



CESA

Consulting Engineers South Africa

The Voice of Consulting Engineering

MPUMALANGA PUBLIC-PRIVATE INFRASTRUCTURE FORUM

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Presentation Outline

- 1. Who is CESA**
- 2. Project Life Cycle- Consulting Engineers Input**
- 3. Performance Monitoring**
- 4. Procurement of Professional Services**
- 5. State of the Consulting Engineering Sector**
- 6. Delivery models to enhance job creation**
- 7. The one thing we all can do to grow our economy**

1. 1 Consulting Engineers South Africa (CESA)

History

- South African Association of Consulting Engineers (SAACE) founded in 1952
- Original membership 30 individuals
- August 2008 - SAACE transformed to Consulting Engineers South Africa (CESA)
- Consists of 480 multidisciplinary consulting engineering and management private firms
- Employing more than 22 000 people

was – 1952 - 2008



1.2 Consulting Engineers South Africa (CESA)

CESA promote interests of Members and Clients by:

1. Regular **liaison** meetings and **collaboration** with clients and other organisations
2. Publication of documents relating to the profession including **practice notes, best practice guidelines and case studies**
3. Publication of **the Directory of Firms** and maintenance of pre-screened database of consulting engineering firms.
4. CPD accredited **seminars and workshops** through the “School of Consulting Engineering”
5. An **Annual Convention** and **Engineering Excellence Awards**
6. **FIDIC** (International Federation of Consulting Engineers Associations)
7. FIDIC’s Group of Africa Member Associations (GAMA).

1.3 Consulting Engineers South Africa (CESA)

Professionalism and Integrity of Members:

1. In general:

- ECSA registers professional individual engineers, technologists etc
- CESA 'registers' professional Consulting Engineering Firms

2. Credibility of applicants

- In business > 12 months
- Nominated & Seconded by CESA member firms

3. Ongoing requirements

- Subject to CESA Code of Conduct (includes QMS & BIMS)
- Ownership/principals > 50% Pr Engrs/Techno's
- Primary work (Consulting Engineering)
- Developing Integrity Pact (see **Appendix A**)

Shared Vision

Create a conducive procurement environment - by sharing best practice – in order to enhance infrastructure delivery, in terms of speed, time and cost (quality outcome).

Ensure that *the right firm(s) are appointed for the right job*

Appointment at a fair and reasonable level of compensation

Ensure continued existence and development of firm(s) and industry

Serve the best interests of public

Best Interest of the Public



Fair and Reasonable priced services / infrastructure



Cost effective - Money spent on projects once, no rebuilding

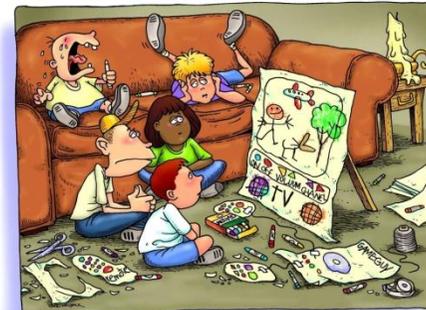
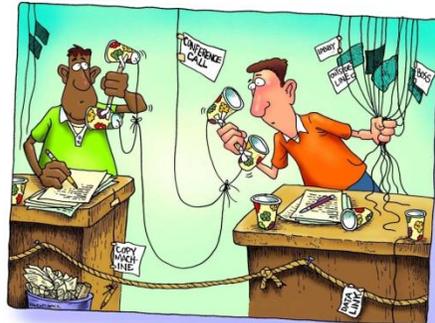
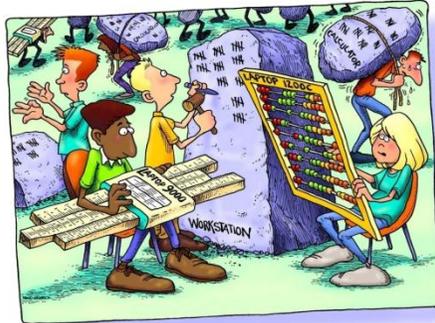


