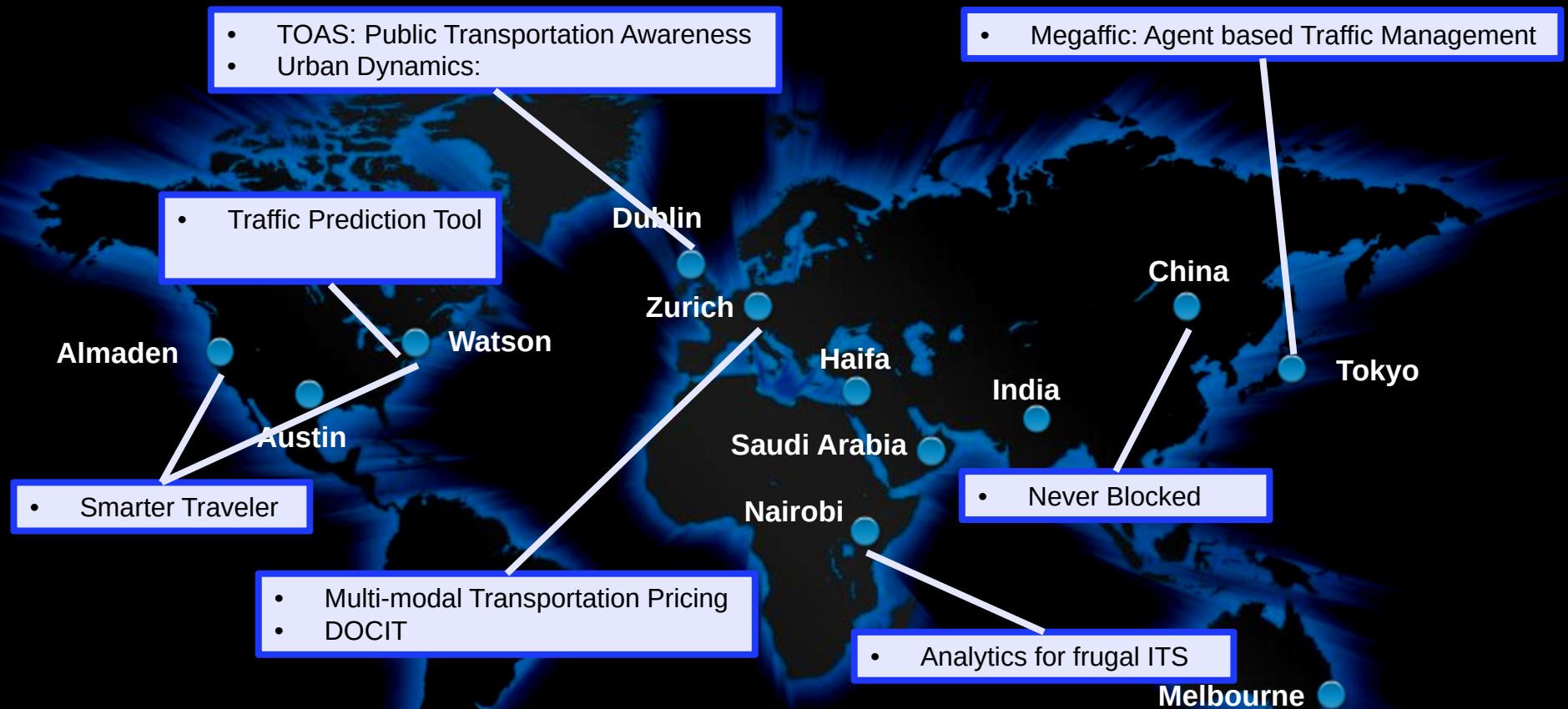


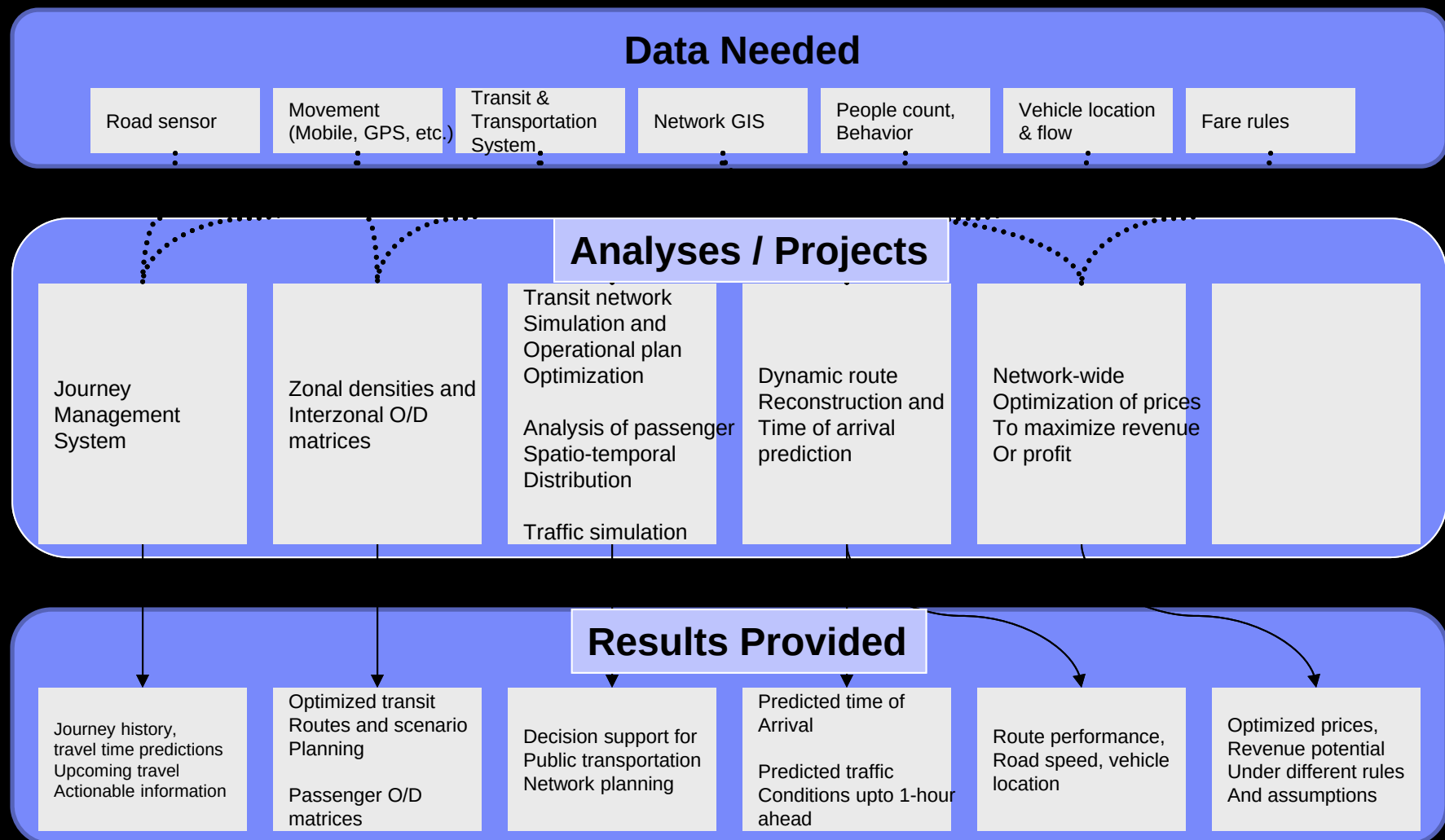
Data Isn't Information and Real-Time Isn't Fast Enough

David E. Pickeral, JD
Transportation Sector Lead
IBM Industry Smarter Solutions Team

