



Analyzing Location for the Most Profitable Supply Chain

Presented by **Ryan Schacht**, Account Executive





Esri

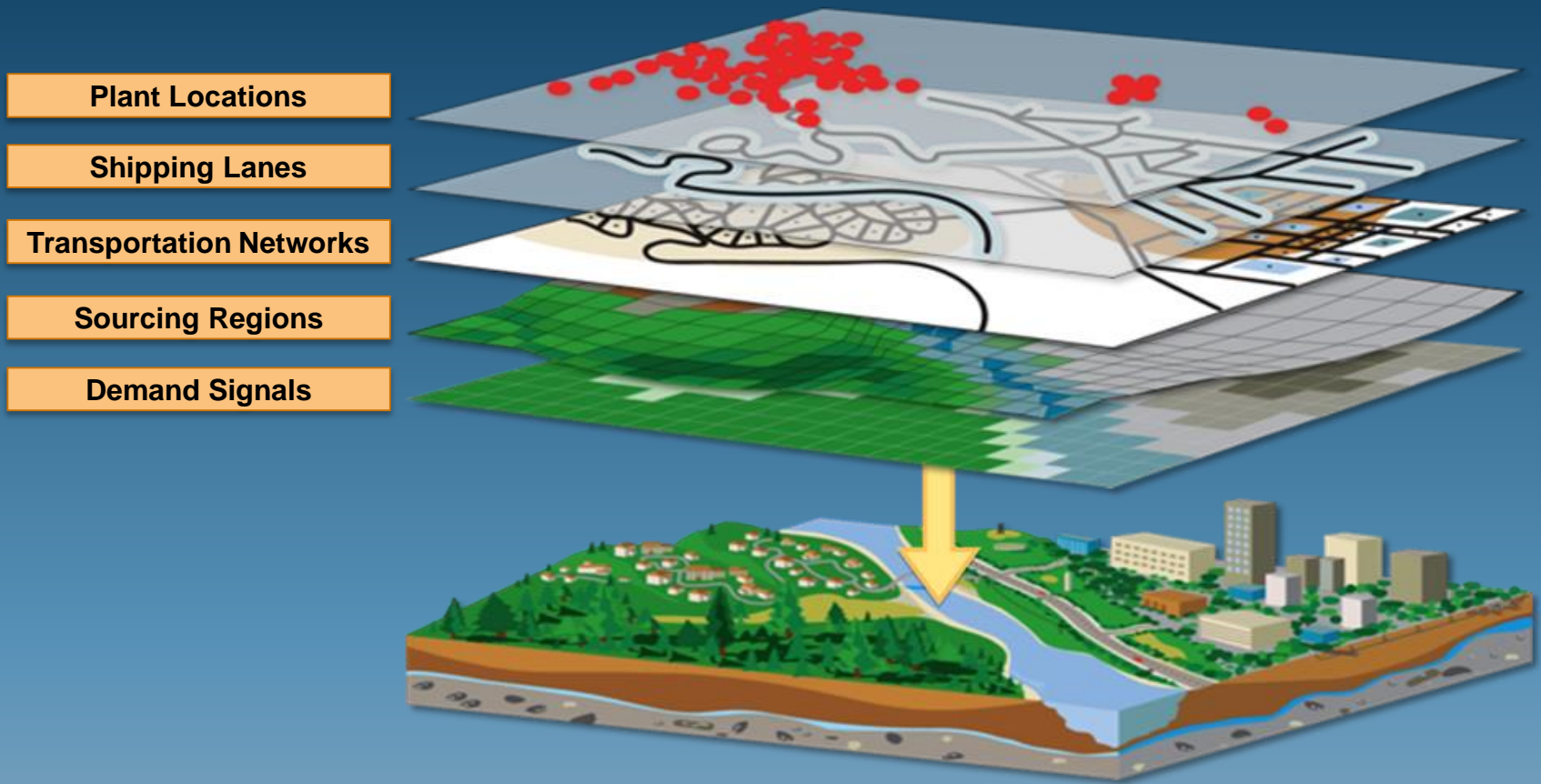
Location Technology

1969

5,000

130 Countries

ArcGIS



Nearly all Business Data has a Geographic Component

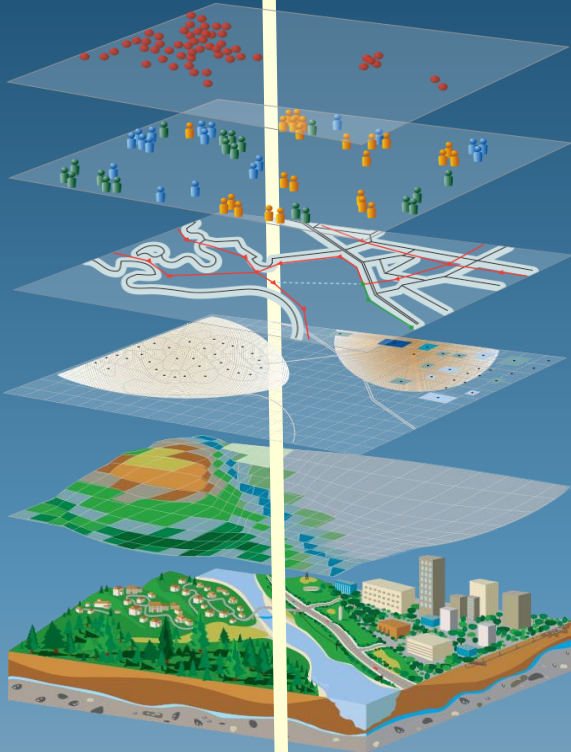
Geography



Data



Spatial Relationships



Sourcing Regions

Plants

Shipping Lanes

Distribution Nodes

