A reader received an e-mail notice from a supplier earlier this month:

“We will unfortunately have a power down between 09:00 and 15:30 on 9 December 2004. We apologise for any incontinence and will try to respond to any e-mails you might send during this time ASAP.”

We wonder if Eskom has considered this spin to the disruption power outages cause.
“Water service delivery – the weakest link!”
Presentation to

“Water and Sanitation Conference, 2009”

Kevin Wall, CSIR

Cape Town, 27 May 2009
Sequence of presentation:

- Integrated delivery process – weakest link – report card
- Focus on skills
- Focus on incentives
- To conclude
Chapter 1:

- Services delivery is a process and an integrated system. Both are only as strong as their weakest links.
- What is delivery?
- Findings that the weakest generic links are .....
The “weakest link”

• Providing effective service delivery requires a combination of management, financial, engineering, economics and social practices and techniques within a robust framework and management plan.

• The process can be viewed as a chain of events – and this chain is at any moment in time only as strong as its weakest link at the time.
• An integrated system ....
Water and the poverty trap

- Poor level of water services
- Spread of HIV/AIDS
- Loss of dignity
- Skills deficiencies
- Limited employment opportunities
- High cost for provision of household water and sanitation
- Disease and sickness
- Education problems

POVERTY
POOR WATER SUPPLY
POOR SANITATION
The poverty trap

The Eastern Cape is still one of the most economically depressed parts of the country.

Sunday Times
10 May 2009

Charles Molele

The province's maternal mortality rate has increased sharply, from 120 deaths per 100,000 in 2000 to 189 deaths per 100,000 in 2007.

The problems of a civil service in transformation are immense, while corruption and low morale remain huge challenges for the ruling ANC administration.

More than 400 cases of alleged corruption have been reported since 2004. Infrastructure in many districts is crumbling. Roads are riddled with potholes, rubbish lines streets and power cuts are the order of the day. Some villages are hard to reach due to poor roads.

Mthatha, people complained bitterly about regular power and water cuts.

'People of the Eastern Cape are worse off than they were prior to 1994... and the situation is deteriorating'.

On 31 July 2008, former premier Mbulelo Bongo announced the implementation of a provincial service delivery acceleration plan aimed at "enhancing coherence within government and public institutions to deliver on the promise of a better life for all".

But the lives of the people remain unchanged. The allocation of welfare grants has increased dramatically; an estimated 2.5 million of the province's 6.9 million people depend wholly on social and child grants to survive.

Unemployment is rife at 27.4%. More than 400,000 people are being treated for HIV/AIDS. Since 2005, TB cases have increased by 30%.

Mucked up: Service delivery in Duncani Village, East London, is dire — as in many parts of the poverty-stricken Eastern Cape.

Picture: Gary Horsnier
The poverty trap – Eastern Cape

• 7 out of 10 people in Eastern Cape live in poverty
• 2.5 million out of 6 million people wholly depend on social and child grants
• 27.4% unemployment
• Only 60,000 people being treated for HIV/AIDS (1%)
• TB cases have increased by 30% since 2005
• For every 100,000 births, the maternal mortality rate has increased from 120 (2000) to 199 (2007)
• Government is suffering from a skills shortage and corruption is hindering delivery processes.
Example of solutions finding

Problem

Cause of problem

Potential solution

Roleplayers

- Maintenance work is not up to standard
  - Inadequate number of maintenance staff
  - Inadequate maintenance skills

- Poor maintenance plans

- Incomplete asset registers

Potential solutions:

- DWAF/WSA/DPLG
- DWAF/DPLG
- DPLG/WSA/DWAF
- DWAF/DPLG
- DPLG/WSA/DWAF
- DWAF/DPLG/SITA
- DPLG/WSA/DWAF
Sustainable water services

- Governance
  - e.g. policy & standards

- Service infrastructure
  - e.g. capacity, condition, technology

- Financial aspects
  - e.g. funding, cost recovery

- Effective management
  - e.g. process & leadership

- Institutional
  - e.g. system & staffing

- Water resources
  - e.g. availability & quality

- Environmental aspects
  - e.g. health & protection

- Effective operation
  - e.g. skills & resources

- Social aspects
  - e.g. customer satisfaction; health

- Effective maintenance
  - e.g. care & proactive servicing
Technology/capacity/resources is very often the main problem area -- the site of the weakest link in sustained service delivery. But, just as often, the most important or most urgent weakness lies elsewhere. For example, one or (usually) more of the following (examples only -- this list is not exhaustive):