Safe, User friendly and Reliable Infrastructure



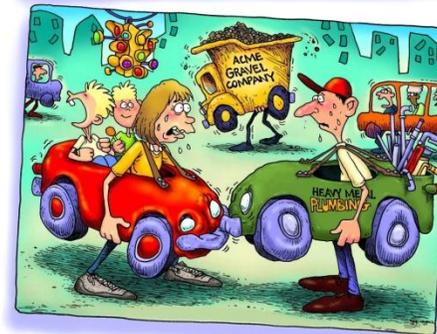
Appropriate / accessible Infrastructure

The WORLD WITHOUT ENGINEERS



 **Agilent Technologies**

<http://www.agilent.com/find/edu>



2.1 The Project Life Cycle

INFRASTRUCTURE DELIVERY CYCLE		Deliverable	Consulting Engineer's Inputs
Support services	1 Infrastructure planning	Infrastructure plan for MTEF period	Specialist inputs and cost advice
	2 Procurement planning	Procurement strategy	Specialist advice
	3 Package preparation	Strategic brief	Specialist inputs and cost advice
Design services	4 Package definition	Concept report	Develop solutions and report
	5 Design development	Design development report	Develop design and report
	6 Design documentation	Production information (drawings and specifications)	Produce production information
Contract related services	7 Works	Works in accordance with contract	Administer contract and confirm design intent is met
	8 Hand over	Record information	Produce record information
	9a Asset data	Updated asset register	Provide data
	9b Package completion	Completed contract	Close out contract

2.2 Value of Services – by project stages

1. Early project stages:

- Engineering Services deliver most value
- Functionality & quality of the proposed service more important than Cost (**Steps 1 to 3 - Identification, Definition, Feasibility**)

2. After project is well defined:

- Services are easier to determine
- Role of high level expertise reduces as project develops
- Efficient more routine tasks more important
- Correct/comprehensive contract documentation is vital

2.3 Value-added Services

Representation of typical Life Cycle Cost and Impact on Project Success

- ❖ The procurement of consulting engineering services **has the greatest impact on the life-cycle cost of the project**, yet it is the **least costly component**