Demand

Retail Outlets

Location

Distance

Proximity

Hot Spots

Clusters

Time

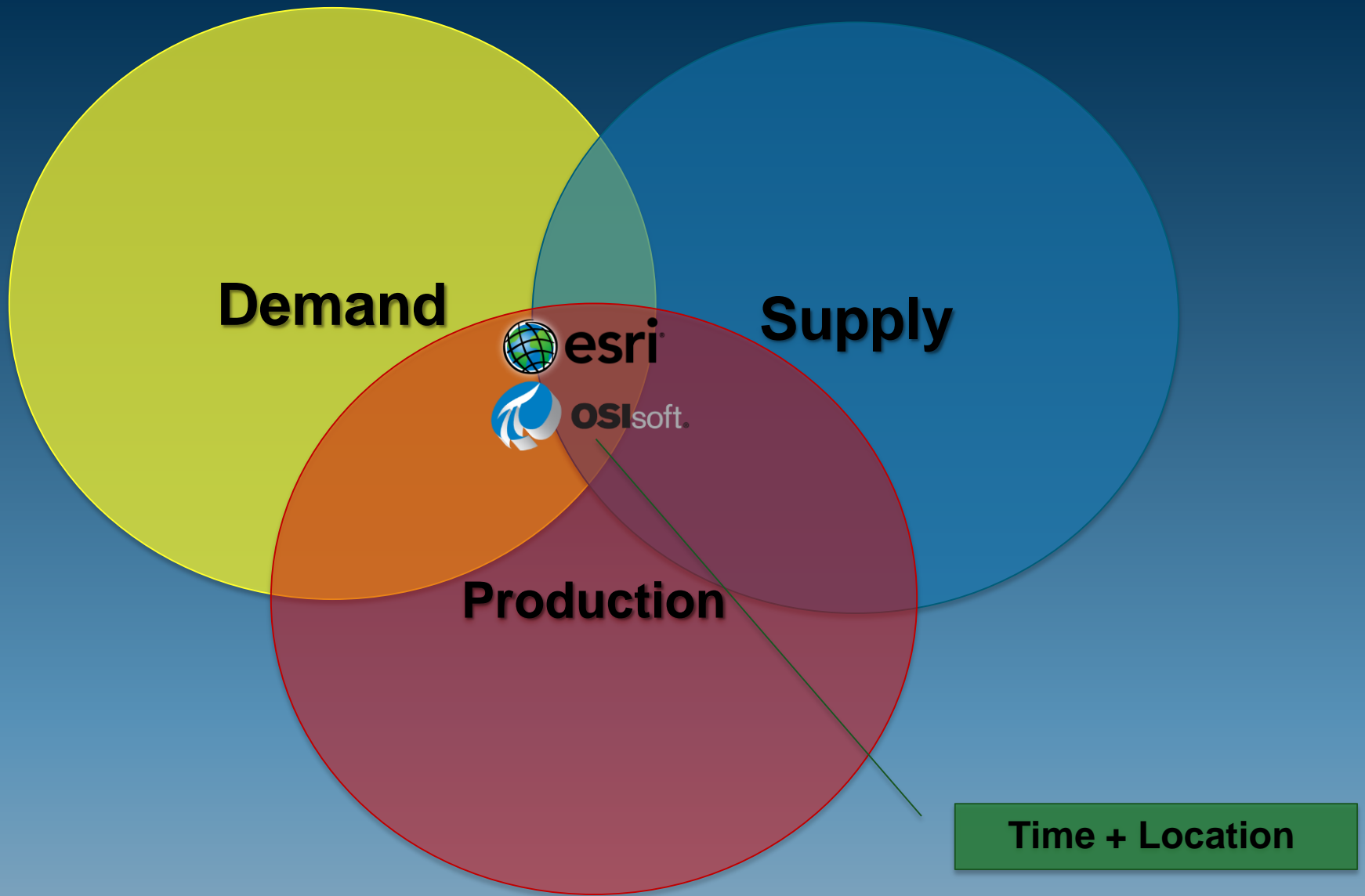
Spatial Analysis

The ArcGIS Location Platform Supports Everyone

Collaboration, Communication, Understanding

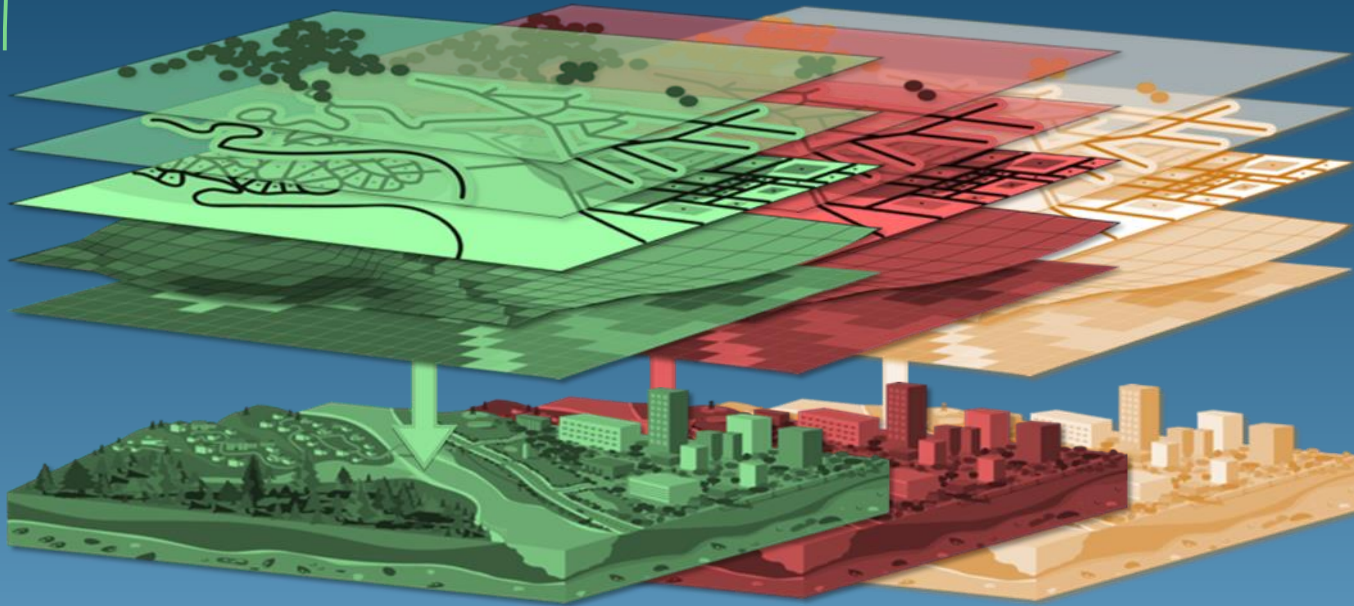


ArcGIS Enables every employee in your organization to easily discover, make, share, and use maps on any device anytime and any where.



