Tracking your Freight Using IoT Fleet Monitoring and OTM

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Safe Harbor Statement

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Agenda

1. Oracle IoT Fleet Monitoring Overview
2. Oracle IoT FM and Transportation Management Demo
3. Q&A
Transportation Blind Spots in the Supply Chain

Outdated, inaccurate transportation visibility
Most of today's transportation visibility solutions have very high latency and many blind spots

Disruptions in transportation are detected too late
Changes to transportation ETA are caught too late to mitigate any downstream impact on the business

Real-time tracking data is often inaccessible to shippers
No easy way to get real-time updates on shipments other than track and trace. Less than 11% shippers have integration for real-time data in their Transportation Management Systems

Fleet telematics is not well integrated with logistics planning
Logistics systems don't have visibility into fleet data such as current vehicle condition, failure predictions, driving behavior data and fuel consumption analytics
Impact of Transportation Blind Spots in the Supply Chain

- Additional Hours & Reduced Warehouse Productivity
- Dissatisfied Customers
- More Warehouse Space Required
- Larger Fleet Required
- Increased Fuel, Oil, Operation Costs
- Freight Damage & Spoilage
- Stock-outs Disrupt JIT Production Schedules
- Higher Inventory Holding Costs
- Lost Opportunities for Consolidation
- Increased Driver Wages & Benefits

Freight Shippers  Private Fleets
Key Features & Capabilities

Real-time location for shipments in-transit
• Real-time shipments tracking from a business-user friendly dashboard that highlights relevant KPIs
• Automatic geo-fences get insights for shipment arrival, departure times, delays and ETA

Logistics planning integrated with tracking
• Built-in integration with Oracle Transportation Management for importing shipments, frequent status updates and exception handling
• Real-time ETA calculation factoring in traffic, driver rest time, wait time, accessorial time and other key aspects

Mobile App based tracking of shipments on 3rd Party Carriers
• Track shipments on 3rd party carriers simply using a mobile app on the drivers’ phones or on-board tablets

Customized KPIs for fleet & logistics performance
• No-code KPI editor for creating customized KPIs
• Rapid visualization of KPIs using built-in widgets

Instant visibility into disruptions for proactive actions
• Immediate notifications for change in ETA for shipments caused by traffic delays, vehicle faults or other reasons
• No-code rules editor to create rules for geo-fence violations, detect vehicle faults and identify poor driving behavior e.g., speeding

Complete real-time fleet visibility
• Connect any OBD II, J1939 compliant vehicle using an on-board data logger or integrate data via APIs from a telematics provider
• Get a complete picture of vehicle location, route, health, driving behavior, fuel consumption and other important metrics
# Segmentation for Fleet Monitoring Use Cases

## Private/For Hire Fleet

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much am I spending on Fuel?</td>
<td>Can I identify reasons for extra fuel spend?</td>
</tr>
<tr>
<td>Can I be notified if the driver deviates from assigned route?</td>
<td></td>
</tr>
<tr>
<td>Are there any issues with the vehicle?</td>
<td>How is the driver driving?</td>
</tr>
<tr>
<td>Can I share real-time load locations with my customers?</td>
<td>Can I integrate with my TMS and GPS vendors?</td>
</tr>
<tr>
<td>Can I eliminate manual check calls to and from my customers?</td>
<td>Can I reduce or eliminate EDI?</td>
</tr>
<tr>
<td></td>
<td>Can I be notified if the driver deviates from assigned route?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Shippers

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the ETA? Can I be notified of potential delays?</td>
<td>Can I track by exception and reduce hours spent on track and trace?</td>
</tr>
<tr>
<td>Can I track by exception and reduce hours spent on track and trace?</td>
<td></td>
</tr>
<tr>
<td>Where is the load right now?</td>
<td>Can I reduce or eliminate EDI?</td>
</tr>
<tr>
<td>Can I reduce or eliminate EDI?</td>
<td></td>
</tr>
<tr>
<td>What is impact of delay on my supply chain?</td>
<td></td>
</tr>
<tr>
<td>Can I be notified when the load is near the destination?</td>
<td></td>
</tr>
<tr>
<td>Can I integrate with my TMS, and have single point of view?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can I alert the right people in case of events?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 3PLs/Brokers

