WELCOME TO

GDS2040 OUTREACH PROGRAMME

WEEK 8

SMART CITY
The “Smart Utility” concept is the cornerstone to deliver a “Smart City”

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Accenture South Africa (Pty) Ltd
Contents

From GDS 2040 to Smart City

A Case for Smart Cities

Smart Utility Framework

1st Phase Foundation

2nd Phase Operational Excellence

Recommended Next Steps
The GDS 2040 is a transformational journey that the City of Johannesburg is embarking on to create a **Smart City** in which the Citizens, and Businesses of Johannesburg can sustainably live, work and interact.

**GDS 2040 Focus Areas**

- **Smart City**
- **Liveable Cities**
- **Health and Poverty**
- **Smart Mobility**
- **Smart Environment**
- **Resource Sustainability**
- **Economic Growth**
- **Community Safety**
- **Enabled by ICT**
Contents

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1st Phase Foundation

2nd Phase Operational Excellence

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Smart Cities a global trend and a call for urgent action as well as opportunities for a new approach

**POPULATION: Urbanisation is straining infrastructure**

- In 2008, for the first time, the urban population equalled the rural population of the world.
- By 2050 the urban population is estimated to double to 6.4 billion. Population of Jhb estimated to double to 8 million by 2040.

**ENVIRONMENT: Resource constraints demand efficiency**

- Despite only occupying 2% of land, cities account for 80% of GHG emissions and 75% of energy consumption in the world.
- 66.7% of Jhb’s GHGs comes from electricity.

**SOCIO-ECONOMIC: A war on talent is set to continue**

- Human migration has increased drastically in high income countries.
- As the workforce becomes more globally mobile, cities are increasingly competing to attract and retain talent.

**TECHNOLOGY: Proliferation of data and sensing**

- People as increasingly acting like sensors, providing real-time information on the environment around them through their mobile phones.
- Twitter, a micro-blogging service, has 160 m users who send out nearly 100m tweets a day.
The “Smart Utility” concept is the cornerstone to deliver a “Smart City”

Smart Utility Journey towards Smart City realization

- **1st Phase – Foundation**
  - Manage Regulatory Mandates
  - Manage Stakeholder Interface
  - Manage Social Responsibility
  - Manage Brand Positioning

- **2nd Phase – Operational Excellence**
  - Manage Customer Excellence
  - Manage Revenue Excellence
  - Manage Cost to Serve
  - Manage Demand Side Programs

- **3rd Phase – Value Added Services**
  - Manage Grid Reliability
  - Manage Plug-in Hybrid Electric Vehicle
  - Manage Renewable Resources Integration
  - Manage Internet Services offering
The Key Issues facing City Leaders are around 3 key areas:

**Vision**
- Defining how will life within the city be different

**Strategy**
- Developing a strategy for sustainable development

**Lifestyle Narrative**
- Communicating the vision to citizens

**Operating Model & Governance**
- Defining the decision-making structure, roles and responsibilities
- Identifying city indicators to quantify the improvements

**Performance Management**
- Identifying what to measure for performance?

**Business Models**
- Ensuring the economic sustainability of the initiative

**Technology & Infrastructure**
- Defining the digital needs of the city to enable new services

**Intelligent Infrastructure**
- Smart Mobility, Smart Logistics, Smart Buildings, Smart Comms

**Technology Business Case**
- How do I ensure that the choices I make allow me to innovate?

**Smart City Business Case**
- How do I future-proof my technology choices?

**How do I get started – what does my Smart Grid Journey look like?**

**How can I ensure measurable output on service delivery?**

**How do I grow my African City in a sustainable way?**

**How do I engage my citizens to get their buy-in and feedback?**

**How do I energize the talent I have to the same Change Programme?**
Contents

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  - 1st Phase Foundation
  - 2nd Phase Operational Excellence
- Recommended Next Steps
First, a few electricity industry definitions for context...

High Performance is the characteristic of a Smart Utility…

Integrated High Performance Utility Model
First, a few electricity industry definitions for context...

**Smart Meter**
Records consumption of electric energy in intervals of an hour or less. Communicates that information at least daily back to the utility for monitoring and billing purposes.

Smart meters enable two-way communication between the meter and the central system. Unlike home energy monitors, smart meters can gather data for remote reporting.

**Smart Grid**
Electricity networks that can intelligently integrate the behavior and actions of all users connected to it — generators, consumers, and those that do both in order to efficiently deliver sustainable, economic, and secure electricity supplies.
The Grid has remained largely the same in the past 100 years…

Today’s utility looks at data in a silo manner…
Increasing data loads & new devices coupled with new usage require advanced capabilities to ensure valuable insights are harnessed...

...increased data loads means that technology alone is not the answer...
Smart Utilities integrate, manage, analyze, and visualises data across the supply chain for intelligent decision making.

