The Changing Utilities Paradigm – Powering the rapidly growing African urban context

Bastian Fischer, Oracle Utilities Global Business Unit EMEA Vice President and General Manager

Tuesday, 15th March 2011, African Utility Week, Cape Town
Safe Harbor

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Utilities in a transforming environment ... Toward operational excellence
The Smart Grid Opportunity …
Enabler of the Real-Time Water & Energy Supply Chain
A Closer Look…

Maintaining Safe, Secure, Reliable Supply

Protecting today’s resources for the next generation

- Moving to distributed generation and micro grids while satisfying rising demand requires new systems and process to ensure supply is safe and secure
- Incorporation of intermittent power sources will need more accurate forecasting, more robust sensing equipment and more real time monitoring
- Management of smart equipment requires new processes to ensure accuracy and reliability in the field with the need to move towards distributed system management
A Closer Look…

Ageing Infrastructure and Changing / Ageing Workforce

Optimizing the risk and return of your assets

- The balancing of costs and reliability require new risk profiles to be managed for all assets in the field to ensure minimal disruption to service.
- 40-50% of the utility workforce is eligible for retirement in the next 5 years so technology must be used to automate previous manual processes.
- Being able to schedule resources to the right place at the right time with the right skills and equipment will become key to managing the new network.
From Smart Meters to Smart Grids:
A Utility Vision to Connect Customers to Electricity via an Information-Rich Network

New Sensors / Distributed Computing on Transmission and Distribution Lines alert operators, fix problems, integrate large-scale renewables generation

Smart Meters and Home Networks help customers use energy wisely, mitigate peak demand, integrate local renewables

Generation  Transmission  Distribution  Consumers
A Closer Look…

Meeting the Changing Customer Expectations

Interacting with consumers in new ways

- The engagement model for consumer is proactive enabling them to make decisions about energy and water usage through a variety of channels
- The need for more product choice and bundling capability, engaging the customer in the value chain for programs such as green energy or demand side management
- The need to have efficient and cost effective customer care processes while dealing with a change to real time information and increased options
What Consumers Want
Oracle study indicates…

95% - detailed information on energy use

76% - renewable energy technologies for home

only 14% of Americans and 16% of utility managers gave utility supplier an “A”
Efficiency and Impact of Energy Awareness

with information:
13% average reduction

with smart thermostats:
23% average reduction

A Closer Look…

Measuring – Contextual Awareness – Taking Action

- How do you build applications and give customers access for a future that is yet to be defined?

- How do you manage the 600x increase in data, while minimizing the duplication across the organization, ensure all functions have the data they need in a timely manner?

- How do you manage the new smart devices to ensure security and timelines of updates, with new applications and analytics requirements?
SmartUtility Process Map
Start with the end in mind …

Premises
- Micro Generation
- VDUs
- Home Appliances
- Distributed Generation
- EV’s
- Meters
- Communication

Field Work
- Mobile Workforce
- Real Time Scheduler
- Work & Asset Management
- GIS
- Transport Management

Networks
- Automation
- SCADA
- EV Charging Infrastructure
- Distribution Management
- Outage Management
- VDUs

Markets
- Automation
- SCADA
- EV Charging Infrastructure
- Distribution Management
- Outage Management
- VDUs

Customers
- Self-Service
- Load Analysis
- Load Profile & Settlement
- Demand response
- Transactions
- Forecasting
- Portfolio Management
- Meter Data Management
- Customer Care & Billing
- Quotations Management
- Rate Design
- Complex Billing

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Oracle Utilities Application Platform
Leveraging proven best practices

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- Micro Generation
- Home Appliances
- Distributed Generation
- Meters
- VDUs
- EV’s
- Communication

Field Work
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- Real Time Scheduler
- Work & Asset Management
- Transport Management
- GIS
- SCADA
- Distribution Management
- Outage Management
- HAN - Gateways
- EV's
- EV Charging Infrastructure

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- Smart Grid Gateway
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Customers
More Value, Less Complexity

More Choice, Less Risk

More Flexibility, Less Cost

Oracle’s Utility Solution Paradigm
Smart Grid Gateway: the link between the mission critical systems and the ‘equipment’ that powers them

- provides a timely flow of usage data and status and control messages.
- orchestrates events like special reads and disconnects,
- detects potential power quality problems and meter tampering.
- coordinates work across every type and brand of meter
- utilizes all types of meter communications infrastructures
Architecture for the Transformational Utility

Enabling new consumer models with Self Service and BI...

Interoperable applications on a smart platform...

