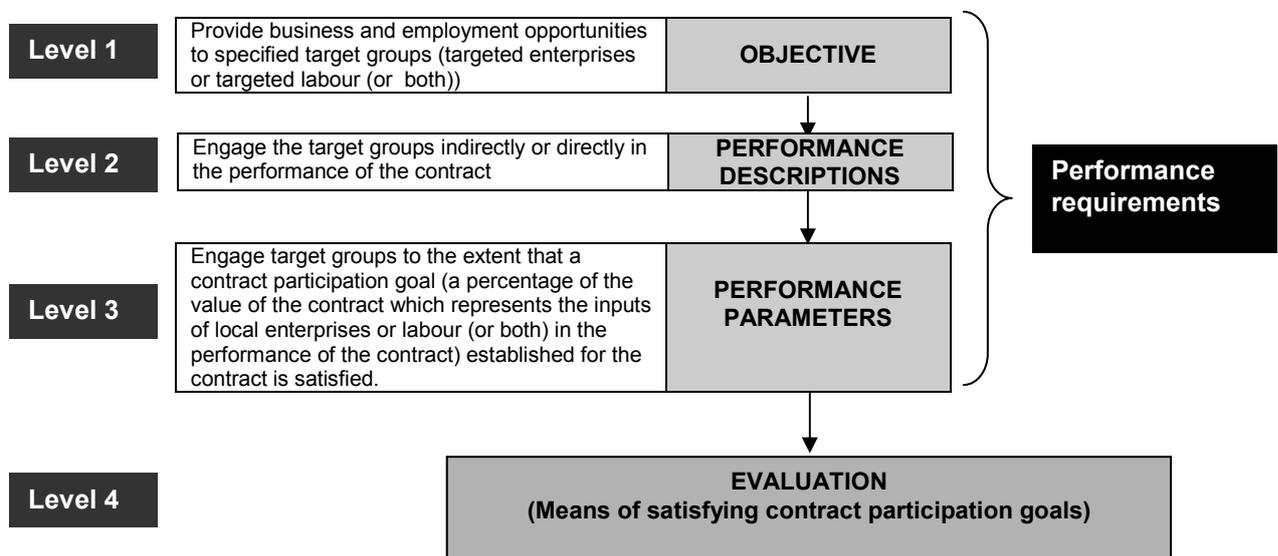


Figure 2: Structure of a four level performance-based resource specification (Watermeyer, 2004b and ISO/DIS 10845-5).

The objective (level 1), the performance description (level 2) and the performance parameters (level 3) as set out in Figure 2 can be viewed as a key performance indicator. The contract participation goal enables targets to be set and evaluation (level 4) establishes the measurement arrangements. A contract participation goal may be used to measure the outcomes of a contract in relation to the

engagement of the target groups or to establish a target level of performance for the contractor to achieve or exceed in the performance of a contract (see ISO/DIS 10845-5). Quantitative KPIs relating to investments, skills transfer and other contributors to secondary objectives also need to be formulated.

Alternatively, a balanced score card approach can be adopted in terms of which a wide range of KPI's are defined in absolute terms or are qualitatively or quantitatively measured in terms of an indicator. Such indicators need to be objective, verifiable and reproducible, and wherever possible, linked to predetermined benchmarks, reference levels or scales of value which are within levels acceptable to the client. A weighting, which reflects importance, is then assigned to each KPI and the total score measures the performance achieved. This approach enables an overall KPI to be developed.

Develop a packaging strategy and package plan

A packaging strategy is the organisation of work items into contracts or package orders issued in terms of a framework agreement. (ISO 10845-1:2010 defines a framework agreement as *an agreement between an employer and one or more contractors, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged.*) Work items in the infrastructure plan need to be grouped together or divided into packages for delivery under a single contract or a package order issued in terms of a framework agreement.

Framework contracts are well suited to situations in which long term relationships are entered into. They also offer flexibility in attaining secondary procurement objectives as requirements can be adjusted from one package order to another, thus allowing new key performance indicators to be introduced or improved upon over time.

The work items in the infrastructure plan which need to be procured over the next few years need to be grouped or divided into packages by balancing factors such as:

- a) requirements for independent project / programme of projects;
- b) use of framework / non-framework agreements;
- c) the geographical spread of project / the technical mix of the work;
- d) the desire to avoid any awkward technical, contractual or logistical interfaces between contracts;
- e) requirements for management / programme;
- f) economy of scale from grouping of projects in geographical areas / elimination of duplication of effort;
- g) marketability i.e. attractiveness of the packages to the market; and
- h) secondary procurement objectives fit.

