How eBay is implementing a “cockpit” view of its data centers

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Conference Theme & Keywords

- Analytics
- Energy Management
- Security
- Regulatory Compliance
- Time Series
- Real-time
- Event Frames
- Digital Transformation
- Open System
- Asset Health
- Integrators
- Quality
- Sensor-based
- Data IoT
- Connectivity
- Community
- High Speed
- Process Scalability
- Partner
- Enterprise Agreement
- Enterprise
- Agreement
- Community
- Reliability
- Operational Efficiency
- Visibility
- Connected Services
- Ecosystem
- Business Impact
- Streaming Data
- Big Data
- Future Data
- PI System
- Millions of Streams
- Visualization
- CBM
About eBay™

We're Creating a Better Form of Commerce
We connect millions of buyers and sellers around the world, empowering people and creating economic opportunity for all.

The number of active eBay buyers worldwide is 170M
The number of live listings on the eBay Marketplace is about 1.1B
In the U.S., a smartphone is purchased on eBay every 5 seconds

eBay Q4'17 Fast Facts
Key Business Challenge: Capacity Forecasting

Direct insight into data center capacities; quick access to the real-time demands, equipment allocations, space reservations, & budget forecasts.

Enabling critical business decisions to be made for managing existing capacities or building out new.

Solution:
Create a “cockpit” view of the data center
Starting Point

• Primary Capacity Management Tool
  • Spreadsheets w/ PI DataLink

• OSIsoft Environment
  • (5) Independent PI Systems
  • 3 Million existing PI Points
  • 1000+ Templates; 70k+ Elements
  • 83K Performance Equations w/ no analytics
  • Mixed standards; No common data structure
  • 100+ monitored devices add/removed each month
Design Criteria

1. **Usability**
   - Trustable Information
   - Accessible to Everyone
   - Intuitive Environment

2. **Scalability**
   - Structured...Everything
   - Extensible & Adaptable model
   - Variation Accommodating

3. **Sustainability**
   - Minimal Input/Maximum Output
   - Data Patterns & Data Protection
   - Deployment Automation
Pathway Forward

1. **Need a Data Center Infrastructure Management (DCIM) tool**
   - Transition away from spreadsheets
   - Create standards practices for capacity management
   - Establish a tool of which could be used across infrastructure domains
   - Enable management of the full equipment life-cycle

2. **Existing investment in OSIsoft must leveraged**
   - Data rich but information poor, restructure required to create value
   - DCIM needed to continually & easily integrate with data
   - At current scale and need to automate integration processes
Restructuring OSIsoft Environment

- Rigid templates & categories; standards driven through inherencies
- Single click for operational config changes (alerting, scan on/off, debug)
- Data health protection through analytic evaluations
- Equipment variance managed through lookups
- Buildout automation via AF SDK & data pipes
Datacenter Clarity LC® for DCIM

- Partnered with MAYA HTT & Siemens
  - Best of Breed DCIM software; nimble development team
  - Built around Product Life-Cycle (PLM) Management system
  - Back-end data store is OSIsoft PI Data Archive / PI Asset Framework
  - UI capable of visualizing & navigate capacities across time
Building “Cockpit” Views

- Datacenter Clarity LC® powered by the PI System to enhance business visibility into the current real-time power, cooling, and environmental data from within the data center.
Footprint & Time Traveling for Forecasting

- Combining PI System real-time allocations /w lifecycle planning for future allocations of the data center capacities allows eBay to raise the accuracy of forecasting so sound business decisions can be made.
Drilldown Dashboards

- Widget-based self-service dashboards for detail data views and dynamic trending
Pivot Table Dashboards

- Bring spreadsheet functionality for end-user experience consistency
Day in the life of forecasting at eBay
Canadian Software company
- Largest simulation co in Canada
- Founded in 1982
- HQ in Montreal, 6 NA Offices
- OSIsoft OEM & SI partner
- Siemens PLM Partner since 1986
- R&D in engineering and sciences
- 29 solution portfolio
- WW and local partners

170+ employees
- 100 Developers
- 35 PhD
- 44 Masters
- 26 Languages

WW Projects
- 1,000,000 cars
- 10,000 aircraft engines
- 1,000+ engineering projects
- 100+ data center sites
- 50+ satellites in orbit
- 1 amazing hockey stick

Offerings
- Software Development
- Machine learning / AI
- IoT & Digital Enterprise
- Engineering Services
- Optimization & Simulation
Datacenter Infrastructure Management (DCIM)

- Operational access
- AI Ready
- Integration of 3rd party systems using open API
- Interaction with different Stakeholders
- Key Performance Indicators
- Alarm management with web client access
- Existing data which will be used to feed DCIM
The OSIsoft PI System is the Real-Time Monitoring Foundation of Datacenter Clarity LC

Automated asset assembly structure synchronization with PI Asset Framework
Real-Time Monitoring & Alarming with up/downstream & 3D contextual information

- Power and energy monitoring
- Storage of historical data
- Alarms and dashboards
- Impact Analysis
The future with ML | Applied AI

Gain business advantages
✓ Optimize your operations (increase efficiency, reduce errors, etc)
✓ Create new revenue streams

Organize your data and reveal hidden value
✓ Automated data clustering/classification
✓ Data anomaly detection/removal
✓ Multi-variate outlier detection
✓ Multi-variate clustering/classification
✓ Real-time pattern recognition

Augment your people’s output
✓ Trained AI able to detect anomalies in real-time
✓ Trained AI to predict future results based on multiple input variables
✓ Trained AI to detect faulty sensors or drifting sensors

Move from Data to Wisdom with Datacenter Clarity LC
Questions

Please wait for the **microphone** before asking your questions

State your name & company

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Thank You

May the Datacenter Clarity LC force be with you…