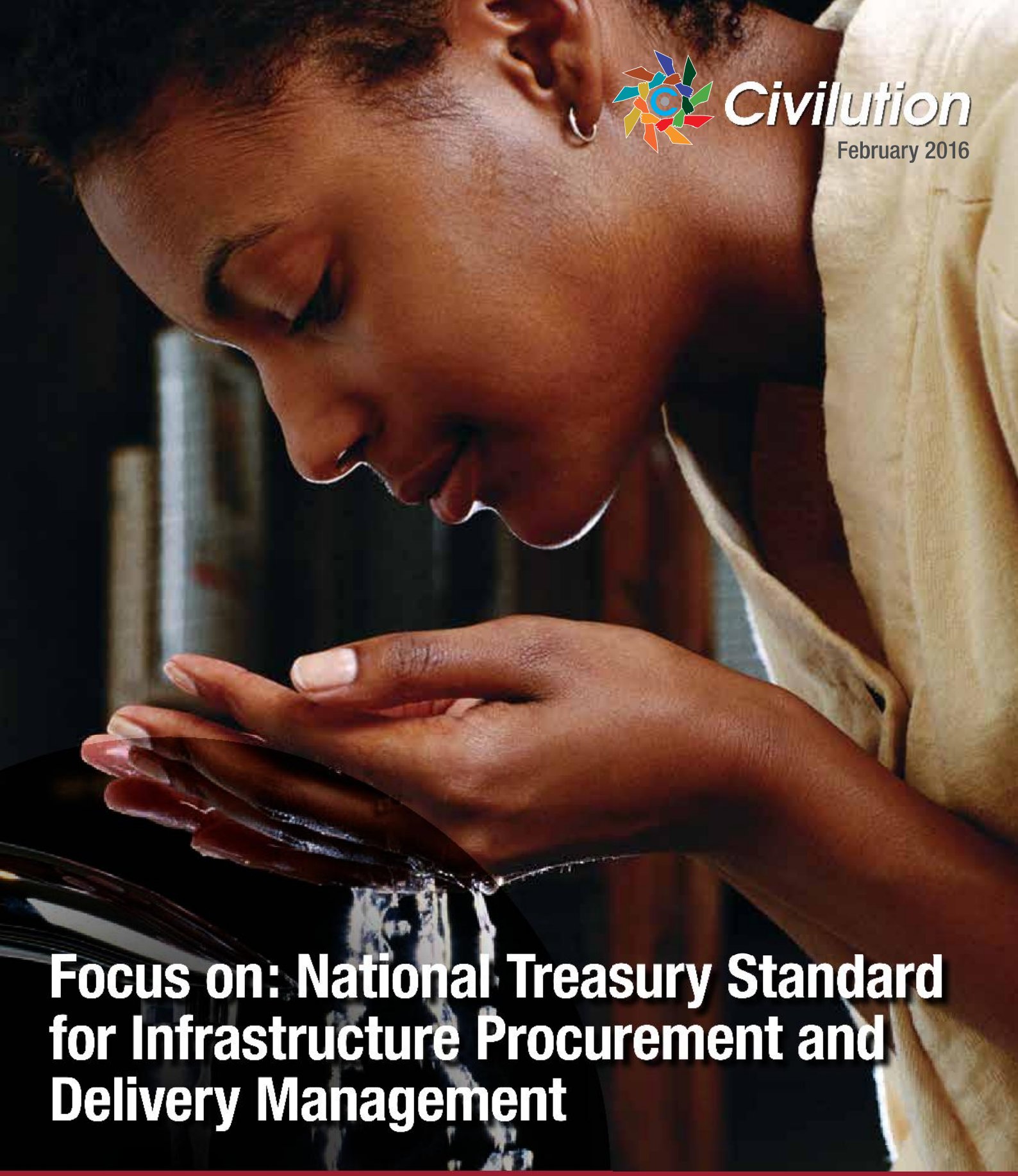

Civilution

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Focus on: National Treasury Standard for Infrastructure Procurement and Delivery Management

national treasury

Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

Infrastructure contracts and contract management

The *Standard for Infrastructure Procurement and Delivery Management* (SIPDM) establishes requirements for infrastructure contracts and contract management. Organs of state are required to select and use a contract selected from a prescribed list of standard forms of contract. Those responsible for the management or administration of the contract on behalf of an organ of state need to act as stated in the contract that is entered into. They also need to be professionally registered with an appropriate built environment council where such contracts involve the provision of new infrastructure or the rehabilitation, refurbishment or alteration of existing infrastructure.