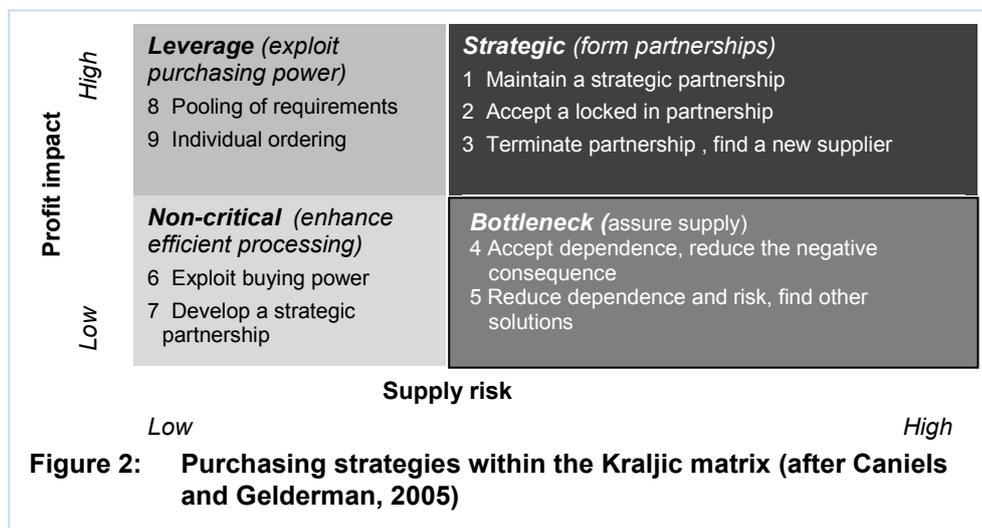
A package plan can then be prepared which identifies each package and the timing for the procurement of such packages.

Decide on contracting arrangements

The success or otherwise of development programmes of this nature are dependent upon the decisions that are made when formulating the contractual arrangements. A critical issue to consider is *what culture should be fostered in the contractual relationships?* Alternatively *what strategy should be adopted?*

Lichtig (2006) has made the observation that design has become increasingly fragmented over the last 100 years and each specialised participant now tends to work in an isolated silo, with no real integration of participant's collective wisdom. Lichtig's proposition is that project success requires that this fragmentation be addressed directly in order to provide higher value and less waste. His research into successful projects has shown that there are several critical keys to success, namely, a knowledgeable, trustworthy, and decisive facility owner / developer, a team with relevant experience and chemistry assembled as early as possible but certainly before 25% of the project design is complete, and a contract that encourages and rewards organisations for behaving as a team.

Kraljic's purchasing portfolio approach has inspired many researchers to develop purchasing portfolio models following the publication of his matrix in 1983 for single products or product groups (Kraljic, 1983). According to Kraljic, a supply strategy is driven by two factors – profit impact and supply risk. Kraljic proposed a 4 stage approach for developing supply strategies. Firstly a company classifies all its purchased products in terms of profit impact and supply risk. Subsequently, it weighs the bargaining power of its suppliers against its own powers, Then it positions those products that were identified as strategic in a portfolio matrix. Finally it develops purchasing strategies and action plans for these strategic products, depending on its own strength and the strength of the supply market (see Figure 2, Caniels and Gelderman, 2005).



Cox *et al* (2006) argue that buyers and suppliers must select from a range of sourcing options and implement them. They suggest that three elements must be in place, namely the specification of the sourcing approaches, an understanding of the power and leverage environments within which relationships must be managed and an understanding of the relationship management styles that can be used to manage particular sourcing approaches effectively. They argue that all these elements need to be brought together in order to align a particular sourcing approach with a specific power leverage circumstance using the appropriate relationship management style.

The sourcing options links together the level of involvement that buyers and suppliers can have with one another (reactive and arm's length or proactive and collaborative - see Figure 3), as well as the nature and degree of the buyer's involvement in developing supplier and supplier's own competencies (at the first tier or throughout the supply chain(s) as a whole - see Figure 4). Supplier development and supply chain management sourcing approaches are only really effective in situations of buyer dominance and independence (see Figure 5). Buyers will, however, have to normally adopt reactive sourcing approaches where this is not the case because they will be unable to provide the necessary incentives to induce suppliers to invest in the dedicated investments and relationship specific adaptations to make a proactive approach possible. Cox *et al* (2006), suggest that successful performance outcomes for buyers and sellers require an alignment between goals and aspirations to make the relationship successful for both parties.