...but coupled with advanced capabilities towards a vision of transforming into tomorrow’s Smart Utility.
City of Johannesburg needs to embark on a Smart Utility Journey to deliver new & enhanced capabilities, increasing the levels of mastery for a Smart City.
Increased levels of mastery coupled with technology provides for enhanced analytics & business intelligence across all levels of the supply chain.
The road to a Smart Utility requires mastery of the 1st Phase – Foundation processes

1. **Manage Regulatory Mandates**
   - Process for developing regulatory strategy
   - Comprehensive communications plan
   - Defining a response process to data requests
   - Defining a system & strategy for regulatory risks & control management
   - Management of regulatory interfaces
   - Develop & maintain regulator relationships.

2. **Manage Stakeholder Interface**
   - Identification of relevant stakeholders
   - Understanding stakeholder level of influence, & appropriate engagement required
   - Understanding impact to stakeholders
   - Assessment of communication channels & strategies for each stakeholder
   - Develop & execute communication plans
   - Prepare submissions to regulator

3. **Manage Social Responsibility**
   - Brand Promise
   - Role of Brand
   - Brand Stretch Opportunities
   - Brand Measurements and Evaluation
   - Customer Loyalty Measurement

4. **Manage Brand Positioning**
   - Develop programs & campaigns that align with the overall customer & brand strategy
   - Report & track impact, benefit & performance
   - Communication of programs (external/internal)
   - Community support initiatives
   - Analysis of price increases on vulnerable customer segments (e.g. low income/elderly)

**1st Phase - Foundation**
## 1st Phase – Foundation
From Basic to Leading Practice

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Contents

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1st Phase Foundation

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Recommended Next Steps
The road to a Smart Utility requires mastery of the 2nd Phase – Operational Excellence processes

- The utility aims to provide all customers with the best experience across all interaction points.
- As a truly customer-centric organization, the utility understands the needs & preferences of its customers across different segments.
- Operations are aligned to a well-defined customer experience.

- The utility is focused on minimizing costs associated with running the operation.
- Organized around operational efficiency, with focus on process excellence, standardization, automation & system optimization.
- Continuous improvement is part of the cultural mindset of the organization.

- The utility is focused on maximizing revenue across the customer value chain, & addresses sources of revenue loss from customer acquisition to the collections recovery process.
- Additional revenue is gained by optimizing consumer uptake of non-commodity products & services.

- Focus on energy efficiency, conservation & operational optimisation, achieved through flexibility for its customers in terms of product & service differentiation as well as demand-response & demand management programs.
- There is a high level of demand-management based, two-way interaction between the utility & customers. The utility runs Smart Meter enabled operations to support its focus on demand management and operational efficiency.
### 2nd Phase – Operational Excellence
From Basic to Leading Practice

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<th>Manage Customer Excellence</th>
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<th>Manage Revenue Excellence (Usage)</th>
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## 2nd Phase – Operational Excellence
From Basic to Leading Practice ('cont)

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<td>Manage Revenue Excellence (Billing-to-Collections)</td>
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- **Basic**: Bill does not include any energy efficiency information or data for the customer. Payments are uploaded and credited to a customer’s account quickly. Customers are offered multiple payment options, methods and channels, including through 3rd party consolidated bill providers.

- **Threshold**: Bill includes basic information on the reminder channel, delivery method and preferred format. Payments are uploaded and credited to a customer’s account automatically and efficiently. Pre-paid meter installation with reliable and cost-effective 24x7 payment options to customer. Customers are offered multiple and flexible payment options, methods and payment plans/bundles.

- **Above Average**: Bill includes comprehensive and practical energy saving tools and tips on the environmental impact of customer’s energy usage. Payments are uploaded and credited to a customer’s account automatically and efficiently. Customers are offered multiple payment options, methods and channels, including through 3rd party consolidated bill providers.

- **Leading**: All payments are automatically uploaded and credited to a customer’s account quickly. Customers are restricted in terms of payment method, frequency and options. Payments are uploaded and credited to a customer’s account quickly. Customers are offered multiple payment options, methods and channels, including through 3rd party consolidated bill providers.
### 2nd Phase – Operational Excellence
From Basic to Leading Practice ('cont)

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The City of Johannesburg needs to transform into a Smart Utility to meet the future needs to customers, and regulators alike.
Assessing the City of Johannesburg against the strategic imperatives will facilitate the roadmap to deliver new and enhanced capabilities.
The City of Johannesburg must establish a Smart Utility Roadmap to support GDS 2040...

**Obstacles**

- Prioritization of initiatives that support GDS 2040
- Complexity to define priorities for Smart Grid strategy
- Low funding to drive operational excellence initiatives
- Technological Complexity

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**Smart City**

- Implement Smart Utility Value added services
- Operational Excellence benefits achieved
- Roll-out Operational Excellence Benefits
- Design Smart Utility Business – Priorities aligned to GDS 2040
- Assess current position on the Smart Utility Framework
- Embrace both traditional and new Smart Utility channels

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**Transformation Timeline aligned to GDS 2040**