Life-Cycle Cost



Impact on Project Success



Engineering

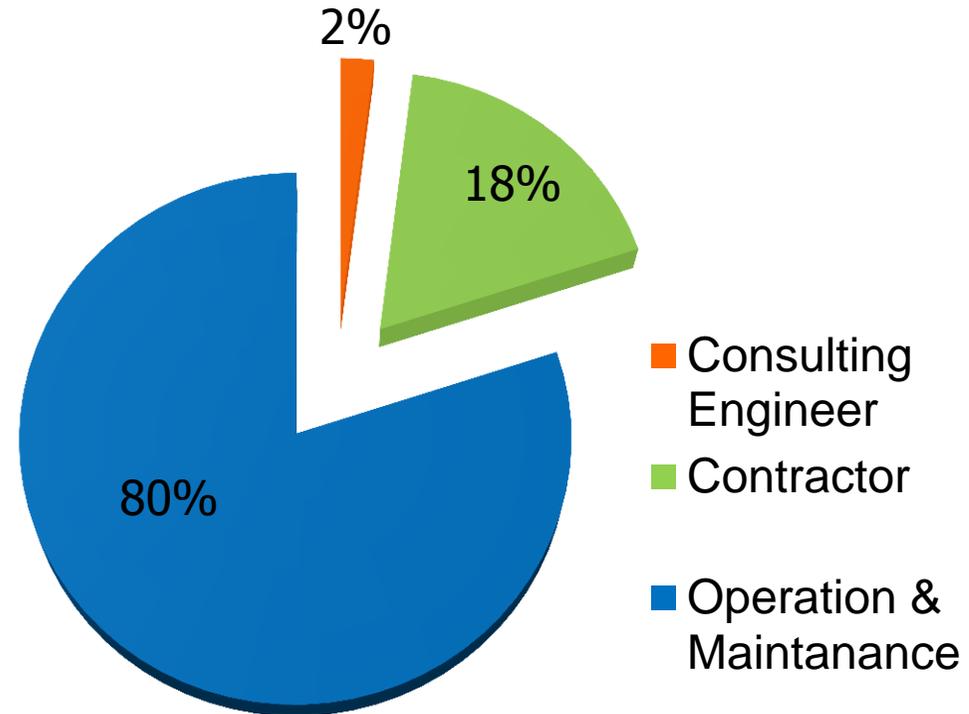
Construction

Operations & Maintenance

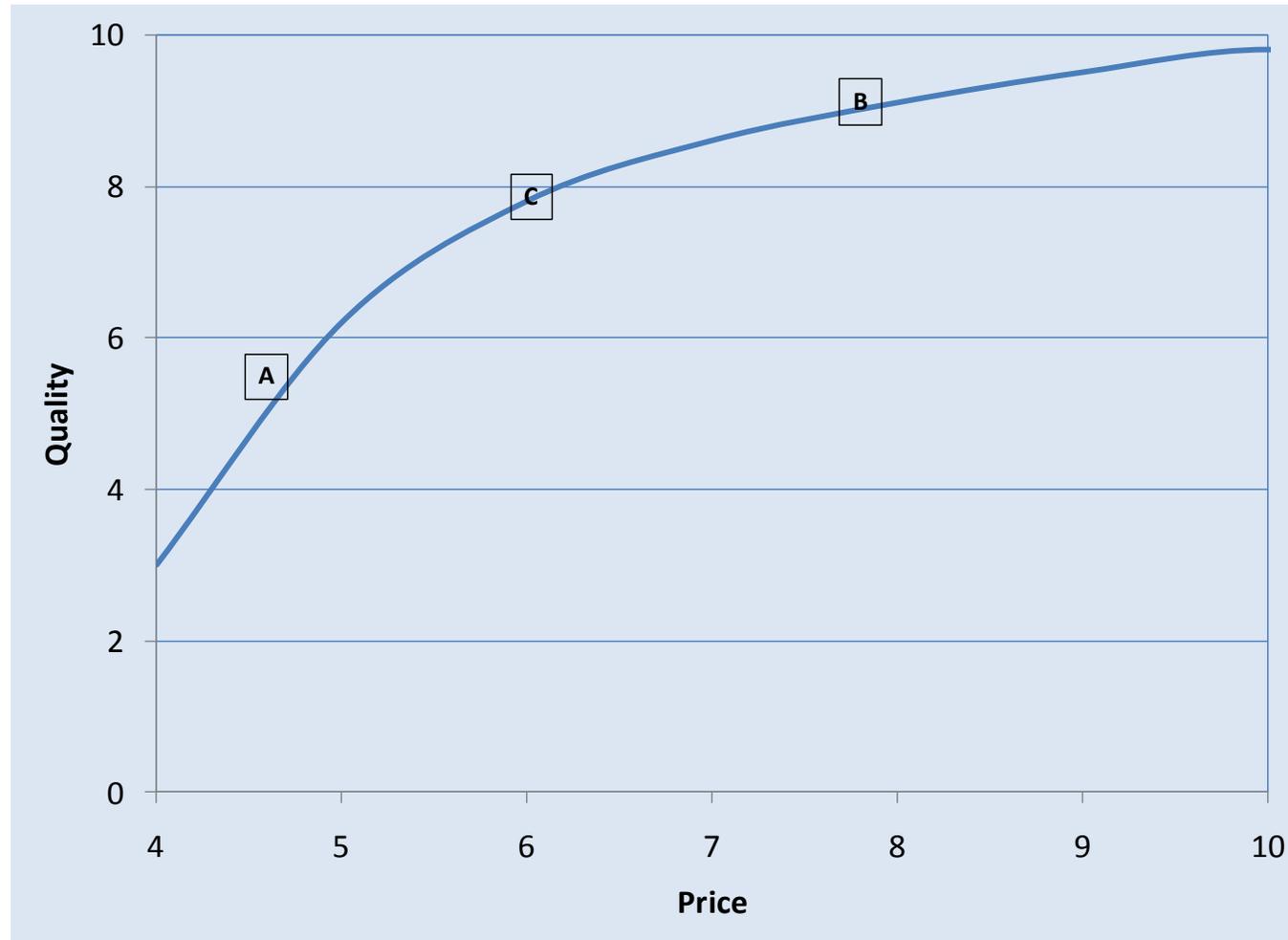
2.4 Value-added Services

Engineering Services to Life-cycle costs

- ✓ “engineering design” typically represent less than 2 % of overall lifecycle costs
- ✓ construction 6 to 18 %
- ✓ 80 to 93% representing operation; annual and capital maintenance ;and decommissioning



2.5 Value-added Services



Appropriate level of Quality

3.1 Performance Monitoring

Introduction

- ❖ Performance Evaluation of CE's is crucial in upholding & advancing the standards of service from Consultants

- ❖ Benefits of performance evaluation.
 - ❑ The client will know the level of service being delivered or delivered
 - ❑ Allows CE to be exonerated wrongful blame
 - ❑ The client will get an indication as to whether his choice for consultant was correct
 - ❑ Ensures integrity of the QCBS process
 - ❑ Assist in the pre-selection and bid evaluation
 - ❑ Raise the standard of consulting engineering industry

3.2 Performance Monitoring

- ❖ Quality Management System ISO 9001 : 2008 QMS or of similar levels (a condition of CESA membership) **produces Quality Outcome**
- ❖ Firms with QMS are “in control” of all its major areas – “key processes”
 - ❖ They employ the following QMS tools
 1. Document Control
 2. Audits
 3. Non-conformance Tracking
 4. CAPA (Corrective Action and Preventative Action)
 5. Management Review
- ❖ Firms are committed to continual improvement
- ❖ Being “in control” reduces variation, which improves quality and customer satisfaction

3.3 Performance Monitoring

Business Integrity Management System

- ❑ **Corruption undermines the achievement of a quality outcome,**
 1. resulting in projects which are unnecessary, unreliable, dangerous, and over-priced.
 2. And also resulting in tendering uncertainty, wasted tender expenses, increased project costs, economic damage, reduced project opportunities.
 3. This can lead to loss of life, poverty, economic damage and underdevelopment.