Relative share of value appropriation	Inequality	Adversarial arm's length relationship	Adversarial collaborative relationship
	Equality	Non-adversarial arm's length relationship	Non-adversarial collaborative relationship
		Arm's length	Collaborative

Way of working

Figure 3: Relationship analysis (after Cox et al, 2006)

Focus on buyer relationship with the supplier	Proactive	Supplier development Buyer offers a long term relationship for a commitment by the supplier to provide greater transparency over its input costs, margins and production techniques in order to create innovation	Supply chain management Buyer undertakes proactive supplier development not only at the first tier but also at all stages in the supply chain from first tier to raw supply material
	Reactive	Supplier selection Buyer selects from available suppliers based on perceived best trade offs (No incentive structure to warrant relationship investments)	Supply chain sourcing Buyer adopts same approach as supplier selection at not just the first tier but as many tiers as possible
		First tier	Supply chain

Level of work scope with supplier and supply chain

Figure 4: Sourcing options (after Cox et al, 2006)

Attributes of supplier relative to buyer	High	Buyer dominance Few buyers and many suppliers Buyer's account is attractive to supplier Supplier's offerings is a standardised commodity	Interdependence Few buyers and suppliers Buyer's account is attractive to supplier Supplier's offerings are relatively unique
	Low	Independence Many buyers and suppliers Supplier has little dependence on buyer for revenue and has many alternatives Supplier's offerings is a standardised commodity	Supplier dominance Many buyers and few suppliers Supplier has no dependence on buyer for revenue and has many alternatives Supplier's offerings are relatively unique
		Low	High

Attributes of supplier power relative to buyer

Figure 5: Power leverage analysis (after Cox et al, 2006)

The Institution of Civil Engineers (2010) has indicated that a cultural change along the lines of that outlined in Table 4 is required to improve and optimise the delivery of infrastructure. They also make the observation that the choice of the contracting system can facilitate or frustrate performance.

The choice of the contracting system for a development programme can facilitate or frustrate performance in terms of the required project outcomes. Ideally, the selected form of contract should

enable equitable long term collaborative relationships, be sufficiently flexible to enable risks to be effectively managed, reward performance and focus the parties on attaining the project outcomes throughout the supply chain. The system should also cover the full range of contract types, namely supply, services and works and provide back-to-back subcontracts.

Table 4: The culture shift that is necessary to improve and optimise the delivery of infrastructure (after Institution of Civil Engineers, 2010)

From	To
Master-servant relationship of adversity	Collaboration between two experts
Fragmentation of design and construction	Integration of design and construction
Allowing risks to take their course or extreme and inappropriate risk avoidance or risk transfer	Active, collaborative risk management and mitigation
Meetings focused on the past - what has been done, who is responsible, claims. etc	Meetings focused on "How can we finish project within time and available budget?"
Develop project in response to a stakeholder wish list	Deliver the optimal project within the available budget
"Pay as you go" delivery culture	Discipline of continuous budget control
Constructability and cost model determined by design team and cost consultant only	Constructability and cost model developed with contractor's insights
Short-term "hit-and-run" relationships focused on one-sided gain	Long-term relationships focused on maximising efficiency and shared value
Procurement strategy focused on selection of form of contract	Selected packaging, contracting, pricing and targeting strategy and procurement procedure aligned with project objectives
Project management focused on contract administration	Decisions converge on the achievement of the client's objectives
Training is in classrooms unconnected with work experience	Capability building is integrated within infrastructure delivery
Lowest initial cost	Best value over life cycle

The NEC3 family of contracts published by the Institution of Civil Engineer, is a set of standard forms of contracts which not only define the legal relationship between the parties to a contract but also facilitate the implementation of sound project management principles and practices. These contracts, which are suitable for use across the full spectrum of works, services and supply contracts ranging from major framework contracts or major projects to minor works contracts or the purchasing of readily available goods, are designed to encourage collaboration and teamwork in contributing to and delivering best value outcomes. They are sufficiently flexible to be used across the entire supply chain in the delivery and maintenance of infrastructure.

The NEC3 Engineering and Construction Contract, NEC3 Engineering and Construction Subcontract, the NEC3 Term Service Contract and the NEC3 Professional Service Contract all have a target contract option. (ISO 6707-2:1993 defines a target cost contract as *a cost reimbursement contract in which a preliminary target cost is estimated and on completion of the work the difference between the target cost and the actual cost is apportioned between the client and the contractor on an agreed basis.*) This contracting arrangement not only enables framework contracts to be entered into but also enables the client to know where the money is being spent, rewards strong contractor performance, shares financial risk between the client and the contractor and promotes collaboration or a culture whereby both parties have a direct interest in decisions that are made regarding the cost and timing of the contract.

These NEC3 contracts as well as the NEC3 Supply Contract have standard options for partnering (option X12) which requires each partner to work with the other partners to achieve the client's objectives and links financial incentives to achieving or exceeding the target stated for a KPI. This option enables a project team to manage their performance with respect to KPIs and to introduce new KPIs as the need arises. As an alternative, each of these contracts has an option (option X20) which allows for incentive payments to be made if a target for a KPI is achieved or exceeded. The NEC3 family of contracts is accordingly well placed to support the required culture change and broader project objectives required to support development projects.