Connecting Time & Location for a More Integrated Supply Chain

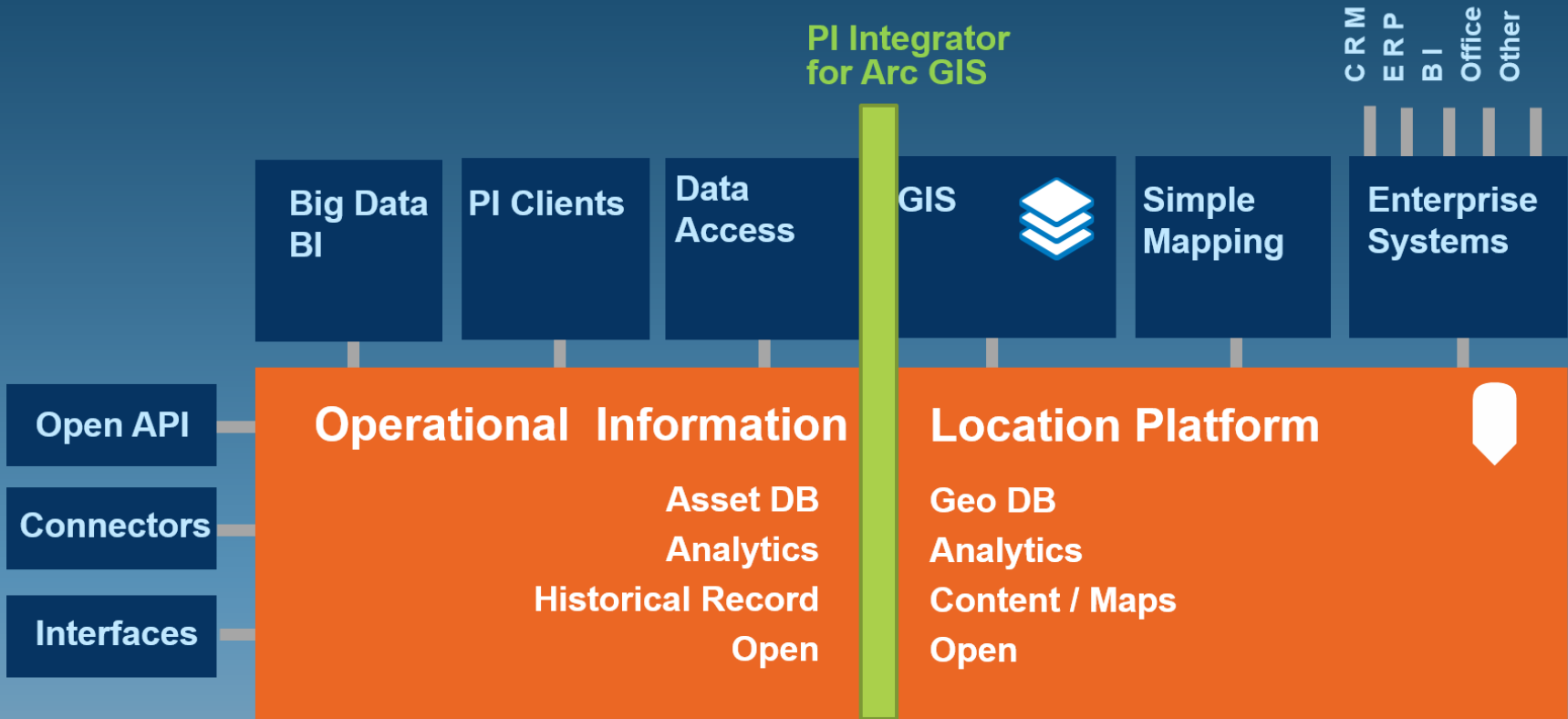
Sensors



Change Over Time

Real-Time Integration of Time and Space

PI/Esri Interoperability



The Value of Integration: A KPI Perspective

How Do Time and Location Impact KPI's?

Supply

- On-Time Delivery
- Sourcing Cycles
- Cost to Source
- Supplier's Quality Incoming
- Sustainability