- ❑ CE have adopted the principles of a BIMS, Part of CESA members Code of conduct

- ❑ The practice of business integrity is crucial to fighting corruption and guaranteeing a high level quality outcome for the project.

3.4 Performance Monitoring

Points to Note

❖ Attributes – choosing engineering consultants

1. Technical competence
2. Managerial ability
3. Experience on similar projects
4. Dedicated personnel available for the project's duration
5. **PROVEN PERFORMANCE**
6. Local and/or local knowledge
7. Professional independence & integrity

4.1. Procurement of Professional Services

- **Preferential Procurement regulations are good**
 - **wide application is required**
- **Experience is necessary to assess quality (also structure)**
- **Inexperience leads to “centre of power” for procurement to wander**
- **Government Departments are not conducive to attracting experienced engineers**

4.2 Procurement of Consulting Engineering Services

FIDIC: Recommends – Quality Based selection

- **Qualifications** are evaluated
- The scope, schedule and appropriate fee are negotiated with the highest ranking firm
- **QBS is the law in the United States**

CIDB: Recommends – Quality-Cost-Based selection (Method 4)

- Firm scoring the highest points is awarded [**Price + Quality + B-BBEE**]

NT: Recommends – Lowest Cost-Based selection (Method 2)

- Quality is evaluated for pre-selection/hurdle – **minimum = 60%**
- Firm scoring the highest points is awarded [**Price + B-BBEE**]

4.3 Framework Agreement

The Framework Agreement is designed to allow the client to invite tenders from consulting engineers to carry out work on an “as instructed” basis over a set term. Generally The Framework Agreement is between two parties that establishes their terms for services over a set period of time, within **a broad scope of work**, without guaranteeing any quantum of services. The rationale behind using such agreements is that it saves the client from having to procure from the market each time a service, covered by the Framework Agreement, is required.