...leveraging open standards technology for integration...

...running on the world’s best hardware

Utility Customer Management Portals and Apps

Spatial and Utilities Analytics: Powered by OBIEE

Customer

Meter

Grid

Utilities Integration Platform: Powered by Fusion Middleware

Oracle Utilities “Smart Grid” Appliance: Powered by Exadata
So where are we today …

Enabling new consumer models with Self Service and BI…

Utility Customer Management Portals and Apps

Spatial and Utilities Analytics: Powered by OBIEE

Industry recognized suite on a common platform…

…leveraging open standards technology for integration…

Utilities Integration Platform: Powered by Fusion Middleware

…running on the world’s best hardware

Oracle Utilities “Smart Grid” Appliance: Powered by Exadata
... and tomorrow

Enabling new consumer models with Self Service and BI...

Interoperable applications on a smart platform...

...leveraging open standards technology for integration...

...running on the world's best hardware

Utility Customer Management Portals and Apps: Powered By Web Center

Spatial and Utilities Analytics: Powered by OBIEE

Smart Grid Gateway

Utilities Integration Platform: Powered by Fusion Middleware

Oracle Utilities “Smart Grid” Appliance: Powered by Exadata

Oracle Utilities Cyber Security Platform
Leading Enterprise Software Vendor
- #1 in CRM, HCM, EPM, Middleware, and more
- Most scalable, reliable, secure infrastructure
- Most complete range of on-demand and on-premise deployment options

Built-In Utilities Capabilities
- Interval based pricing (real time, TOI, CPP, event)
- Industry Standard VEE
- Integration with smart devices
- Self Healing Grid
- Field workforce optimization

Largest Software Assistance Team
- 64,500 development, support, and services professionals
- 145 countries
Conclusion: Smart Grids and Smart Metering
How do we get there...

• **Smart is not about (meter) technology…**
  – …it is about business transformation

• **Transformation is needed?!**
  – as legacy business processes are no longer adapted
  – To **achieve the benefits** from Smart Metering & Smart Grids

• **What is the transformation looking like?**
  – Value driven transformation definition
  – Enabling Architectures and technologies implementation
  – Agile & continuously adaptive Business Focus
Conclusion: Smart Utility Roadmap

Planning & Pilots

- Summary Bills
- Time of Use Pricing
- Automated Meter Reading
- Advanced Metering Infrastructure
- Demand Response
- Critical Peak Pricing
- Smart Meters
- Advanced Distribution Management Systems
- Electricity Storage
- Home Automation Networks
- MicroGrid Balancing
- Real-Time Pricing
- Smart Appliances
- Distributed Generation
- Electric Vehicles
- Federal & State Policy
- Regulatory Approvals

10-years ago | Now | 10-years
Oracle is ready to partner with you on your Transformation Journey.

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Scale

• $24.2B in TTM revenue for Oracle
• #1 in 50 product or industry categories
• 370,000 customers in 145 countries
• 30,000 partners
• $40B on 60+ acquisitions, since 2005
• 106,000 employees
• 10 million developers in Oracle online communities

Innovation and Investment

• 29,000 developers and engineers
• 15,500 customer support specialists, speaking 27 languages
• 20,000 implementation consultants
• 1 million students supported
• 870 independent Oracle user groups with 355,000 members

Revenue represents March 1, 2009 – February 28, 2010
Oracle in the Utilities Industry

Did You Know?

- **Experience:** 30 years of Technology, Innovation and Growth

- **Customer Base:** Best Solutions Running at 2,600+ Electric, Gas, Water Utilities Worldwide

- **Dedicated to the Industry:** Oracle Utilities Global Business Unit with 1,000+ Worldwide

- **20 of the Top 20 Utilities:** Get Results with Oracle Solutions

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Dedicated Utilities Team
• 1,500+ employees focused solely on utilities
• Define, develop, and offer mission-critical applications specifically for utilities
• Global organization and reach

Industry Leading Utilities Capabilities
• Smart grid software
• Customer care and billing
• Meter data management
• Mobile workforce management
• Network management and load analysis
• Work and asset management
• Self-service billing, payment, and support

Leveraging the Capabilities of the #1 Enterprise Software Vendor
• ERP, CRM, HR and more
• Most scalable, reliable, secure infrastructure
• Most complete range of on-demand and on-premise deployment options
# Oracle for Utilities Solution Footprint

## Oracle Utilities

### Infrastructure
- Middleware
  - Integration, Business Process Design, Orchestration and Monitoring
- Technology
  - Spatial, Database