Production

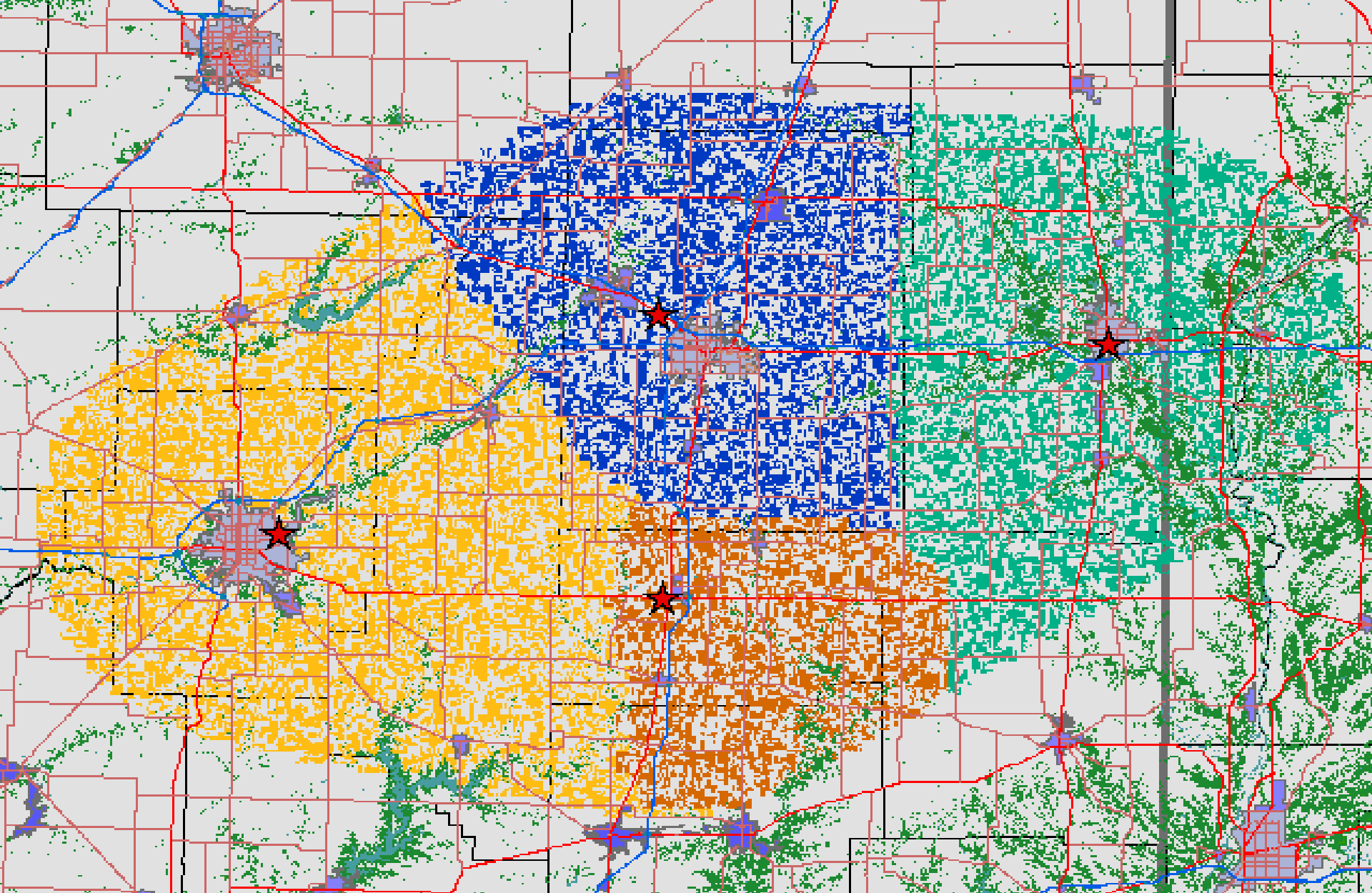
- Throughput
- Plant Downtime
- Asset Utilization
- Energy
- R.M.A.