Decide on procurement arrangements

Decisions need to be made regarding procurement methodologies. This necessitates that decisions be made regarding:

- how quality is to be achieved (see ISO 10845-1, 2010) e.g. through specifications, tender evaluation criteria, prequalification, undertakings during the tender process, etc.;
- the selection of a tender evaluation method and a procurement procedure (see Figure 5); and
- targeted procurement strategies to promote secondary objectives.

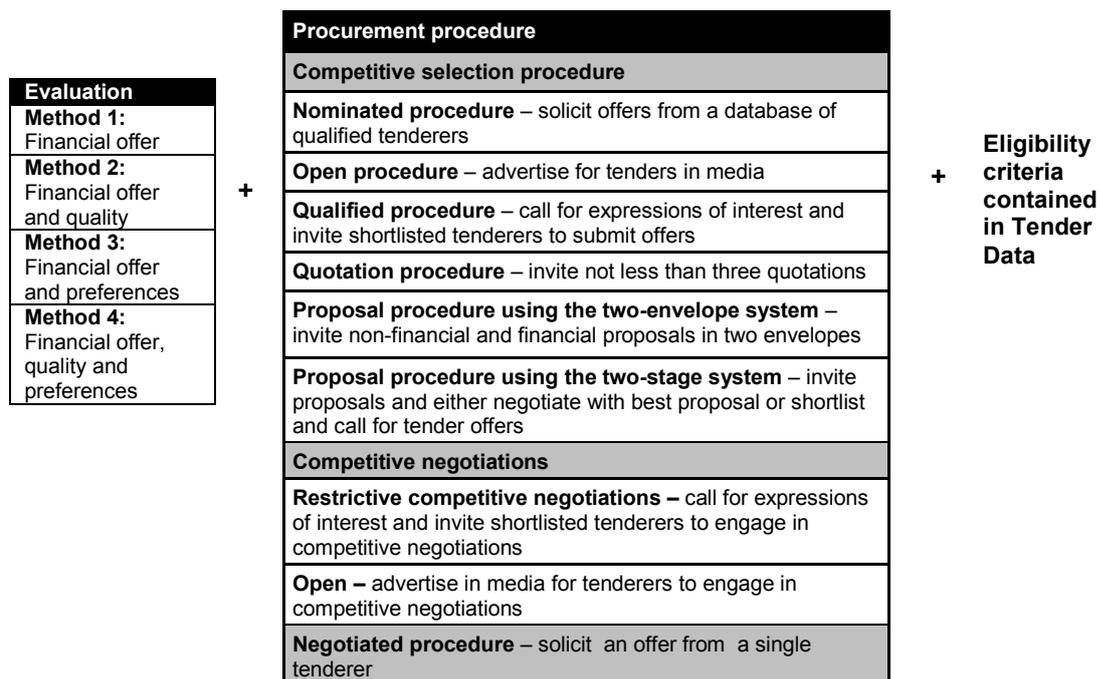


Figure 5: Options for generic methods contained in ISO 10845-1 (2010)

There are a number of techniques and mechanisms associated with targeted procurement procedures (Watermeyer, 2000 and 2004 and ISO 10845-1, 2010), all of which are designed to promote or attain the participation of targeted enterprises and targeted labour in contracts. These procedures relate to the:

- Measurement and quantification of the participation of targeted groups through monetary transactions with such groups.
- Definition and identification of targeted groups in a contractually enforceable manner.
- Unbundling of contracts either directly so that targeted enterprises can perform the contracts as main contractors or indirectly through resource specifications which require main contractors to engage target groups as subcontractors, service providers or suppliers within the supply chain or as joint venture partners.
- Granting of evaluation points in the evaluation of expressions of interest or tenders (preferences) should respondents or tenderers satisfy specific criteria or undertake to achieve certain goals or key performance indicators in the performance of the contract.

- e) Provision of financial incentives for the attainment of key performance indicators in the performance of the contract.
- f) Creation of contractual obligations to engage target groups in the performance of the contract, e.g. subcontract a percentage of the work to or contract goods or services from targeted enterprises, enter into joint venture with targeted enterprises, subcontract specific portions of a contract to targeted enterprises in terms of a specified procedure or perform the works in a manner such that targeted labour is employed.
- g) Evaluation of procurement outcomes i.e. the monitoring of the attainment of socio-economic deliverables at a contract level.

Conclusions

Public procurement, because of its nature and size, can have a significant impact on a country's social and economic development agenda. Developmental deliverables can be linked to the provision of goods and services in terms of the contract. This can be achieved in a fair, equitable, transparent, competitive and cost effective manner using most public sector procurement regimes. This, however, requires a thorough understanding of the options that are available and the development of appropriate procurement strategies at a portfolio level to exploit the development opportunities that can be linked to procurement. Targeted procurement procedures, framework agreements, term contracts, partnering and target cost contracts have a role to play in this regard.

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