### Business Intelligence
- Financial
- Operational
- Transactional

### Corporate Administration
- Financials
- Procurement
- Facilities
- Human Resources
- Supply Chain
- …More

### Business Operations
- Metering
- Field Service
- Assets & Work
- Projects
- Networks
- Supply

### Customers
- Customer Relations
- Billing

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Leading Enterprise Software Vendor
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Built-In Utilities Capabilities
- Interval based pricing (real time, TOI, CPP, event)
- Industry Standard VEE
- Integration with smart devices
- Self Healing Grid
- Field workforce optimization

Largest Software Assistance Team
- 64,500 development, support, and services professionals
- 145 countries
Utility Partner Eco System
People: Oracle’s Ecosystem Creates Advantage

- 285,000 database customers
- 90,000 middleware customers
- 1,300 participants in early customer adoption programs
- 15,500 customer support specialists
- 950 customers participating in advisory boards
- 29,000 developers and engineers
- 500 Industry & Product strategy council members
- 20,000 implementation consultants
- 870 user groups
- 30,000 partners
- 10 million developers in Oracle online communities
- 65,000 applications customers
- 370,000 Customers Benefiting from Shared Innovation
- 285,000 database customers
- 90,000 middleware customers
- 1,300 participants in early customer adoption programs
- 15,500 customer support specialists
- 950 customers participating in advisory boards
- 29,000 developers and engineers
- 500 Industry & Product strategy council members
- 20,000 implementation consultants
- 870 user groups
- 30,000 partners
- 10 million developers in Oracle online communities
Client Proof Points
Some of the largest Water Utilities
What Veolia Water’s Moalajah is saying:

“The customer base in Ajman is growing incredibly quickly as more and more housing developments are constructed. To be able to cope with thousands of new customers coming on board, we needed a solution that could offer genuine flexibility and scalability. Oracle Utilities Customer Care and Billing was quick to implement. It has transformed the way we serve our customers.”

Jacob Illeri
CEO
Enabling customer self-service and conserving water resources are key priorities in our business. We selected this technology because it offered the flexibility, scalability and service our company requires to effectively meet the demands of our customers while also deterring water waste."

Alisa Mann
Customer Services Manager
“At the Abu Dhabi Water and Electricity Authority, we consistently strive to reach new levels of service and efficiency to support our customers and capitalize on new opportunities rapidly. Oracle offers us the flexibility to access a single customer view and use that information to accelerate our service delivery and billing processes. Even more importantly, Oracle provides a scalable foundation for us to fully automate our metering and billing operations.”

*Saeed Nassouri,*
*Project Manager*
What Hillsborough County is saying:

"We want to offer new programs and services to our customers. The new system will give us the flexibility to respond to customers' changing needs. Our customer base has nearly doubled since 1998. The Oracle Utilities system can easily handle that. It will also provide fast and comprehensive customer information to our call centers, where customer service representatives need to respond to a call volume that has increased more than 20 percent as of last year."

Becky Garland
Group Manager, Service Management & Accounting
Ameren Corporation Automates Data Profiling for More than 2.5 Million Meters

COMPANY OVERVIEW
• One of the largest investor-owned electric and gas utilities in the United States
• Provides energy services to 2.4 million electric and nearly 1 million natural gas customers
• Industry: Utilities
• Employees: 9,000
• Revenue: US$7.8 billion

CHALLENGES/OPPORTUNITIES
• Aggregate and profile customer-level meter data quickly to facilitate accurate analysis of consumption and enhance agility in responding to changes in demand
• Deploy a single, integrated system capable of forecasting, profiling, and aggregating meter reads within a short amount of time
• Provide the ability to determine an accurate and fair allocation of Unaccounted For Energy (UFE) within Ameren territory
• Ensure the ability to customize the solution independently today and in the future

SOLUTIONS
• Oracle Utilities Billing Component
• Oracle Utilities Load Profiling and Settlement
• Oracle Utilities Meter Data Management

CUSTOMER PERSPECTIVE
“Oracle Utilities solutions were our number one choice because they enable rapid deployment and have the flexibility we need to make rapid changes to the data model.”
Keith Hock, Supervisor, Transmission Services Business Center

RESULTS
• Enabled Ameren to rapidly profile and aggregate data for more than 2.5 million meters
• Enabled the company to perform at least four settlement statements per day and up to 12 prior to weekends and holidays
• Gained the ability to balance the entire territory (an approximately 10,000 Megawatt system) to within 5 Megawatts for every hour
CUSTOMER PERSPECTIVE

“With Oracle Utilities Meter Data Management, we will be able to support one of the largest AMM deployments in European history. The Oracle solution will help us to provide our customers with advanced options including consumption profiles as well as consumption information online - ultimately allowing the consumer to make more informed decisions about their energy use.”