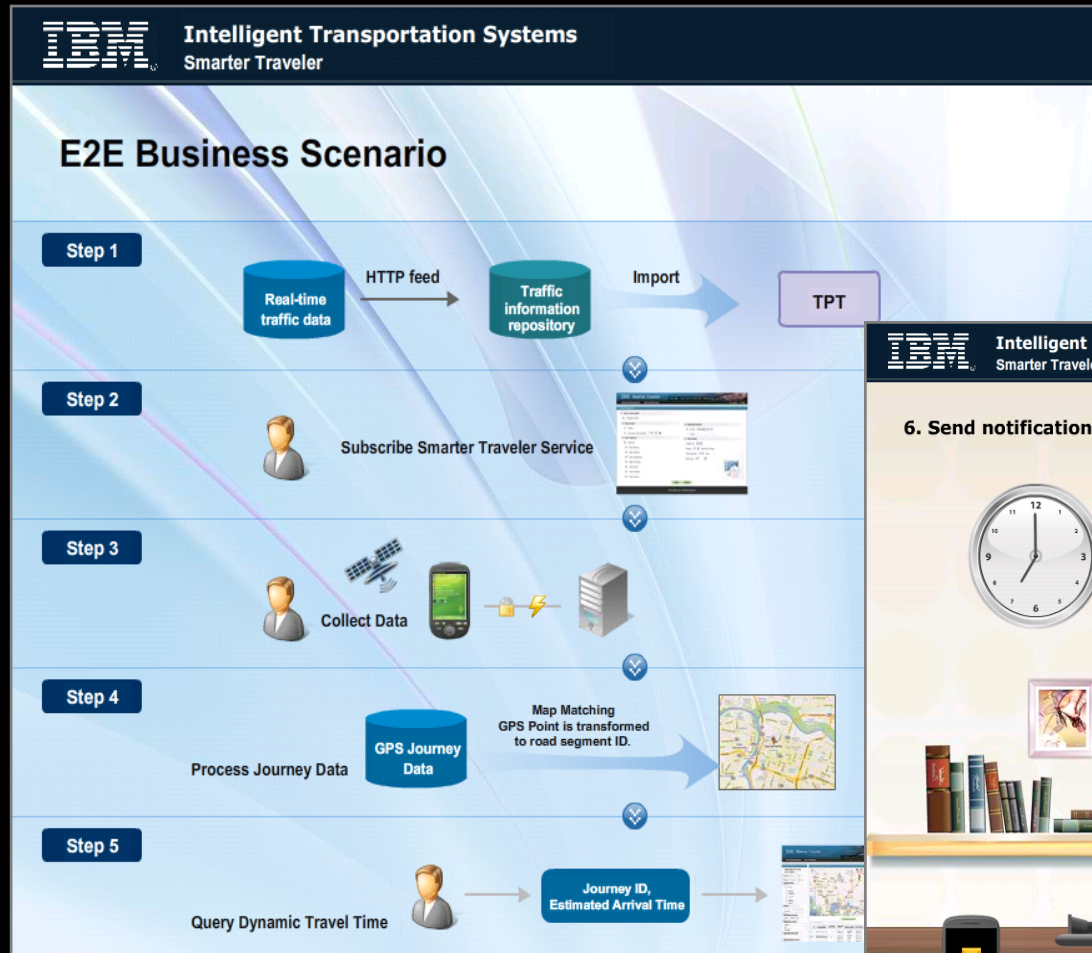




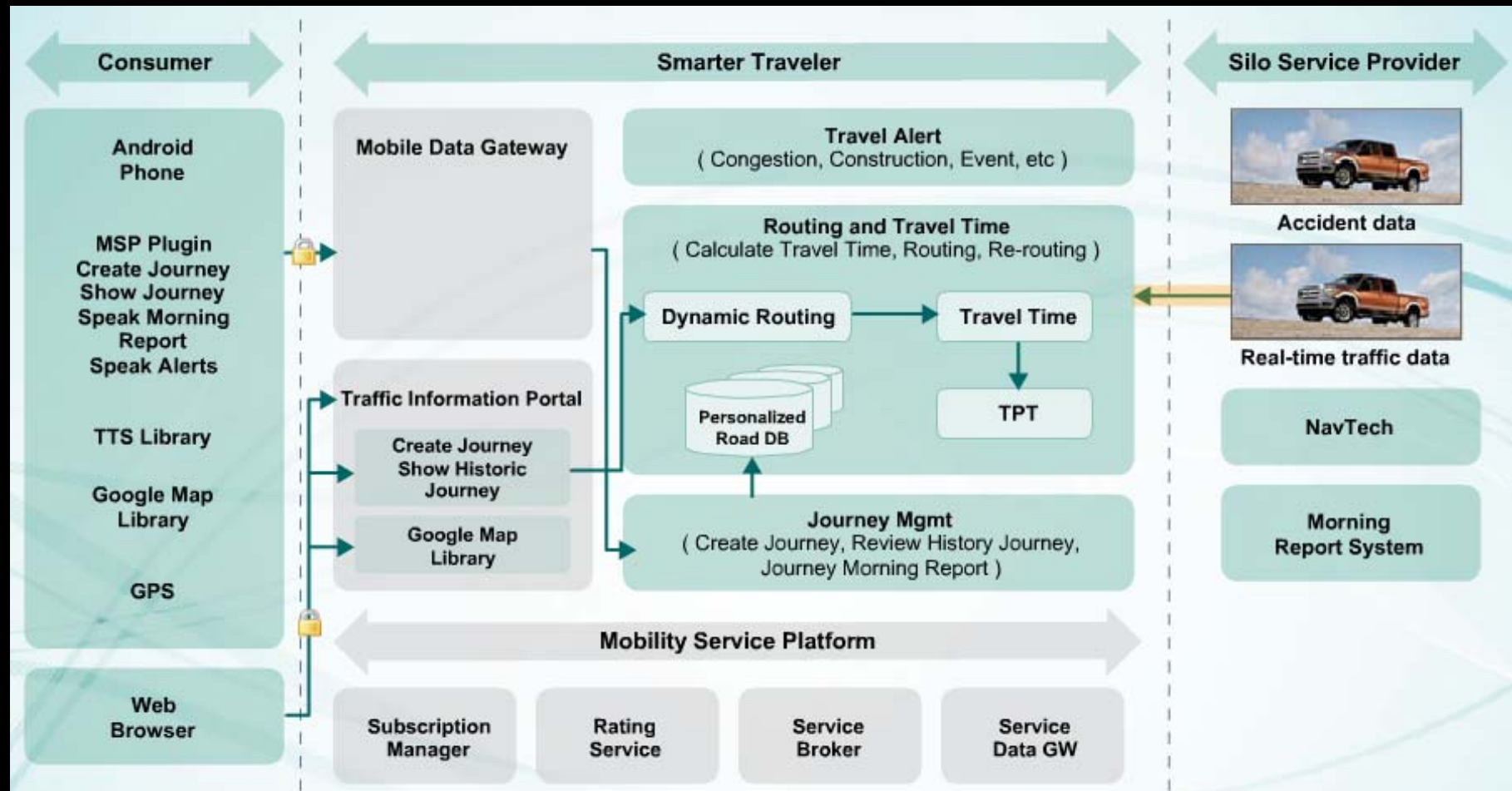
Transportation Management Solutions – Functionality



Smarter Traveler notifies users in case of transportation incidents



Smarter Traveler: Solution Architecture



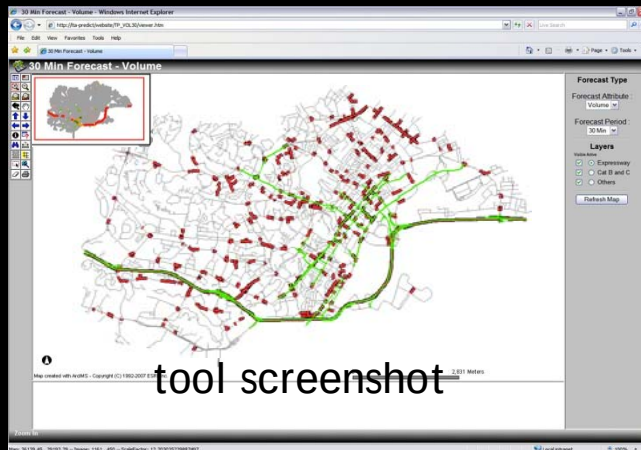
Traffic Prediction Tool (TPT)

► Issue: “real-time” is too late

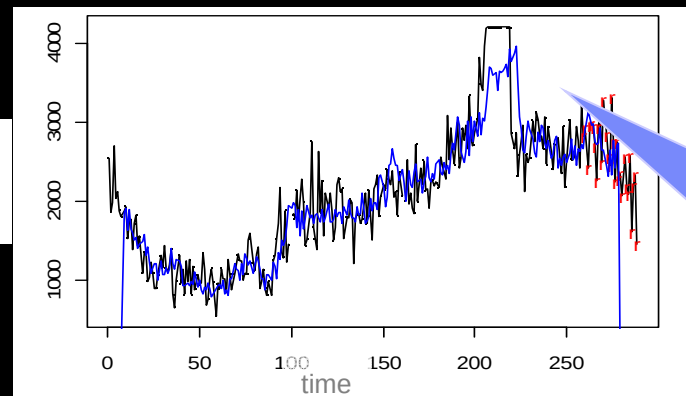
Little automated use is made of the **gigabytes of real-time traffic data** today; often, by the time it is received, it is **no longer representative** of the actual traffic

