“THE REAL IMPACT OF AI AT UTILITIES” IS IT TIME FOR UTILITIES TO PUT THEIR HEADS IN THE CLOUD & AI?
INTRODUCTIONS

• Obe Everett – Director PMO and Business Systems Support, Louisville Water Company
• Vikram Takru – Founder & CEO, KloudGin
Water Distribution Assets:
- 4,236 miles of water main
- 54,278 valves
- 315,357 services
- 24,481 fire hydrants
- 66 booster pump stations
- 33 tanks
Louisville Water’s footprint includes more than 1,000 square miles in Louisville Metro and surrounding counties. The customer base includes more than one million people.

Rates are **more affordable** here than peer cities.

Louisville Water’s treatment plants are rated as: 2 of the top 16 in North America.

The water has such high quality it’s trademarked as **Louisville pure tap®**.

And, the taste? Louisville pure tap® rates best-in-class in taste competitions.
STANDARDIZE, SIMPLIFY, CONSOLIDATE

• Simplify common business tools for all of our operational areas
• Consolidated Portfolio includes:
  • EBS
  • CCB
  • WAM
  • PeopleSoft
  • OUCSS
  • KloudGin Intelligent Field Service Cloud
  • KloudGin Mobile for WAM 2.0
  • KloudGin for AMI (Neptune)
  • Esri GIS
  • Intoollect
WHY NOW?

• Systems are over 30 years old
• Inflexible
• Paper driven
• Data stale or did not represent activities in the field
• Limited to no mobile integration
• Limited to no support or enhancement opportunities
• Too many handoffs
• Data is growing exponentially
• Constituents (Employees, Consumers) are demanding more
• Pressure to drive lower rates
WHY CLOUD, AI? WHY NOW?

• Software now underpins almost every function in the utility
• Cloud, Mobility, AI, Chat Bots are critical for:
• Streamline operations and boost efficiencies
WHY CLOUD, AI? WHY NOW?

• Improved delivery of products and services
  • To quicker responses to operations
• Increase flexibility of operations
• Lower implementation and maintenance costs
DATA IS NEW GOLD

• Exponential growth of data by utilities
  • > 80% of the data being created is unstructured
  • Example: GPS data every 2 seconds coming in from crews, asset, equipment, sensors, Scada IoT devices all are adding billions of data points

• Utilities of the future can enhance the information embedded in their data to radically transform their business models,
  • how they serve their constituents
  • increase safety and efficiency
  • store all this data in cheap commodity cloud computing power on demand will dramatically alter the way the utilities of the future will run
PHASED APPROACH

LWC is laying foundation for the future in Phases.
EAM & KLOUDGIN GOAL

Life Cycle Asset Management

Operational Excellence
Optimized Reliability
RC
Overall Asset Effectiveness
Equipment Simplification/Standardization
Calculated Life Cycle Cost Analysis
Repair vs. Replace Analysis
OPERATIONAL GOALS AND OBJECTIVES

Managing Crews, Work and Other Resources More Effectively and Efficiently

- Eliminate paper trails and optimize the use of labor and inventory.
- Schedule and assign employees and work orders more effectively, with progress tracking for future benchmarking.
- Automate timekeeping as well as required approvals (Work linked to assets/Life Cycle).
- Prioritize work orders by both system criticality & work order criticality.
- Augment the work order by attaching pictures, operations manuals and/or system schematics.
- Generate Preventative Maintenance (PM) work orders based on schedule or SCADA inputs (equipment run time/pump revolutions), and create reminders or tasks for annual inspections, testing, recertification, calibration, etc.
- Develop reports and work plans tracking labor, equipment, turn around time, as well as flagging items for replacement (Net present value thresholds).
- Actively manage distribution system status through tracking of open and closed valves, main status (in-service/out of service), etc.
GAME CHANGERS...

Life Cycle Asset Cost and Forecasting Depreciation

- Develop true asset life cycle cost to feed capital and operating budgets.
- Benchmark anticipated asset life versus actual life.
- Benchmark effectiveness of PM programs (both existing programs and those that will be developed with WAM).
- Enhance financials by forecasting depreciation for future asset replacement and installations by month and year.
- Enhance financials by forecasting retirement cost related to future asset replacements by month and year.

OPERATIONAL GOALS AND OBJECTIVES
GAME CHANGERS...

Develop Indicators for Key Asset Performance to Produce a Programmatic Approach to Repair or Replacement

- Utilize asset hierarchy to manage both assets and “systems” of assets.
- Develop predictive indicators for replacement needs.
- Reliably forecast maintenance cost.
- Compare asset cost (replacement) versus maintenance cost (Net Present Value Analysis).
- Enhance energy management – track costs tied to assets (usage/cost of utilities, fuel, etc. and ability to review by facility, peak demand, location).