Infrastructure procurement involves the development or maintenance of a product on a site. A central issue that needs to be dealt with in infrastructure projects is the financial liability related to uncertainty of future events, who takes the risk for the difference between the actual prices paid in terms of the contract and those estimated at the time of tender, and how changes to the information are used to produce the works assessed and paid for. Standard forms of contract have been developed by industry to enable risks to be allocated between the parties to a contract. Those responsible for administering a contract on a client's behalf need to do so in accordance with the provisions of these standard forms of contract. The provisions in the SIPDM for infrastructure contracts and contract management need to be understood in this context.

INTRODUCTION

A contract in law is an agreement entered into voluntarily, usually by two parties, each of whom intends to create one or more legal obligations between them. It sets aside rights and duties that exist under common law and creates new rights and duties, as the parties to a contract can give up or waive rights under common law. The elements of a contract are "offer" and "acceptance" by "competent persons" having legal capacity who exchange "considerations" to create "mutuality of obligations". Figure 1 illustrates the basic generic concepts, i.e. what is exchanged, what are the objectives of the two parties and what are the risks.

SANS 10845-2 defines conditions of contract as "terms that collectively describe the rights and obligations of contracting parties and the agreed

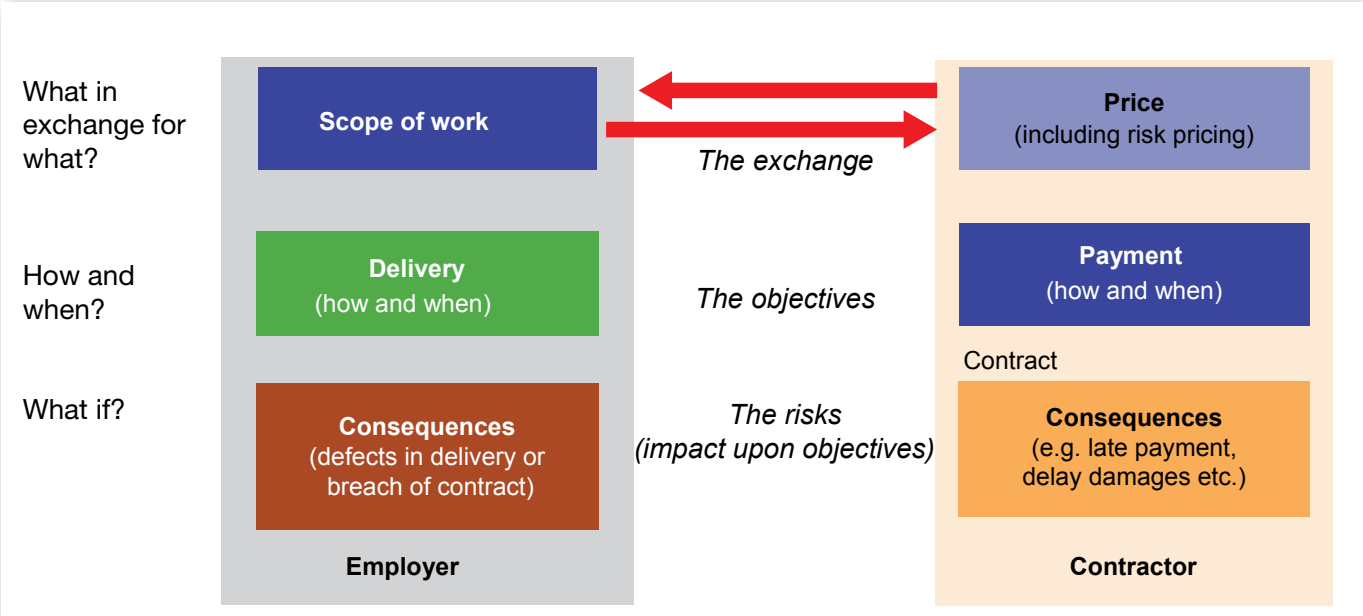

Figure 1: Fundamentals of a contract

procedures for the administration of their contract". ISO 6707-2 defines conditions of contract as a "document that contains the detailed provisions incorporated in a contract, laying down the rights and duties of the parties, the functions of the people connected with the contract and the procedures for administering the contract".