- suboptimal spatial planning (both in terms of where areas are located, and how areas are planned);
- misplaced obsession with goals of "best practice" and "world class", often at the cost of "good enough" and "fit for purpose";
- skills shortfalls ......
— inappropriate institutions (the wrong kind of institution; or the right kind, but it is not sufficiently functional);
— the inadequacy of institutional and administrative procedures and systems (e.g. procurement processes) that could enable more assistance than they do;
— poor operation and maintenance: the services have been delivered, yes, in the sense that the pipe is in the ground -- but operation and maintenance is such that it is not delivering reliably, or is not delivering at all;
— incentive structures (both "carrots" and "sticks") very far from where they should be, leading to these incentives being overridden by other, more compelling, contrary incentives that encourage behaviour not in accordance with sustained delivery.
• Need a broad perspective of the dynamics and means by which service delivery institutions fulfil their purpose. This involves discovering, analysing and prioritising relationships.

• It helps to visualise the functionality environment in terms of three spheres, being:
Technology, capacity & resources

Institutional/administrative procedures and systems

Vision, goals, values, incentives, political factors, ...
When only the "technology, capacity and resources" sphere is identified as having failed, the “solution” is then invariably a combination of changing the technology, adding resources (such as more funding) or capacity-building to address the "capacity" issue. Sometimes, however, institutional/administrative arrangements are addressed - for example improved billing system for services, or improved reporting structures. Seldom is the third sphere addressed.
Chapter 1:

- Services delivery is a process and an integrated system. Both are only as strong as their weakest links.
- What is delivery?
- Findings that the weakest generic links are ....
Infrastructure, in the form of public buildings, roads, water and sewerage systems, electricity and other services, supports quality of life and is the foundation of a healthy economy.
“Infrastructure services can contribute to reducing poverty by empowering. The vulnerability of poor people can be countered by redressing low income levels, hazardous physical conditions, social powerlessness and isolation. Infrastructure has considerable potential in this regard.” (DBSA 2006)
The poorer citizens generally do not have alternative coping systems, and therefore are relatively speaking the hardest hit by unreliable infrastructure delivery.
The stock of public sector infrastructure is significant.

Current replacement cost of this infrastructure, excluding that owned by the State-owned enterprises, exceeds R1000 billion.

*CSIR 2006*
“Delivery” needs to be understood as embracing not just the construction of infrastructure but the operation and maintenance of that infrastructure throughout its intended life.
• “If the government spends its maintenance budget on fixing infrastructure only after it has already broken down, then it is effectively throwing away a large proportion of that budget – funds that could rather have been used elsewhere to improve the quality of life of its citizens.

• This is because it is much cheaper to carry out periodic preventative maintenance than to do repairs when infrastructure breaks down.” (NIMS)
“The SAICE infrastructure report card for SA: 2006”

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‘PATCH & PRAY’

Chronic underspend on maintenance of South Africa’s public infrastructure ➤16

CIVIL ENGINEERS’ INFRASTRUCTURE REPORT CARD

D+
Chapter 1:

• Services delivery is a process and an integrated system. Both are only as strong as their weakest links.
• What is delivery?
• Findings that the weakest generic links are .....
“Priority 1” solutions

- Awareness: 7%
- Finance: 16%
- Guidelines: 2%
- HR: 31%
- Technical: 11%
- Operation & Maintenance: 7%
- Management & Leadership: 13%
- M&E: 4%
- Legal & procurement: 9%
The principal systemic issues underlying inadequate provision for long-term management and maintenance are:

- inadequate budgets; and
- inadequate skills (and especially technical skills) and experience.

Together with:

- Lack of will/incentives to remedy the situation.
To sum up this chapter:

• Delivery results from a process - which process has to be understood by and subscribed to by all those with material influence on the process;

• the process can be viewed as a chain of events - and this chain is only as strong as its weakest link;

• for the chain to be strengthened, its weakest link must be identified, and then the weakness addressed;

• conversely, it is of no immediate value to attend to other links until the weakest link has been strengthened.
By the way ...........