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the ETA? Can I be notified of potential delays?</td>
<td>Can I track by exception and reduce hours spent on track and trace?</td>
</tr>
<tr>
<td>Can I track by exception and reduce hours spent on track and trace?</td>
<td></td>
</tr>
<tr>
<td>Can I get arrival and departure notifications?</td>
<td>Can I integrate with TMS vendors or create custom integrations?</td>
</tr>
<tr>
<td>Can I integrate with my TMS and GPS vendors?</td>
<td></td>
</tr>
<tr>
<td>Can I integrate with TMS vendors or create custom integrations?</td>
<td></td>
</tr>
<tr>
<td>Can I alert the right people in case of events?</td>
<td></td>
</tr>
<tr>
<td>Can I eliminate manual check calls?</td>
<td></td>
</tr>
</tbody>
</table>
IoT Fleet Monitoring Cloud
Real-time Transportation Visibility Integrated with Supply Chain Management

Connected Fleet
Real-time Monitoring
Transportation Visibility
Fleet Performance
Key features/Capabilities
Unified, Real-time, Accurate Assets Visibility – Past, Current and Future

Connect Any Type of Vehicle
Wide range of connectivity options (OBD2, J1939, Telematics, etc.) allow connecting any type of vehicle over any type of network

Real-time in-transit Location
Get real-time location of vehicles. Easy to use dashboard for business-users for real-time visibility

Complete Visibility
Get a complete picture of vehicle location, route, health, driving behavior, fuel consumption and other important metrics
Key features/Capabilities
Unified, Real-time, Accurate Assets Visibility – Past, Current and Future

Geofences to Monitor Usage
Quickly create geofences and use built-in geospatial analytics to monitor unauthorized movement, route-optimization, vehicle thefts, arrival and departure notifications

Real-time Fault Detection
Instant visibility into vehicle faults on dashboard with color coded indicators for faults

Incidents & Warnings Management
Built-in incidents and warnings management allows tracking issues that need attention
### Key features/Capabilities

**Unified, Real-time, Accurate Assets Visibility – Past, Current and Future**

<table>
<thead>
<tr>
<th>Business-user Friendly Rules Editor</th>
<th>Mobile App for Carriers and Shippers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to use form-based rules editor allows creating rules for detecting shipment/vehicle/driver delays, performance issues and usage violations</td>
<td>Drivers view assigned itinerary, start and complete trips and shipments, view past trips, trip and shipment summary.</td>
</tr>
</tbody>
</table>

**Onboard 3rd Party drivers without any registration using shipment links, to allow tracking of shipment location via Mobile GPS (for the duration of shipment only)**
Key features/Capabilities

Unified, Real-time, Accurate Assets Visibility – Past, Current and Future

Integrated with Logistics Cloud/OTM

Built-in integration with Oracle Logistics Cloud allows for real-time visibility into shipments location and automatic event handling

- Import shipments automatically into IoT FM, from OTM once they are planned
- Ability to map drivers assigned via OTM workbench to IoT FM Drivers
- Send real-time shipment location updates, arrival and departure notifications and other important events from IoT FM to OTM
- Real-time ETA calculation, factoring in traffic, driver rest time, wait time, accessorial time and other key aspects
Key features/Capabilities
Unified, Real-time, Accurate Assets Visibility – Past, Current and Future

Extend Using Platform Capabilities
Extend IoT Fleet Monitoring Cloud using integration and analytics features of the underlying IoT Cloud platform

REST API for IoT Fleet Monitoring
Use documented REST API to integrate IoT Fleet Monitoring with other applications
IoT Fleet Monitoring - Shipment Tracking
Conceptual Process

### Tracking Shipments on Private Fleets

- **Fleet Manager (Private Fleet)**
  - Plan & Monitor Shipments & Fleet Usage
  - Detailed Monitoring & Policies

- **Oracle Logistics Cloud**
  - With Fleet Management

- **Oracle IoT Fleet Monitoring Cloud**
  - Shipments Data
  - Shipments Status

- **Shipment Tenders**
  - Passive Real-time location & vehicle data (IoT FM Driver Mobile App + OBD II/J1939)