DEALING WITH RISK IN INFRASTRUCTURE-RELATED CONTRACTS

Risk is defined in the ISO Guide 73 as the "effect of uncertainty on objectives". A more expansive definition of risk is the deviation, positive or negative, from the expected on an organisation's objectives arising from the deficiency of information relating to the understanding of an event, its consequence or likelihood.

Risk is characterised by reference to:

- potential events, i.e. the possible occurrence or change of a particular set of circumstances or something not happening; and
- consequences, i.e. the outcome of an event affecting objectives which can be expressed quantitatively or qualitatively.

Risk is often expressed in terms of a combination of events, including changes in circumstances and the likelihood (chance of something happening) of the occurrence. Risks are linked to hazards (source of potential harm). It is frequently measured in terms of consequences and likelihood, i.e. the outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain (consequences) and a qualitative description of probability of frequency (likelihood).

Risks in contracts involving general goods and services (off-the-shelf readily available commodities, and standard, well-defined, scoped and specified services which require little or no management) are low and well understood, and rarely result in an increase in the total of the prices from the time that the contract was entered into. This is seldom true in infrastructure projects. Not all risks can be accurately forecasted or controlled during project planning and implementation. Risks can influence the delivery of a project with respect to time, cost and quality, and in extreme cases, the completion of the contract. The generic sources of risk on such projects include commercial and legal relationships, 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 weak clients who are not capable of making timeous decisions, or who have difficulty in providing information timeously or paying promptly or providing access to the site for the contractor timeously.

Accordingly, risk taking is necessary in infrastructure projects. Risk management in this context is all about identifying the salient risks, assessing their likelihood and deciding on how best to manage the project in the light of this information. The parties to a contract face choices on how to deal with the inherent project risks. Risks can be transferred or accepted. In some instances, insurances can be taken out to cover risks, e.g. as a hedge against adverse currency exchange rate fluctuations or to cover storm damage to the works.

RISK ALLOCATION IN CONTRACTS INVOLVING THE DELIVERY, REHABILITATION, REFURBISHMENT OR ALTERATION OF INFRASTRUCTURE

The distribution of risk between the parties to a contract involving the delivery, rehabilitation, refurbishment or alteration of infrastructure can generally be arranged to suit the parties. Good practice is to assign risk to the party that is best able to manage risk, or enter into collaborative contracting arrangements which enable risks to be proactively managed by both parties. The focus in the distribution of risk is, however, on the payment and responsibility for the cost of the event, should it materialise. The contractor tries to limit liability in contracts to a foreseeable figure. The client needs to bear in mind that increasing the risk borne by the contractor inevitably increases the price of the contract.

In single one-off projects, a client may wish to pay a price premium in exchange for price, as illustrated in Option 1 of Figure 2. Where there are a number of projects within a programme, risk can be spread across projects, in which case it may be preferable for a client to retain risk and realise savings as indicated in Option 2 of Figure 2.

The price of a project depends to a large extent on the risks taken by the parties, and if risk is retained, how well risks can be mitigated during the execution of the contract or order.

RISKS ASSOCIATED WITH THE DIFFERENCE BETWEEN WHAT IS PAID AND WHAT WAS ESTIMATED AT THE TIME OF TENDER

Another issue that needs to be addressed is who takes the risk for the difference between the actual prices paid in terms of the contract and those estimated at the time of tender, and how changes to the works are assessed and paid for. The contractor is at risk where payment is based on lump sums or activity schedules. The client is at risk where the contractor is paid on a cost-plus basis. This risk is shared by both the client and the contractor for other pricing strategies as indicated in Figure 3.