- What works for one situation at one time may not work in another situation at a different time.
- One size does not fit all.
- Need to find weakest links, yes, but also aspects of strength, on which performance improvement can be built.
Chapter 2

Focus on skills.
In 2004 there were ~ 15 000 civil engineers, technologists and technicians. Shown below is the % employed per sector.
Developed local government in 1989

- Population served ~ 14 million
- Civil engineering professionals ~ 2500
- ~ 21 civil staff per hundred thousand population
Local government since 2000

- Population served ~ 47 million
- Civil engineering professionals ~ 1300
- ~2.8 civil staff per hundred thousand population
Civil engineering staff in 2005

Civil engineering professionals

- 0
- 1
- 2
- 3
- 4
- ≥ 5

DMAs
Successful local authorities internationally

Graph showing civil staff per 100,000 population across different population ranges. The bars represent South Africa, 2007, English-speaking and Scandinavian countries, 2007, and South Africa – main centres, 1989.
Engineering influence reduced

- City/Town Engineer replaced by Technical Services Director
- Technical Director at same level as heads of support departments
- Many Technical Services Directors are non-technical
- Large number of inexperienced engineering technicians
Environment

Challenges Council-wide

- Few senior staff experienced – need to professionalise and not politicise
- Officials have little or no authority, with too many operating decisions being taken by Council
- General challenge of leadership results in
  - Lack of discipline
  - Lack of systems
  - Poor or no processes
  - Inappropriate selection of staff
Two options
Rebuild civil engineering capacity or Outsource
But Both require capacity!
Build, not restructure

Employ/deploy
- Employ ~200 students per annum
- Employ ~200 graduates per annum on 3 to 5 year training contracts
- Employ ~150 retired mentors / supervisors
- Attract ~300 experienced municipal staff back into the sector

Secondment
- Private sector to second experienced municipal staff to local government to rebuild capacity, structures and systems

Outsource
- Where appropriate, outsource to NGOs, CBOs, microenterprises, larger private sector

Adopt-a-town
- Private sector contractors to adopt-a-town to:
  — Address backlogs
  — Refurbish and rehabilitate
  — Put operating and maintenance systems and processes in place
  — Address losses, increase income etc
  — Build capacity
Artisans and operators

• There are ~ 2000 plumbers and other water service men in local government, but ~ 1100 vacancies. Plus more posts required – largely for maintenance

• The majority of the 3 000 to 5 000 operators working in the 2 000+ water and wastewater treatment plants do not meet DWAF requirements.
Servicing schools
Sanitation and water facilities
Water and the poverty trap

- Poor level of water services
- Disease and sickness
- Spread of HIV/AIDS
- High cost for provision of household water and sanitation
- Limited employment opportunities
- Loss of dignity
- Skills deficiencies
- Education problems

POVERTY

POOR WATER SUPPLY

POOR SANITATION
Many schools look like this
Chapter 3

Focus on incentives.
The Price Of Greed
How Wall Street took a mighty fall—and brought markets around the world down with it

By Andy Serwer & Allan Sloan
It’s the incentives!!
Carrots and sticks
Self-actualization
- morality, creativity, spontaneity, problem solving, lack of prejudice, acceptance of facts

Esteem
- self-esteem, confidence, achievement, respect of others, respect by others

Love/Belonging
- friendship, family, sexual intimacy

Safety
- security of body, of employment, of resources, of morality, of the family, of health, of property

Physiological
- breathing, food, water, sex, sleep, homeostasis, excretion
• NEGATIVE performance bonuses for those that do not perform?
  - Dr Michael Sutcliffe
• **DWAF as Sector Leader:**
  – Create an enabling environment for IAM (including policy, legislation, norms & standards)
  – Develop a national IAM strategy and implementation framework
  – Facilitate stakeholder participation & awareness
  – Provide support, training and mentorship

• **DWAF as Sector Regulator:**
  – Monitor performance of IAM
    • service interruptions, service quality, functionality, etc.
  – Audit compliance to minimum IAM standards:
    • asset registers, maintenance plan, risk plan etc.
  – Audit asset values & asset investment plans (with NT)

• **DWAF as Custodian of Water:**
  – Pollution control, water conservation / leakage control
  – Cost-effective use, licensing etc.
Chapter 4:

To conclude:
There are no quick fixes!

• Essential: Sufficient budget (for repairs, for planned maintenance, for spares, for infrastructure refurbishment and renovation, etc).

• Essential: Staff are competent (training and experience) and committed (i.e. have correct attitude – perhaps assisted by incentives).

• Essential: The correct infrastructure.

• Essential: Councillors accept sound technical and financial advice, and lead the way.
To sum the whole presentation:

- Delivery results from a **process** - which process has to be understood by and subscribed to by all those with material influence on the process;
- the process can be viewed as a **chain of events** - and this chain is only as strong as its weakest link;
- for the chain to be strengthened, its **weakest link** must be identified, and then the weakness addressed;
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