### Tracking Shipments on 3rd Party Carriers

- **Logistics Manager (Shipper)**
  - Plan & Monitor Shipments
  - Detailed Monitoring & Policies

- **Oracle Logistics Cloud**
  - Shipments Data
  - Shipments Status

- **3rd Party Carrier Truck Management & Telematics Systems**
  - Optional custom integration with carrier’s telematics system

- **Oracle IoT Fleet Monitoring Cloud**
  - Shipment Data
  - Passive Real-time location from IoT FM Driver Mobile App
IoT Fleet Monitoring - Shipment Tracking
Conceptual Process – 3rd Party Carriers

1. Unique shipment link sent to carrier after tender is accepted using existing carrier integration.
2. Carrier sends shipment link to driver.
3. Driver clicks on link to launch IoT FM Mobile App. Driver answers verification questions first time and clicks on “Start” to allow tracking for shipment.
4. IoT FM Mobile App sends passive location updates at frequent intervals.
5. IoT FM continuously analyzes data to generate shipment status updates. Automatically stops tracking after driver has reached destination.
IoT – OTM Click-through Demo
Private Fleet Scenario
### Shipment Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Shipment</th>
<th>Carrier</th>
<th>Driver ID</th>
<th>Mode</th>
<th>Stops</th>
<th>T</th>
<th>S</th>
<th>F</th>
<th>Ship From</th>
<th>Ship To</th>
<th>Start Time</th>
<th>End Time</th>
<th>Weight</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1.003</td>
<td>00310</td>
<td>VISION FLEET</td>
<td>DRIVER_2</td>
<td>TL</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>IOT SAN FRANCISCO</td>
<td>IOT MILPITAS</td>
<td>2017-06-18 12:04 AM</td>
<td>2017-06-18 00:30 AM</td>
<td>26000</td>
<td>LB</td>
</tr>
<tr>
<td>D1.003</td>
<td>00350</td>
<td>JB HUNT</td>
<td>DRIVER_1</td>
<td>TL</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>IOT DOTHAN AL DC</td>
<td>IOT NORCROSS GA CUST</td>
<td>2017-11-09 09:38 AM</td>
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<td>43000</td>
<td>LB</td>
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<tr>
<td>D1.003</td>
<td>00360</td>
<td>VISION FLEET</td>
<td>DRIVER_1</td>
<td>TL</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>IOT MALvern AL DOM</td>
<td>IOT NORCROSS GA CUST</td>
<td>2017-11-09 09:04 AM</td>
<td>2017-11-10 00:46 AM</td>
<td>43000</td>
<td>LB</td>
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### Related Stops

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<th>Stop Type</th>
<th>Location</th>
<th>City</th>
<th>ST</th>
<th>Distance</th>
<th>Plans</th>
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</thead>
<tbody>
<tr>
<td>D1.003x1</td>
<td>NFR</td>
<td>IOT MALVERN AL DOM</td>
<td>BLOOMSB</td>
<td>AL</td>
<td>0.9 MI</td>
<td>2017-11</td>
</tr>
<tr>
<td>D1.003x2</td>
<td>P</td>
<td>IOT DOTHAN AL DC</td>
<td>DOTHAN</td>
<td>AL</td>
<td>11.8 MI</td>
<td>2017-11</td>
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<tr>
<td>D1.003x3</td>
<td>D</td>
<td>IOT STOCKBRIDGE GA</td>
<td>STOCKBRIDGE</td>
<td>GA</td>
<td>200.7 MI</td>
<td>2017-11</td>
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<tr>
<td>D1.003x4</td>
<td>D</td>
<td>IOT NORCROSS GA CUST</td>
<td>NORCROSS</td>
<td>GA</td>
<td>35.4 MI</td>
<td>2017-11</td>
</tr>
<tr>
<td>Carrier</td>
<td>Driver ID</td>
<td>Mode</td>
<td>Stops</td>
<td>T</td>
<td>F</td>
<td>Ship From</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>------</td>
<td>-------</td>
<td>---</td>
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<td>-----------------</td>
</tr>
<tr>
<td>VISION FLEET</td>
<td>DRIVER_2</td>
<td>TL</td>
<td>3</td>
<td></td>
<td></td>
<td>IOT SAN FRANCISCO</td>
</tr>
<tr>
<td>JB HUNT</td>
<td>DRIVER_1</td>
<td>TL</td>
<td>3</td>
<td></td>
<td></td>
<td>IOT MILPAS</td>
</tr>
<tr>
<td>VISION FLEET</td>
<td>DRIVER_1</td>
<td>TL</td>
<td>4</td>
<td></td>
<td></td>
<td>IOT MALVERN, AL</td>
</tr>
</tbody>
</table>
This vehicle is currently assigned to you