CHANGES TO THE PRODUCTION INFORMATION AFTER THE AWARD OF THE CONTRACT OR THE ISSUING OF AN ORDER

The total of the prices in contracts involving the delivery, rehabilitation, refurbishment or alteration of infrastructure can also increase due to changes introduced into the production information (information enabling either construction where the constructor is able to build directly from the information prepared, or the production of manufacturing and installation information for construction) by the client after work on site or manufacturing has commenced. Such changes may be required to enhance the quality or performance of the plant, services or works, or address shortcomings which, if not corrected, would impair the functioning of the plant or works. These changes can, however, present contract management challenges, which in turn result in time and cost overruns. Contractors need to assess two types of impacts of such changes, namely:

- direct impacts which are assessed in terms of the material, labour, equipment, etc, required to implement or accommodate a requested change; and
- secondary impacts (disruption, cumulative impact, productivity loss, knock-on impact or ripple effect) which consider the effect of executing or accommodating a change on the ability to perform the unchanged work (base scope of work) at planned productivity.

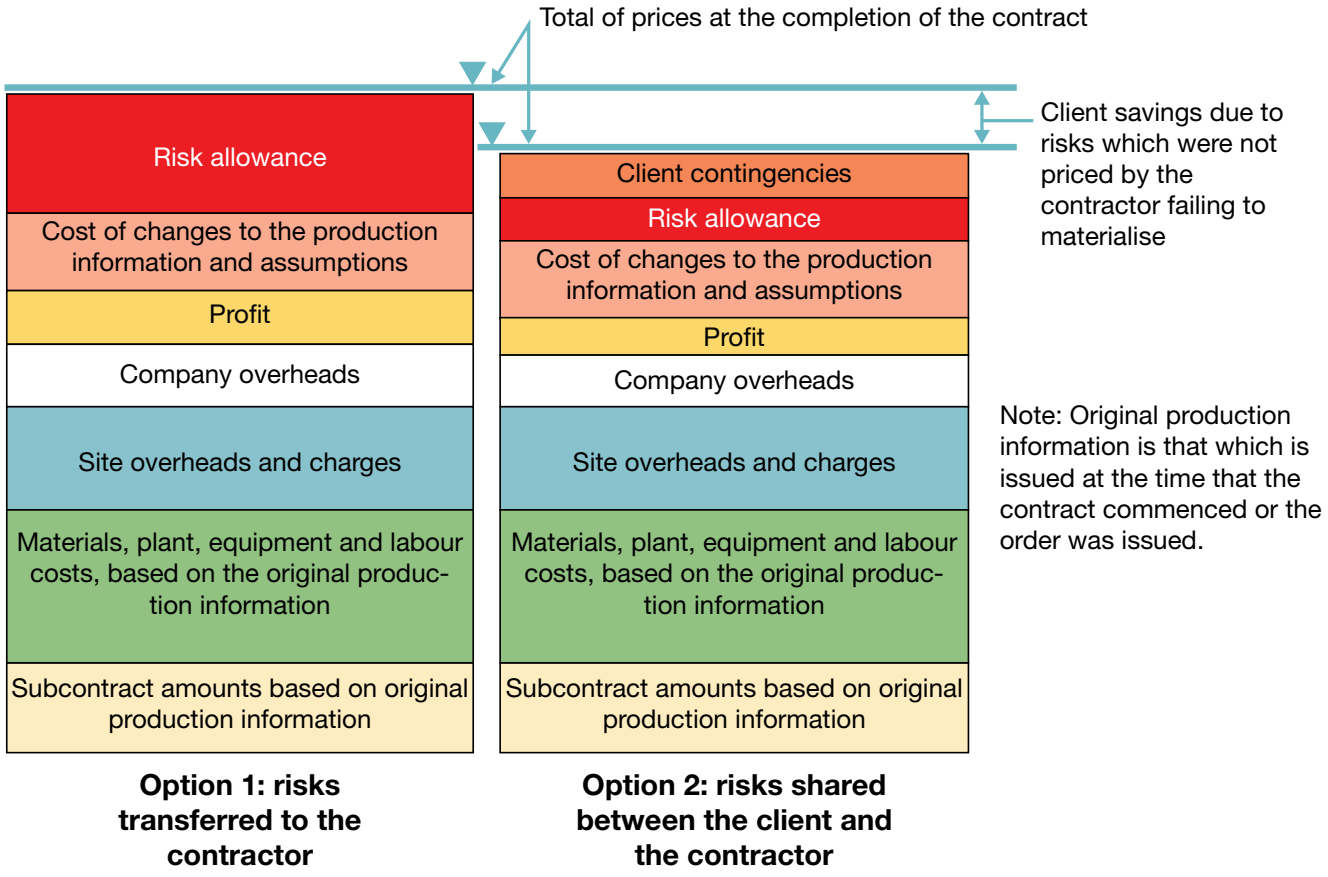

Figure 2: The make-up of the final cost of an engineering and construction works contract

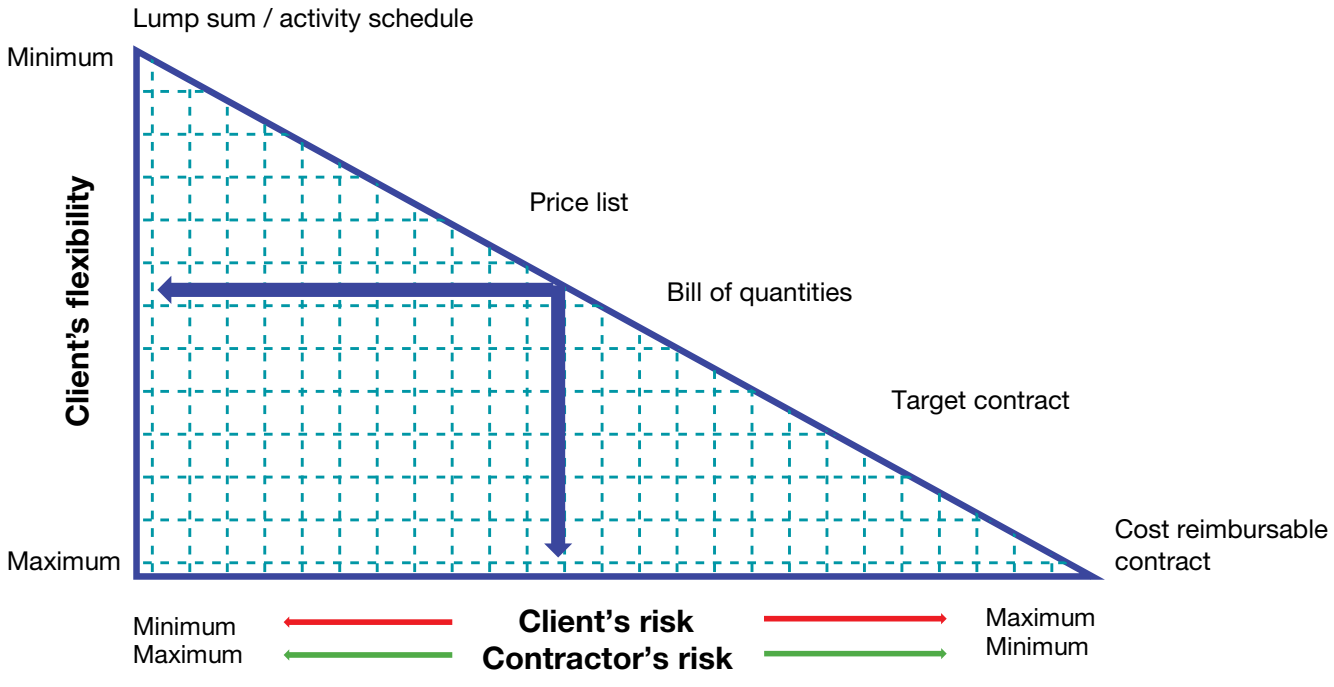

Figure 3: The relationship between risk/flexibility and pricing strategies

Secondary impacts, which grow disproportionately over successive changes can be very large, and in some instances larger than the direct impacts of the requested change. This may be due to the difficulty in managing the impacts of change for a number of reasons:

- impacts may be widely separated in space and time from causes, synergistic across a large number of changes, propagating through projects, and as a result cannot readily be traced to the original change, and are difficult to quantify and accurately assess;
- productivity loss due to factors that are hard to measure, such as out-of-sequence effect, rework effect, availability of required expertise to effect changes and staff morale, as well as the effort required in rework;
- causes and drivers are difficult to discern, and timing and strength of cause are difficult to identify;
- underestimation of the influence of bringing in new resources to accommodate the requested changes; and
- uncertainty in knowing which mitigating actions will be the most effective.

Contracts need to make provision for not only the changing or varying production information, but also the assessment of the impact of such changes on costs and time for completion.

STANDARD FORMS OF CONTRACT

A standard form of contract or standard contract is commonly used on infrastructure projects. Such contracts are published by an authoritative industry body. They provide fixed terms and conditions which are deemed to be agreed, and are not subject to further negotiation or amendment when applied to a particular tender.

The standard forms of contract, apart from dealing with rights and duties of the parties to the contract (employer and contractor) commonly make provision for matters such as:

- procedures for making changes to the scope of work (documents that specify and describe the goods, services, or engineering and construction works which are to be provided, and any other requirements and constraints relating to the manner in which the contract work is to be performed) after the formation of a contract;
- procedures to address the impacts on time, cost and quality or performance of changes made to the scope of work after the formation of a contract and the occurrence of events for which the contractor is not at risk;
- the seeking of instructions on how to proceed when particular events occur or circumstances arise;
- the risks which are borne by each party and how the contractor is compensated for risk events for which he is not at risk;
- how defects (parts of the goods, and services of works which are not in accordance with the scope of work) are to be dealt with;
- procedures for termination, and the determination of what is due to the contractor upon termination;

Table 1: Approved forms of contract related to the delivery and maintenance of infrastructure

Contract type and SANS 10845-2 definition	National Treasury approved standard forms of contract
Engineering and construction contract: contract for the provision of a combination of goods and services arranged for the development, extension, refurbishment, rehabilitation or demolition of a fixed asset, including building and engineering infrastructure	FIDIC Short Form of Contract FIDIC Conditions of Contract for Construction for Building and Engineering Works designed by the Employer FIDIC Conditions of Contract for Plant and Design-build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor FIDIC Conditions of Contract for EPC Turnkey Projects FIDIC Conditions of Contract for Design, Build and Operate Projects
	JBCC Principal Building Agreement JBCC Minor Works Agreement
	NEC3 Engineering and Construction Contract NEC3 Engineering and Construction Short Contract
	SAICE General Conditions of Contract for Construction Works
Service contract: contract for the provision of labour or work, including knowledge-based expertise, carried out by hand or with the assistance of equipment and plant	CIDB Standard Professional Service Contract
	NEC3 Professional Services Contract NEC3 Professional Services Short Contract
	CIDB General Conditions of Service
	NEC3 Term Service Contract NEC3 Term Service Short Contract
Supply contract: contract for the provision of goods, including materials or commodities made available for purchase and, where relevant, associated services	CIDB General Conditions of Purchase CIDB Contract for the Supply and Delivery of Goods
	NEC3 Supply Contract NEC3 Supply Short Contract

- the certification of amounts due in terms of the contracts;
- the certification of delivery or completion of the works;
- the actions of an agent of the employer; and
- the resolution of disputes.

Standard forms of contract make provision for the adjustment of both the prices and the time for completion for changes in the scope of work and for risk events for which the contractor is not at risk. Increases in the prices after the award of a contract or the issuing of an order arising from changes in the scope of work or risks events do not constitute an amendment to the contract.

Standard forms of contract enable tenderers to take into account the allocation of risks embedded in such contracts when preparing tenders for infrastructure projects, and enable tenders to be evaluated on a comparative basis. There is also no need for tenderers who are familiar with a particular form of contract to price risks arising from uncertainties as to how particular issues will be viewed or handled in terms of the contract.