Delio Svaluto Moreolo, Metering Department, Acea Distribuzione S.p.A

RESULTS

• Single Source of truth for metering data – with full auditability of data versions and editions

COMPANY OVERVIEW

• ACEA is the 2nd largest Italian Electricity Distributor. The are the Distribution Concession for 1.5 Million meters in Rome with 8 Millions gas meters.
• Industry, Utilities

CHALLENGES/OPPORTUNITIES

• Monthly readings mandated by Italian law
• TOU
• Real time customer access to their consumption data
• Customer services improvements
• Fraud reduction and Network Management Improvement

SOLUTIONS

• Interfaces to Metering Systems: Dial up C&I meters, AMI meters with interval data, Manually read meters with register reads
• Validation – Edition – Estimation
• Balance Perimeter Calculations
• Calculation of Area Residual Load and Profile per Supplier
• Data Publication to Suppliers
• Interface with billing systems for consumption data and standing data

ITALY’S ACEA DISTRIBUTUZIONE TO POWER AUTOMATIC METER MANAGEMENT PROJECT FOR 1.6 MILLION METERS
Metrix Improves Service to Retailers with Automated Meter Management System

COMPANY OVERVIEW
- Provider of electricity metering and associated services to retailers in Auckland, New Zealand
- Industry: Utilities
- Employees: 100
- Revenue: Not disclosed

CHALLENGES/OPPORTUNITIES
- Deploy a robust meter data management system that supported the rollout of new smart meters
- Adhere to compliance guidelines that establish how metering information from multiple systems is supplied to retailers

SOLUTIONS
- Oracle Utilities Meter Data Management

CUSTOMER PERSPECTIVE
“Oracle Utilities Meter Data Management enables Metrix to provide better quality metering data to our retail customers.”

Emma Collier, Enterprise Manager

RESULTS
- Provided better quality meter data to retailers to improve services and protect revenue
- Gained the ability to obtain meter readings on a daily basis rather than monthly
- Enabled estimates to be provided on a more granular level, which allowed retailers to provide consumers with more accurate bills
- Adhered to compliance guidelines to dictate how metering data is supplied to retail customers
COMPANY OVERVIEW
- California based company founded in 1905, it is one of the largest combination of natural gas and electric utilities in the US
- Industry: Utilities
- Employees: 20,000

CHALLENGES/OPPORTUNITIES
- Provide a multi-step billing solution that integrates with several systems including head-end systems, meter data management systems
- Solution needs to provide critical peak pricing and dynamic pricing- Real –Time pricing
- Solution needs to measure, bill, collect processes to support meter reading, meter data management, rendering of bills, customer records, credit and payment processes
- Solution must provide Contact Center and Front Counter Support to customer transactions such as start/stop and account status
- Solution must provide scheduling and dispatching of customer field orders

SOLUTIONS
- Oracle Utilities Customer Care and Billing

CUSTOMER PERSPECTIVE

RESULTS
- Once an hour relationship with 6 Million customers
- 3.6 Billion electric meter reads/month, plus 150M electric status reports/month
- 150M gas meter reads/month, plus 150M gas status reports/month
- Support 7 years of historical data (3 years on-line, 4 years archived)
- 300x increase in storage
Why Oracle?
The Oracle Difference

Only Oracle…

✓ Offers a comprehensive end-to-end standards-based application suite for Utility IT/OT/CT
✓ Offers stand-alone applications to solve a unique business needs
✓ Provides solutions for Utility Types of various size, in various market segments, worldwide
✓ Provides productized SOA-based integration leveraging an industry leading middleware suite
✓ Provides integrated, scaleable and upgradeable out-of-the-box capabilities for mission critical utility operations
✓ Offers flexible engagement models to help streamline service delivery
✓ Provides a rich set of industry specific analytics
✓ Dedicated team of domain experts and thought leaders
✓ Only complete software solution for the Smart Grid
✓ Our application strategy is complete, open, integrated
## IDC – Energy Insight Evaluation of Utility Footprints

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“The products and companies that Oracle has acquired for its utility business are complementary to each other, are widely used around the world, and are considered top tier for their space. This makes a powerful combination and one that can be hard to beat in the utility marketplace.”
Oracle is committed to partner with you on your Smart Grid Journey.
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