DOING THE RIGHT THING... IN THE RIGHT PLACE... AT THE RIGHT TIME
21st Century Time Keeping
WHERE WE ARE GOING
IMPLEMENTATION TIMELINE

WAM & KloudGin Phase 1 Plant & Facilities Kickoff

October - Phase 1 Plant & Facilities Go Live

January - WAM Phase 2 Start, KloudGin FSM GoLive

Phase 3 planning and Budgeting

May - WAM & KloudGin Phase 2 Go-Live
WHY KLOUDGIN?

• Proven Solution at the RIGHT Time
• Industry Experience
• Responsive to customer needs
• Reliable, Scalable, Cloud Platform
  • can integrate with existing digital ecosystem
  • allow greater flexibility and streamlined offerings
• Development and Support Excellence
• Modern Architecture
• Out of the Box Integration to Oracle ERP, CC&B, ESRI GIS, WAM 2.0, SSO & more
Introductions

Modern Face of Work, Asset, Inventory, Procurement

Complimentary to your legacy solutions or self-contained to streamline & modernize related business processes

Why KloudGin is the right choice for LWC

Work Management
“Long Cycle”
- Work order management capabilities including job execution, job cost, timecards
- Centralized & Regional dispatching
- Integration with SCADA & Sensors
- Auto Work order creating & auto routing/ dispatch
- Sub-contractor based work execution
- Integration with 3rd party systems like Maximo, WAM, ESRI. Accuweather, WeatherWorks

Service Order Management
“Short Cycle”
- Mobile Work Order/ Case Management
- Auto Scheduling & Optimization
- Big data based Learning & Recommendation engine
- Truck inventory
- Auto Time Clocking
- Knowledge management
- Autopilot Pilot Dispatcher for after hours emergency
- Connected Customer APP
- AI Assistant *
- Integration to Payroll, ESRI, Financials, CC&B, Google, Accuweather, WeatherWorks

Asset Management
“company or customer owned assets”
- Asset Hierarchy
- Bill of Material
- Surveys, Checklists
- Document Control
- Preventive/ Reactive Maintenance
- Fleet & Facilities
- Crew/ Shift Scheduling & Planning
- Work order
- Collaboration & Alerts
- Asset Analytics
- Service Contracts
- Purchasing & Sourcing
- Integration to Financials, Payroll, Accuweather, WeatherWorks, SCADA

Inventory Management
“non-capitalized assets”
- Complete Inventory txns (issues, receipts, adjustments, transfers)
- Replenishment
- Inventory planning & costing (IoT, serial, kitting)
- Project management
- Procurement
- Mobile Inventory APP
- Inventory Analytics

Capabilities needed to get work done!
“Ad-Hoc Work”
- Bar Coding
- Inspections
- Traces
- Outage management
- IoT / SCADA
- GIS

KloudGin
We stand on the brink of a technological revolution that will Fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before.

Professor Klaus Schwab
Founder and Executive Chairman, World Economic Forum
What Utility Customers are Experiencing

Less than 5 seconds to book an appointment?
Any Guesses on appointment duration?
WE ARE LIVING IN A DIFFERENT ERA
How are they doing it?
Connect All. Store Everything.

Scheduling & Route Optimization
Cloud Computing
Native Mobile
AI & ML
NLP
KloudGin delivers an AI-based Intelligent Field Service, Asset, and Inventory Management Cloud solution running on AWS. Through a single application, KloudGin connects your customers, crews, back office, partners, and equipment in real-time, from any device.

"KloudGin SaaS solutions help us to achieve our mission of being the leading provider of water and wastewater services, which is part of our promise of quality, service, and value."

– Michael Luu, Vice President of Customer Service and CIO, Calwater
Single Modern Dispatching: All Work (Short, Long, Outages, Ad-hoc.)
KloudGin Platform & Solutions: Intelligent Utility Cloud

Inventory & Procurement Management
Fleet & Facilities Management
Connected Customer & e-Commerce
Sub-Contractor / Vendor Mgt
Asset Management
Field Service Work & Time Mgt
Backflow Device Management

Declarative
Define Once and Deploy on Multiple Devices

KloudGin Cloud Platform
Single Stack for all Business Processes

Single Face of Work®
Hi admin, I am KloudGinBot. I try to make work fun. Here are some of the things I can help you with:
1. Search any information
2. Open a page
3. Do transactions like Assign Job
4. Email to anybody.
So, how can I be of help?
Future of Work Management: AI/ML based AUTOPILOT Dispatchers
Natural conversations:
Tell me the the order of tasks?
When the asset was last inspected?
Any sensor readings out of range?
Future of Work Management: Conversational AI for Field Crews/Contractors

Show me Asset History

Take picture. AI auto populates meter reading, serial no and more
Future of Work Management: Drones. No-Human Interfaces. 3D-Printers.

- Drones integral part of Asset Management
- Drones will roll w/Trucks
- Pipe-Crawling Drones Are Going Where No Human Can or Wants to
- AI based Image Recognition
- Smart Sensors
Conversational AI-based BI

PLAY Video

https://www.youtube.com/watch?v=pctyHwR5ssQ
Engineered for the digital and spatial world.