Water Services Customer Management Model

CITY OF CAPE TOWN
TECHNICAL OPERATIONS CENTRE

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Topics

- Cape Town challenges
- The role of the Cities Enterprise GIS
- Water Services Customer Services Issues
- Pilot project to address spatially-enabled Event Management
  - Purpose & Functions
  - Technology Platform
  - Quantifying Events
  - Communication Channels
  - Communication Options
  - Conceptual Design
  - Business Benefits
- Demo
City of Cape Town
Where are we located
Challenges managing Water in the City of Cape Town

- Cape Town’s Population increase 2.6%/annum and 750 000 households

- 69% of households in the city have piped water in their dwellings

- 15% have piped water on site and 14% of households make use of communal taps

- Not all informal households have been supplied with water due to unsustainable land occupation

- 67% of consumers earn less than R2500/month ($385)
An ISO 9001 Quality Management System has been implemented to improve communication, revenue income & management.

The water demand of the city is approximately 850Ml/day.

- The City makes use of 5 large storage dams total capacity 780million m³ as well as a number of smaller dams.

- The water supply and waste infrastructure includes 33 Treatment plants, 131 Reservoirs, 690 Pump stations, 17 600km (11000 miles) of pipelines & a replacement value of over R12 billion ($1.9 billion).

- The strategy follow all possible water demand measures reduce usage, eliminate wastage, exploring alternative sources of additional supply.

- An ISO 9001 Quality Management System has been implemented to improve communication, revenue income & management.
Challenges

• Future water supply capacity - implementation of the Berg River dam, approximately 50km or 30 miles from Cape Town) in 2006/07

• Master planning - new infrastructure R2,8 billion ($0.44 billion) will be required within the next 10-12 years
How do we provide efficient service delivery through Operations
Meeting Customer Needs Through Identifying Strategic Leverage Areas

- Reliable Service
- Timeous Response
- Value for Money
- Quality Service

- Affordable, reliable water services
  - Potable water on tap
  - Wastewater safely away

Customer Satisfaction
Response to Customer Service Issues

Customer Surveys (2005 Survey Key Points)

- 83% satisfied with provision of municipal services
- 76% satisfied with maintenance of wastewater system
- 94% satisfied with provision of drinking water
- 38% received follow up to account queries
- 39% changed behaviour to conserve water
COMPLAINTS RECEIVED
Oct 2004 – Dec 2005

Months

Restrictions
Water
Sewer
Other
Event Management System

Pilot project

To evaluate technology and interfacing options
Location of the Technical Operations Centre (TOC)

Voortrekker Road, Bellville
Summary of Tech Ops Control (TOC) Roles

1. Interface with Customers in partnership with the Corporate Call Centre.
2. Events management and interface with Operational Staff
3. Initiating operational responses including dispatching of notifications.
4. Events tracking and logging.
5. Co-ordination of Water and Wastewater emergencies
6. Provide support to operational environment. (GIS, Communications, SAP etc)
7. Monitoring of strategic leverage areas.
8. Completion of the SAP business closure process relative to each event.
9. Provide Management Information to Decision Makers
10. Water Services asset care and analysis.
11. Water reticulation distribution control
Role of Enterprise GIS in Event Management

- The City of Cape Town has a mature GIS – one of the best in Southern Africa
- Next process in evolution of spatially-enabled information systems
- System utilises all the City's current systems and technologies
- One of the 1st Business Operational Systems integrating with SAP, Enterprise GIS, Operational GIS and Work Flow
- System is web-based, allowing deployment at any site, but still ensuring a Centralised approach
- Can therefore take advantage of leading edge technology, wireless communications, Server GIS etc
Primary focus of Event Management System

- To enhance the way the City does business from an efficiency point of view
- System uses position to record any event happening in the City
- Allows a drilling down capability to easily determine impacts to events at those positions or in the area and quickly assess the situation
- Using position the system can then identify assets the City has at that location and inform work crews what will be required to respond to that event
- Work flow allows the City to define and manage their standard operating procedures
- Work flows determines the systems automated response to the event and can escalate the event into an incident requiring a response
- Because Events are spatially positioned, Engineers can more easily visually interpret trends and patterns and become proactive in the City relative to infrastructure management
Water Services Events

- Public complaints (water bursts, sewer blockages, etc)
- Reservoir level monitoring
- Pump Station overflow monitoring (Water & sewer)
- Interface with other Directorates (eg fixing burst in road, new water main in road etc.)
- Vehicle tracking
- Internal fault notification
- Work order processing and progress monitoring
- Queries from field operations
- Field data acquisition
Communication Channels

- Voice (telephone)
- SCADA (remote measuring devices)
- Email
- GSM (SMS,GPRS,G3)
- Trunking Radio
- Tcp/IP
Communication Options

- Wide Area Network (WAN)
- Local Area Network (LAN)
- Wireless Options
  - GSM (SMS, GPRS, G3)
  - Radio
  - Wi-Fi
  - Bluetooth
Business Benefits

The TOC will:

- Consolidate processing of all events (e.g. faults, complaints) utilising SAP
- Enforce standardisation (single point of entry into operations)
- Facilitate transformation (move away from ineffective legacy systems)
- Migrate from individual knowledge-based operations to institutional knowledge-based operations (i.e. move away from dependency on individuals and facilitates knowledge sharing)
- Protect and enhance the Metropolitan knowledge-base
- Improve response and service delivery
Business Benefits (2)

- Reduce maintenance costs
- Improves problem analysis and solving
- Improve the utilisation and deployment of specialised maintenance services
- Reduce maintenance bottlenecks
- Improve emergency response capabilities
- Use computer technology to enforce standards and implement effective standard operating procedures managed by the RDBMS
Event Management System Demo
OPERATING UNIT

GPRS, WiFi, WiMax
3G, Bluetooth, Tetra

COLLABORATOR
MOTOROLA RADIO

334:397: Sewer-Drain lid stolen (CAPE TOWN, DURBANVILLE, OXFORD STREET, 34)

“Accept”

“On Site”

“Completed”
Conclusion

Let us work together for a better city