Risks need to be unambiguously stated and understood when tenders are priced, so as to avoid excessive risk pricing. The difficulty in tampering with the standard clauses of a contract is that the bespoke provisions in many instances change the allocation of risks between the parties or introduce conflicts, ambiguities and uncertainties in the provisions of the contract. If a party fails to appreciate what has been changed, it may result in an inability to resolve issues, which in turn can lead to litigation and poor contractor performance. If contractors do pick it up at tender stage, they will simply walk away from the project or risk-price it. Those that do not pick it up will inevitably grossly under-price the tender and will not be able to cope if anything subsequently goes wrong. The cost to complete the works where a contractor goes insolvent is considerably higher than the cost of the outstanding work. Performance bonds are usually insufficient to cover such increased costs.

The SIPDM requires that an appropriate standard form of contract (latest edition) be selected from a prescribed list (see Table 1). Such forms of contract are required to be used with minimal contract amendments which do not change their intended usage and should only be amended when absolutely necessary to accommodate special needs. Adjudication is required to be used to resolve disputes arising during the performance of a contract prior to proceeding to either arbitration or litigation.

The forms of contract contained in Table 1 are drafted around significantly different objectives and principles which enable risks to be allocated and managed in a number of different ways, ranging from risk sharing to risk transfer in return for a price premium. The standard forms of contract provide contracts with fixed risk allocations, based on the traditional approach to delivering infrastructure at one end of the spectrum to collaborative working at the other. They also have different approaches to dealing with the effects of delays and disruptions in the delivery of infrastructure. Some have back-to-back subcontracts and an open-book approach to the cost of change. Collectively they cover the range of contracting and pricing strategies that are encountered in the delivery of infrastructure. Each of these forms of contract has its advantages and disadvantages.

The NEC3 family of contracts includes a framework contract as a head contract for this type of contracting arrangement. The NEC3 Framework Contract needs to be used in conjunction with one of the NEC3 engineering and construction, supplies, professional services or term services contracts. It does not promise work, but sets out how a framework contractor is selected, the management of the process of defining the scope of work and agreeing the price, what the conditions will be and how the work will be executed. This contract makes provision for the payment of advice on a time-charge basis. Framework contracts can be entered into using the different forms of NEC3 contracts without using this head contract through Z-clauses and the careful formulation of contract data. The SIPDM contains detailed provisions for framework contracts and does not require a head contract such as that provided in the NEC3 family of contracts to establish many of the principles associated with this form of contract. The NEC3 Framework Contract is used to establish a means of entering into contracts, whereas the SIPDM requires that a contract be entered into before an order is issued. The omission of the NEC3 Framework Contract from Table 1 is accordingly not an error or oversight. The use of the NEC3 Framework Contract is not endorsed for use in the public sector in South Africa.

CONTRACT MANAGEMENT

Contract management or contract administration (terms which are frequently used interchangeably) relates to the performance of the functions of persons connected with the contract in administering the contract. A contract manager is the person who performs a contractual role to oversee the employer's interests and acts on behalf of the employer in terms of the contract. Such a person, depending upon the form of contract that is selected (see Table 1) and the severity of the risks carried by both parties may be identified in the contract as "principal agent", "employer's agent", "project manager", "supply manager", "services manager" or "engineer" where the risks are high, and "employer's representative" or "employer's delegate" where the risks are low.

Typically, the responsibilities of such a person comprise the management of all actions after the award of a contract, including ensuring compliance with the terms and conditions, assessment and certification of contractual payments and risk events, documenting and agreeing any changes to the information provided to the contractor (variations) that may arise during its execution, and providing the contractor with information, access or things required in terms of the contract. In engineering and construction works contracts, the contract manager needs to maintain a direct decision-making link between the design and construction processes, and needs to communicate to the contractor any changes in information provided, or obtain outstanding information.