Framework Agreements are only entered into with consulting engineers **who have the resources and capability** to carry out the services envisaged and must include the means by which the consulting engineer is remunerated for the instructed work. Hence the evaluation of tenders for Framework Agreements must be based on quality as well as price – and not price alone.

5. State of Consulting Engineering sector

- CESA Engineers are **competent & in demand**
- Our Engineers are **not in the right place**
- Our profession has become **unattractive** as it has been reduced to a **commodity**
- What is a professional?
 - it's a **service** (implies experience, references etc)
 - Tertiary learning PLUS **Code of Conduct**
 - **Quality, experience, competence** varies
- Procurement of our services **MUST** include **objective** and **subjective** criteria in a **single evaluation process**

6. Delivery models to enhance job creation

- Job Creation requires innovation in unlocking projects
- Win-win mentality is required (trust)
- Entrepreneurial delivery mechanisms:
 - Framework Contracts
 - PPP's
 - Unsolicited bids (PPP's)
 - Partnering
 - (continue traditional models)
- Share in risks (no risk... no reward!)



7. The one thing we can all do to grow our economy

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Address Business Integrity

- Socialising with clients
- Conflict of interest
- Use of agents and partners
- Collusion
- Bribery
- Personal information
- Confidential information

Don't be trapped in your own reasoning!!

We all have an ethical balance!



7. The one thing we can all do to grow our economy

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Embrace CESA BIMS

- Based on **FIDIC** Guidelines
- CESA **Policy Statement**
- Guideline is part of **CESA Code of Conduct**
- Failure to comply results in **disciplinary action**
- Focus is on **internal** and **external** integrity issues
- High level **Do's and Don'ts** provided
- **Reporting** all cases to CESA
- Support and encourage use of CESA

Whistleblower Schemes



7. The one thing we can all do to grow our economy

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Embrace CESA BIMS

- Some business environments do not support your own **company value system**
- Business can make a difference by **conscientious objection** (do not participate)
- Business must **speak out!**
- Be mindful of **social pressure** placed on decision makers in developing countries.

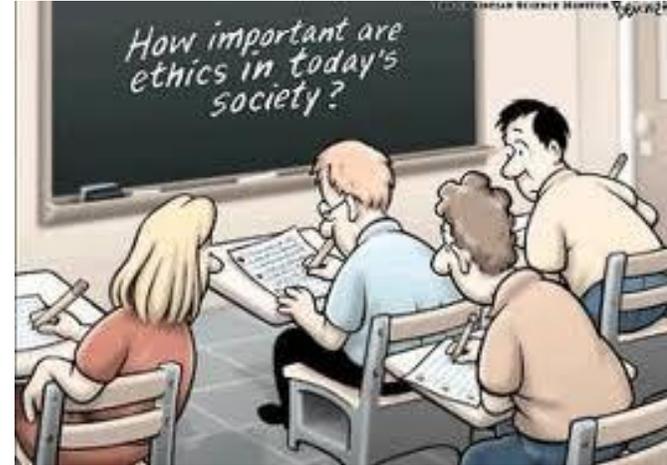


7. The one thing we can all do to grow our economy

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Listen to the voices on the street

- Perceptions of the man on the street (TNS Survey 2011)
- Corruption, poverty, unemployment in top tier
- Social, well being issues & service delivery in second tier
- CESA members can make a difference to the top tier issues



7. The one thing we can all do to grow our economy

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Look at yourself in the mirror !

- Examine your own ethical balance!
- Align it to your BIMS policy &
SAY NO TO CORRUPTION!



CESA Engineers, Unquestionably Ethical!



CESA

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The Voice of Consulting Engineering

THANK YOU

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