Demand

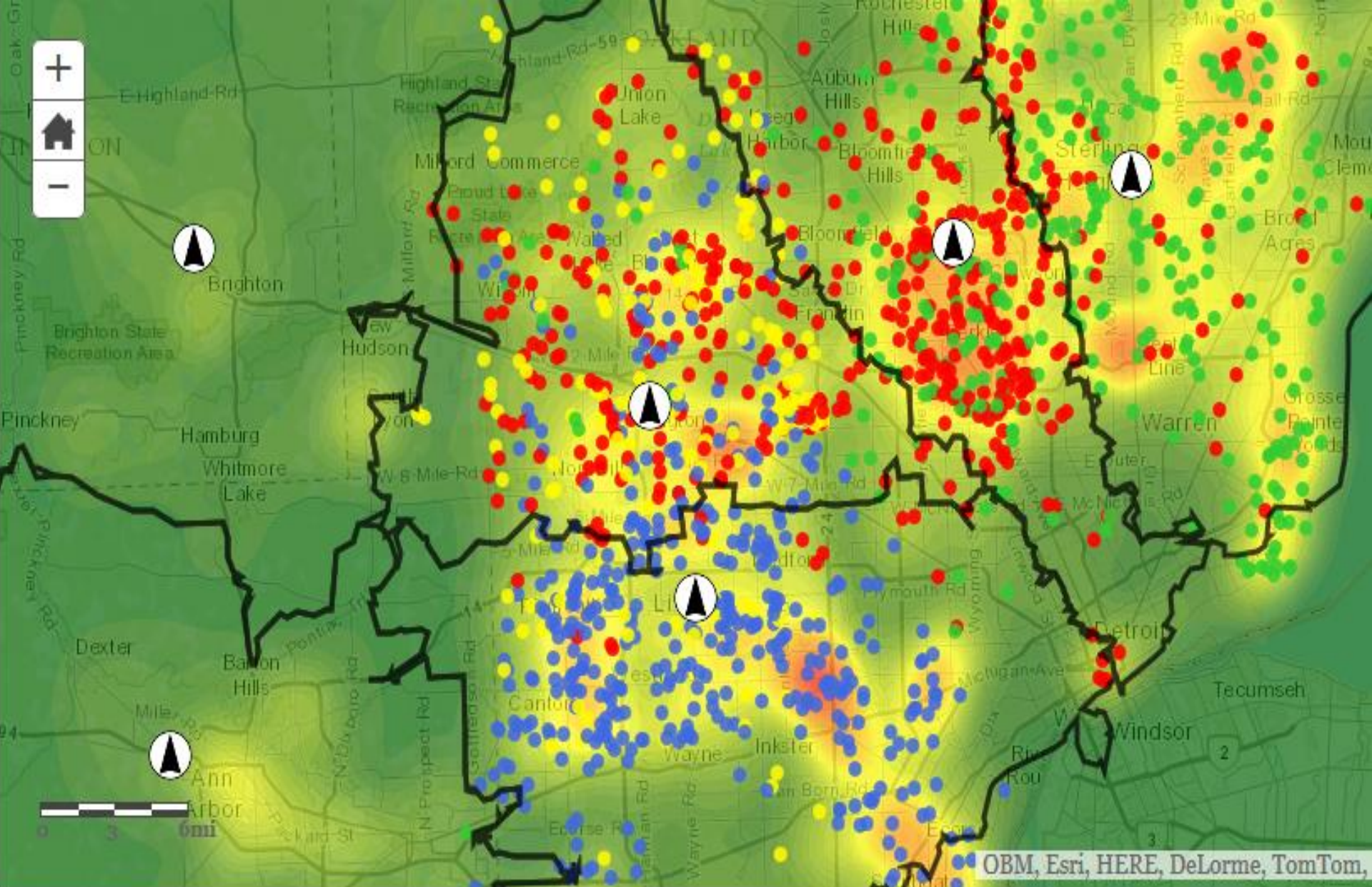
- Point of Sale
- On-Shelf Availability



Time and Location are Critical Factors in Every Link of the Supply Chain



Traditional Commodity Market Zone Map



Esri + OSIssoft: Commodity Market Zone Map

KPI Impacts

Demand

Supply Chain

Production

- **Cost to Source**
- **Supplier's Quality Incoming**

- **Cost/Unit**
- **W.A.G.E.S.**
- **Throughput Yield**
- **Energy/Product**



Basemaps ▾

🔍



Demo:

Plant to Plant Comparison

&

Supply Chain Vulnerability

Global Mfg. Network

🏠 📶 ☰

📶 Total Alerts 🌐 Global Incidents ☁️ NOAA WW

Layers

- 👁 Plants (Alerts)
- 👁 Plants
- 👁 Suppliers Tier 1
- 👁 Suppliers Tier 2
- 👁 Suppliers Tier 3
- 👁 Corporate Offices
- 👁 Port Chester Plant Employees

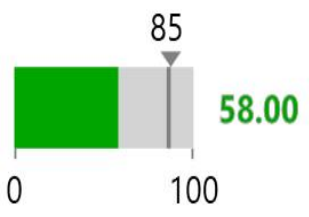
Layers Legend

Office Electricity



(sum of kilowatt demand from the office smart meters)

Air Temperature



(via live PI System Interface to Oakland Airport data)

Avg. Temperature

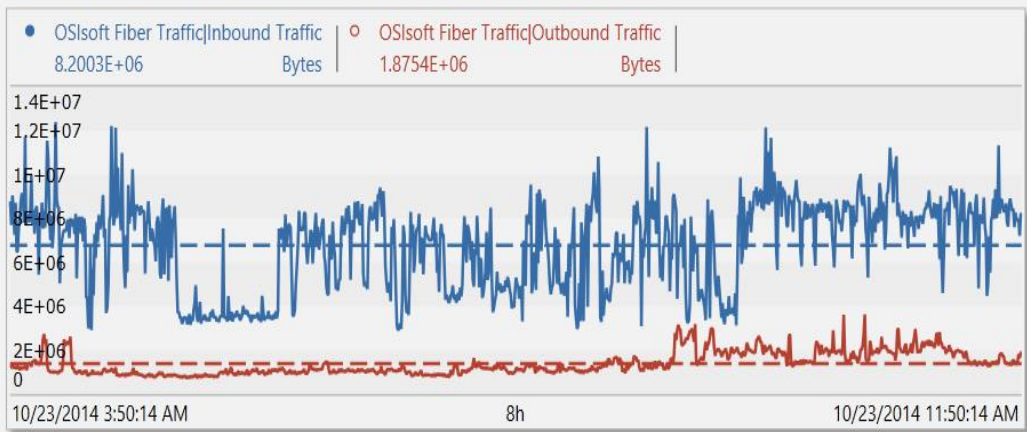
71.24 F

(real-time average inside OSIsoft Headquarters)

Smart City San Leandro



Building Gigabit Fiber Traffic



Live HVAC Zones

- Search
- Blue Marble Room Temperature: 72.37 F
 - Break Room Temperature: 71.01 F
 - Cafe Kitchens Temperature: 80.40 F

Zone Average

70.73 F

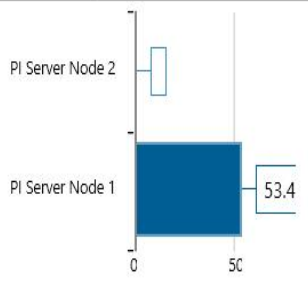
(average of all selected zones)

Air Quality



(via live PI System Interface to WeatherBug.com)