The contract manager, in overseeing the employer's as opposed to the contractor's interests, has full authority and obligation to act in terms of the contracts. An assumption is made by the drafters of the contract that the contract manager has the employer's authority to carry out the actions and make the decisions required of him. His obligations and duties are, however, governed by his contract or relationship with the employer. If this constrains him in any way, it is his responsibility to ensure that all the necessary approvals are obtained timeously to enable him to comply with the provisions of the contract. He is free to seek the employer's views as much or as little as his relationship and contract with

the employer requires. He will normally maintain close contact with the employer so that his decisions reflect the employer's business objectives.

The SIPDM defines contract management as "applying the terms and conditions, including the agreed procedures for the administration thereof". This standard establishes requirements for those administering a contract or order on behalf of the employer to:

- act as stated in the contract, subject to any constraints that may be imposed by the employer or the employer's Supply Chain Management (SCM) Policy for Infrastructure Procurement and Delivery Management;
- provide certain data associated with the contract within stipulated time frames, including cash flows, insurance claims, revised estimates of prices and provisions for price adjustments for inflation, revisions to the total of the prices or completion or delivery date for the contract or an order, etc;
- retain, on a contract file, copies of certificates of insurances, bonds and the like;
- make an assessment of the amount due to the contractor (the other party to the contract) where required in terms of the contract, or review the contractor's assessment of the amount due and timeously certify payment;
- develop and maintain a contract risk register; and
- report on a number of key performance indicators.

To act as stated in the contract is to perform the actions or carry out the duties assigned to the employer's agent in the standard form of contract and to take any necessary decisions associated therewith. This requires a comprehensive understanding of not only the fundamental rights and duties of the parties to a particular form of contract but, more importantly, the context and detailed procedures for the effective administration of such a contract. This requirement in effect makes the administrative procedures of the selected form of contract an integral part of an organisation's standard operating procedures. It is therefore important that an organ of state's procurement system should be designed around the administrative procedures and not impose changes on or tamper with such procedures. If, for example, the JBCC form of contract is selected, the JBCC administrative provisions need to be applied consistently throughout the procurement system.

The SIPDM requires that the person responsible for the administration of a contract or order (i.e. the agent of the employer) relating to the provision of new infrastructure or the rehabilitation, refurbishment or alteration of existing infrastructure, is required to be registered in a professional category of registration in terms of the Architectural Profession Act, the Engineering Profession Act, Landscape Architectural Profession Act, the Project and Construction Management Professions Act or Quantity Surveying Profession Act. It should be noted that contract management forms part of the normal services of built environment professionals and is included in the recommended scope of services and associated guideline fees published by the various councils.

Contract management, as defined in the SIPDM, does not extend to the management of payment to contractors and the management and administration of finances for a portfolio or programme of projects.

The SIPDM under Procurement Gate 8 provides a number of controls associated with the administration of a contract which are linked to an organisation's SCM Policy for Infrastructure Procurement and Delivery Management. Accordingly, the employer's agent is constrained in carrying out some of the actions or duties assigned in terms of the standard form of contract. Approval needs to be obtained from the relevant designated person identified in the organ of state's SCM policy to obtain approval to:

- waive penalties or low performance damages (Procurement Gate 8A);
- notify and refer a dispute to an adjudicator, or for final settlement to an arbitrator or court of law (Procurement Gate 8B);
- increase the total of prices, excluding contingencies and price adjustment for inflation, or the time for completion at the award of a contract, or the issuing of an order up to a specified percentage (Procurement Gate 8C);
- exceed the total of prices, excluding contingencies and price adjustment for inflation, or the time for completion at award of a contract or the issuing of an order by more than 20% and 30%, respectively (Procurement Gate 8D);
- cancel or terminate a contract (Procurement Gate 8E); and
- amend a contract (Procurement Gate 8F).

NOTE

Further insights and information can be obtained from:

Construction Industry Development Board (2005). Best Practice Guideline #C2: Choosing an appropriate form of contract for engineering and construction works. Available at: www.cidb.org.za/publications/Documents/Choosing%20an%20Appropriate%20Form%20of%20Contract%20for%20Engineering%20and%20Construction%20Works.pdf.

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