► IBM Innovation: forecast the future

IBM's TPT provides a layer of **intelligence** by using sensor data in sophisticated algorithms that **create relevant insights** from the raw data



blue = forecast black = actual red = incident



TPT accurately forecasts future traffic conditions, including incidents

Current Focus

Traffic Operations:
Variable Message Sign
setting; traffic signal
timing, ramp metering

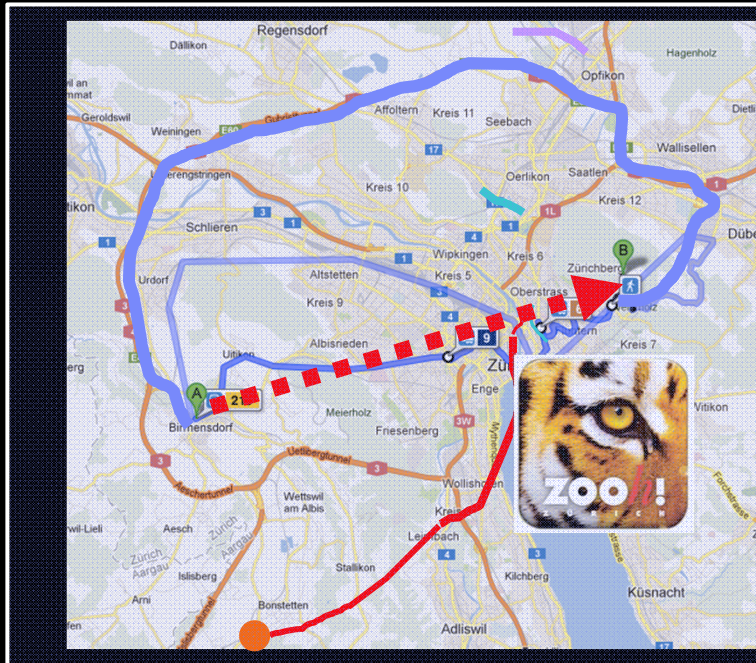
Future Use

Traffic Planning; Dynamic
Road Pricing; congestion
based tariff setting; route
planning & advice

Extension: Data Expansion

(2008 IME) develop algorithm to fill in
gaps of real-time sensor data, resulting
in a complete picture of future traffic
state, network-wide

Dynamic Optimization of Community Intermodal Transportation (DOCIT)



Typical Scenario:

- A family travels from Birmensdorf (ZH) to the Zoo.

Several possibilities with different

- Modes
- Connections
- Transfers

and **uncertainties!**

- Delays
- Lack of parking
- Traffic jams
- ...

Use Case 1 Personal Journey Planning

- Provides API to external applications to plan a journey in a multi-modal network and track trip progress
- Re-plan when User is off-track; Events invalidate plan; Events create better opportunities

Use Case 2 Operator facing optimization

- Derive and communicate to operator performance measures based on *how the system works for a user*
 - Account for uncertainties
 - Performance Metrics: journey times, wait times, missed connections, walk access distances
- Make recommendations on schedule refinements

Analytics Driven Asset Management - ADAM



Insight,
Foresight and Prescriptions

Descriptive, Predictive and
Prescriptive Analytics



- Maintenance Planning
- Maintenance Scheduling
- Replacement Planning
- Condition Assessment
- Failure Cause Analysis
- Failure Prediction
- Usage Analysis
- Customer Analysis

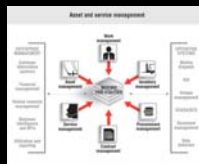
ADAM



Data

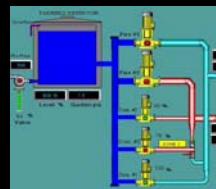
Data → Operational, Failure, Usage, Condition, Customer, Location

Enterprise Asset Management



- Asset Management
- Work Management
- Service Management
- Inventory / Contract
- Procurement Management

Scada, Sensors, Inspection, Metering Systems



EAM / SCADA



Assets

PALM: Planning Analytics for Asset Lifecycle Management



Thank You

depicker@us.ibm.com

www.linkedin.com/in/pickeral