Server CPU Usage



KPI Impacts

Demand

- Point of Sale
- On-Shelf Availability

Supply Chain

- On-Time Delivery
- Agility

Production

- Plant Downtime
- Maintenance

Global Mfg. Network



Total Alerts



Global Incidents

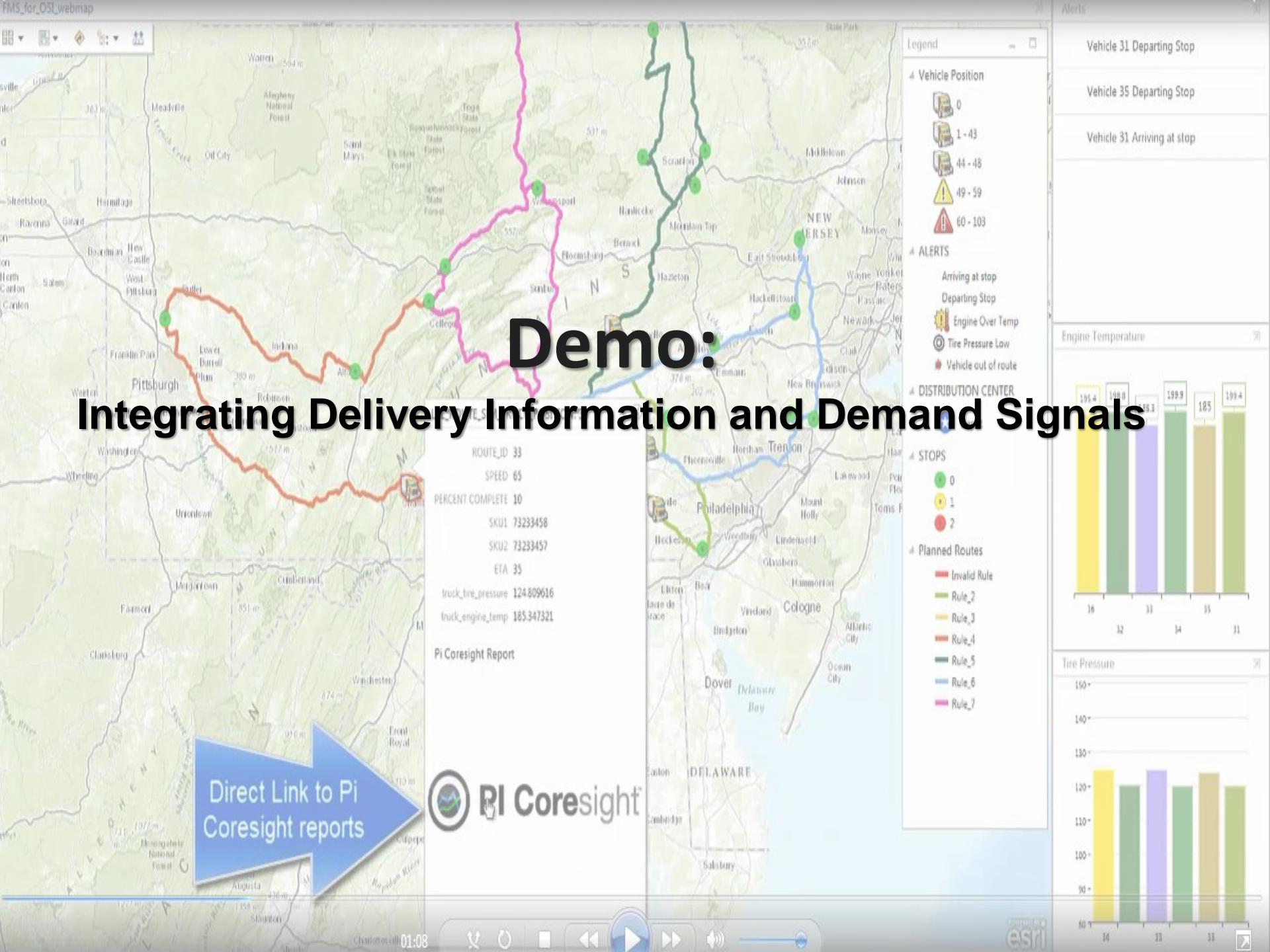


IQ4- WW

Layers

- Plants (Alerts)
- Plants
- Suppliers Tier 1
- Suppliers Tier 2
- Suppliers Tier 3
- Corporate Offices
- Port Chester Plant Employees

Layers Legend



Demo: Integrating Delivery Information and Demand Signals

ROUTE_ID: 33
SPEED: 65
PERCENT COMPLETE: 10
SKU1: 73233458
SKU2: 73233457
ETA: 35
truck_tire_pressure: 124.809616
truck_engine_temp: 185.347321

Pi Coresight Report

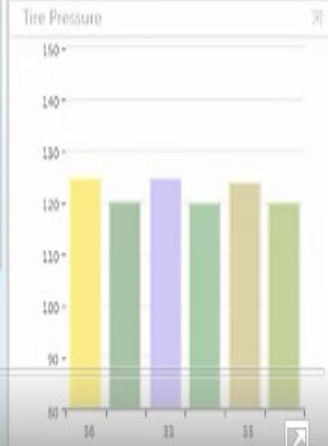
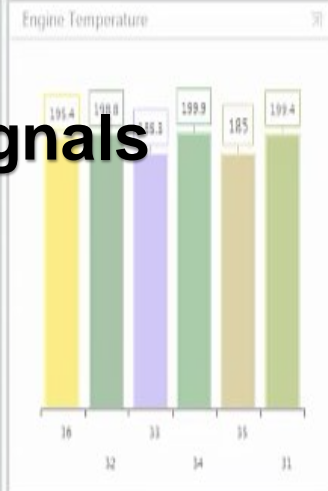
Direct Link to Pi Coresight reports

