Microsoft’s Energy Smart Building Pilot

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Microsoft’s Corporate Campus

- 15M square feet / 118 Buildings
- Largest contiguous corporate campus in the world
- Medium size City
- >30,000 assets maintained
- 100 megawatt demand
- Consume 2 Million kWh/day
- Connected to 2 Million points
Business Drivers

Situation
- Disparate applications & systems
- Lack ability to aggregate and overlay systems
- Labor intensive reporting
- Alarm management deficiencies

Puget Sound Pilot
- Tested 3 Vendor’s **Smart Building** solution, in parallel
- **13 buildings** totaling 2.6M ft²
  - Same area as the **Empire State Building**
- Piloted **SaaS** and on-premise hosting
Pilot Goals

- Identify Equipment Faults
- Correct Business Rule Exceptions

Fault Detection & Diagnosis

- Dashboards / KPIs
- Create Energy Signatures
- Automate Business Reporting

Energy Management

- Prioritize and Monetize Alarms

Alarm Management
Pilot Results

- Payback in less than **18 Months**
- **6-10%** in Energy Savings
- **Replaces** 5-year *manual* retro-commissioning cycle
Capabilities

Pre-Pilot

Energy Management  Alarm Management  Fault Detection Analytics  Visualization

Post Pilot (Today)

Energy Management  Alarm Management  Fault Detection Analytics  Visualization
Pilot Architecture

- Data Server
- Azure Connect
- 3rd PARTY MANAGED DATA
  - PSE Utility Data
  - Weather Data
- MS AZURE CLOUD

- Firewall
- GUI
- Web Based Browser
- Windows Identification Foundation (WIF)
- Authentica
tion Token

- BAS ENVIRONMENT
  - Control Panels
  - Building Systems Server
  - Protocol Conversion
- Electrical Consumption Data
- Systems Operations Data
  - Alerton Control Devices
  - Apogee Control Devices
  - PMCS
  - Lighting Controls

- MS CORPNET
  - FAC01
  - Filtered
  - Recurring Update
  - Build
  - Headcount
  - Hierarchy
  - Publication

- Middleware Server
Smart Building Roadmap

- Finalize Contract
- Campus Deployment
- Condition Based Maintenance Plan
- AIQ Automated Billing
- CMMS Integration
- Smart Grid / MicroGrid

Q3 FY12 – Q3FY12
2-3 Buildings every 16 days

Q4 FY13
Q1 FY14
Beyond

SVC Azure Pilot
Thank you!!

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