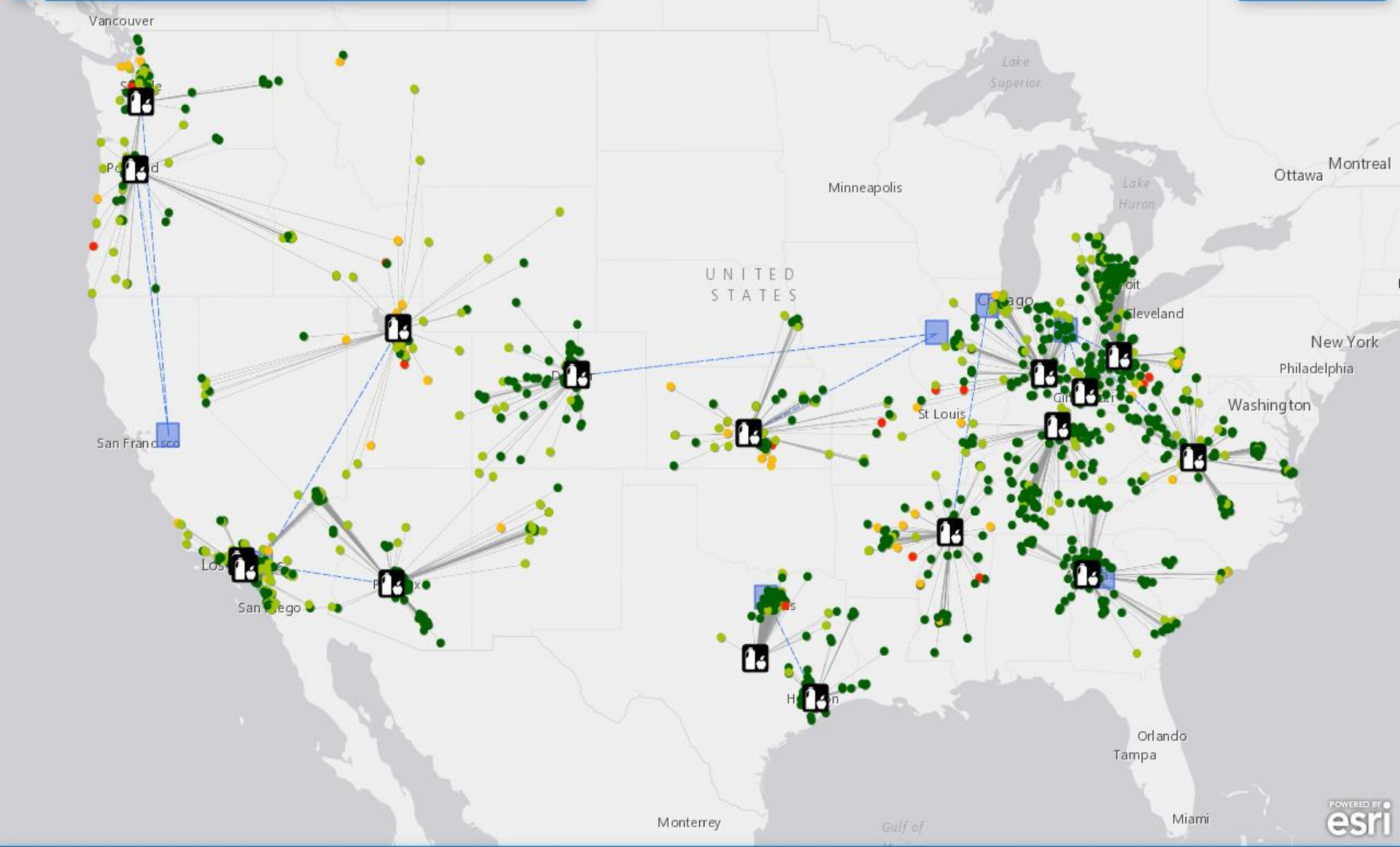


Legend

- Vehicle Position**
 - 0
 - 1 - 43
 - 44 - 48
 - 49 - 59
 - 60 - 103
- ALERTS**
 - Arriving at stop
 - Departing Stop
 - Engine Over Temp
 - Tire Pressure Low
 - Vehicle out of route
- DISTRIBUTION CENTER**
- STOPS**
 - 0
 - 1
 - 2
- Planned Routes**
 - Invalid Rule
 - Rule_2
 - Rule_3
 - Rule_4
 - Rule_5
 - Rule_6
 - Rule_7

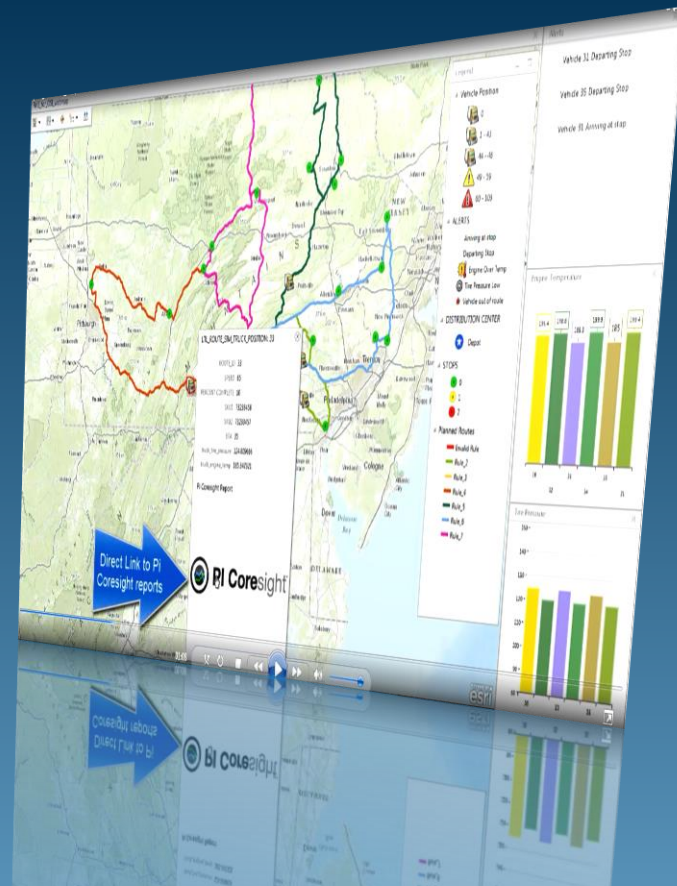
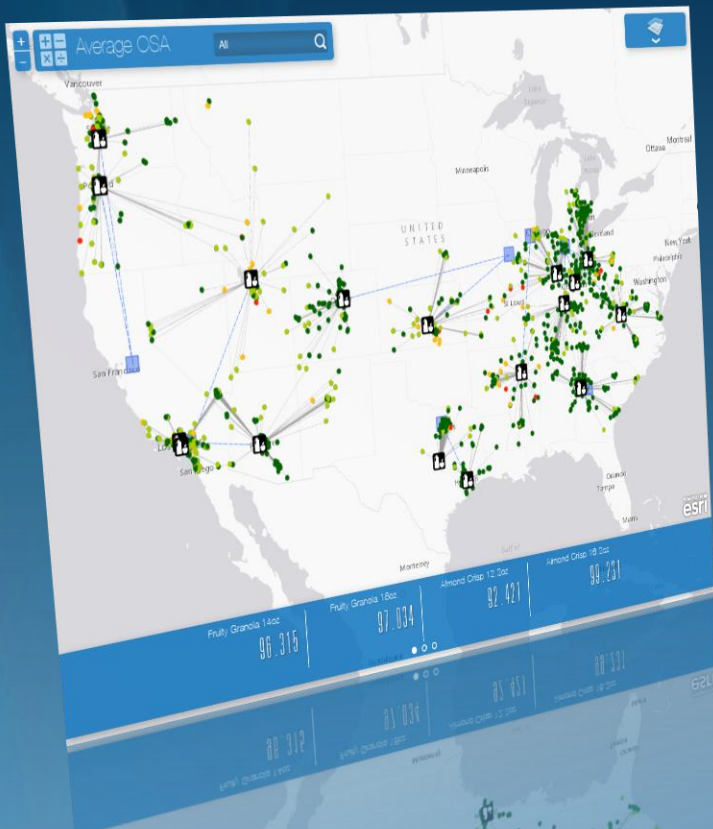
- Alerts**
- Vehicle 31 Departing Stop
 - Vehicle 35 Departing Stop
 - Vehicle 31 Arriving at stop





Fruity Granola 14oz	Fruity Granola 18oz	Almond Crisp 12.2oz	Almond Crisp 16.2oz
96.315	97.034	92.421	99.231

GUADALAJARA ● ○ ○



Demand

- Point of Sale
- On-Shelf Availability

Supply Chain

- On-Time Delivery
- Agility

Production

- W.I.P.

Additional Resources: ArcGIS for Manufacturing

- Supply Chain:
<http://www.esri.com/industries/business/manufacturing/supply-chain>
- Market Planning:
<http://www.esri.com/industries/business/manufacturing/supply-chain>
- Facilities Management:
<http://www.esri.com/industries/business/manufacturing/facilities-management>
- Performance Management:
<http://www.esri.com/industries/business/manufacturing/performance-management>

Other demonstrations in the pods:

- **Sales Dashboards**
- **RMA Analysis**
- **Market Research**

Stop by the demonstration pods!

Thank You

Ryan Schacht

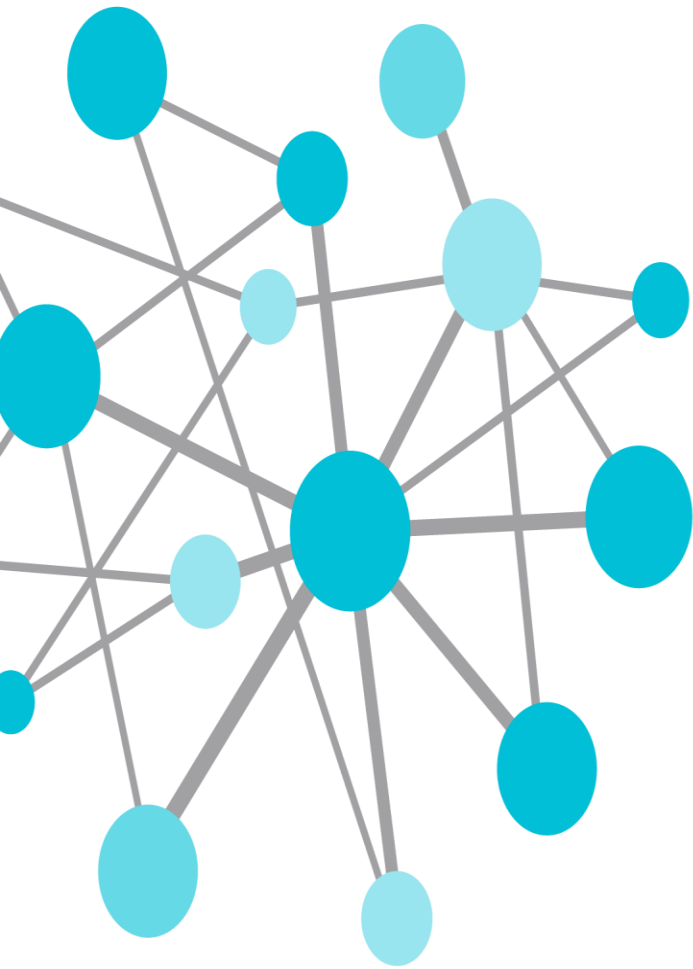
rschacht@esri.com

651-329-4757 C

651-454-0600 W



Understanding our world.



THANK
YOU

Brought to you by  **OSIsoft.**

Agenda

- 07:30 - 08:30 a.m. Registration and Continental Breakfast
- 08:30 – 09:00 a.m. **Welcome: Industry Trends & Manufacturing Operational Excellence - OSIsoft**
Jason Kurdziel, Account Manager
- 09:00 - 09:30 a.m. **The Journey to Real Time Operational Intelligence - OSIsoft**
Marc Gallant, Regional Manager
- 09:30 - 10:15 a.m. **Journey to Asset-Based Data – The Kellogg Story**
John Gothberg, IT & Control Systems Manager
- 10:15 - 10:30 a.m. Break / Demo Pods
- 10:30 - 11:15 a.m. **Integrating your Plant Information Management System: Strategies for Success**
Kirt Anderson, Senior MES Project Manager – Stone Technologies
- 11:15 - 12:00 p.m. **Rapid Insights with Data Analytics - Tate & Lyle**
Mark Massey, Process Control Software Manager: Global Manufacturing
- 12:00 - 01:30 p.m. Lunch / Demo Prods
- 01:30 – 02:15 p.m. **Analyzing Location for the Most Profitable Supply Chain – Esri**
Ryan Schacht, Account Executive
- 02:15 – 03:00 p.m. **Chocolate PI - The Hershey Company**
Russell Gregg, Sr. Project Manager: IS Global Supply Chain/Manufacturing Systems
- 03:00 – 03:45 p.m. **Evolution of OSIsoft PI to an Enterprise Agreement - Abbott Nutrition**
Rich Colvin, Area IT Manager: ANSC Asia & Ireland
- 03:45 - 04:15 p.m. **Roundtable Review**
- 04:15 - 04:30 p.m. Wrap-up/Seminar Conclusion – Jason Kurdziel, Account Manager, OSIsoft
- 04:30 - 06:00 p.m. Networking Reception / Demo Pods