T680

09365
SLOCOMB, AL to NORCROSS, GA

Start First Shipment
### Incidents

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
<th>Status</th>
<th>Priority</th>
<th>Type</th>
<th>Creation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high engine temperature</td>
<td>KL20 AB 1234</td>
<td>New</td>
<td>Medium</td>
<td>Warning</td>
<td>Jan 03 2018 04:51 PM</td>
</tr>
<tr>
<td>Very high engine temperature</td>
<td>KL20 AB 1234</td>
<td>Withdrawn</td>
<td>Medium</td>
<td>Maintenance</td>
<td>Dec 14 2017 09:16 PM</td>
</tr>
</tbody>
</table>

**Source**

- New 1
- Open
- Resolved
- Work in progress
- Withdrawn 5

**Status**

- High
- Medium 6
- Low
- Maintenance 5
- Warning 1
Shipment: 09512
IoT – OTM Click-through Demo
Third Party Carrier Scenario
<table>
<thead>
<tr>
<th>Text Template ID</th>
<th>Document Type</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remarks

<table>
<thead>
<tr>
<th>Remark Qualifier ID</th>
<th>Remark Text</th>
<th>Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[https://demobms.us.oracle.com/sm/client/api/v2/shipments/commDetails?id=q0Kv%2BG3uio%2BO3o%3k5Ou%2Be04k+FukxM%02%u00392](https://demobms.us.oracle.com/sm/client/api/v2/shipments/commDetails?id=q0Kv%2BG3uio%2BO3o%3k5Ou%2Be04k+FukxM%02%u00392)
John, please use the shipment link below to start the shipment assigned to you:

https://tinyurl.com/y8cxar
User Verification

In order to proceed, please verify details about this shipment.

Number of delivery stops?
Select Option

Correct address of stop number 2?
Select Option

Proceed
Shipment Overview

980 MURRAY RD, 36301
Start: Monday, 5:28 PM

337 miles

5600 N HENRY BLVD, 30281
Expected: Monday, 10:11 PM

57 miles

1015 NORCROSS INDUSTRIAL PARK
Finish: Monday, 11:43 PM

Start Shipment
<table>
<thead>
<tr>
<th>ID</th>
<th>Carrier</th>
<th>Driver ID</th>
<th>Mode</th>
<th>Stops</th>
<th>T</th>
<th>S</th>
<th>F</th>
<th>Ship From</th>
<th>Ship To</th>
<th>Start Time</th>
<th>End Time</th>
<th>Weight</th>
<th>Weight</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1 09300</td>
<td>VISION FLEET</td>
<td>09300</td>
<td>TL</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>IOT SANTA CLARA</td>
<td>IOT SAN FRANCISCO</td>
<td>2017-12-14 22:14 A...</td>
<td>2017-12-15 02:24 A...</td>
<td>43,000LB</td>
<td>1,000 CU FT</td>
<td></td>
</tr>
<tr>
<td>D1 09514</td>
<td>JB HUNT</td>
<td>09514</td>
<td>TL</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>IOT DOTHAN AL DC</td>
<td>IOT STOCKBRIDGE GA</td>
<td>2018-01-05 17:02 A...</td>
<td>2018-01-05 23:11 A...</td>
<td>25,000LB</td>
<td>900 CU FT</td>
<td></td>
</tr>
<tr>
<td>D1 09526</td>
<td>JB HUNT</td>
<td>09526</td>
<td>TL</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>IOT DOTHAN AL DC</td>
<td>IOT NORCROSS GA</td>
<td>2018-01-15 07:59 A...</td>
<td>2018-01-15 14:49 A...</td>
<td>43,000LB</td>
<td>1,000 CU FT</td>
<td></td>
</tr>
</tbody>
</table>
Shipment Overview

980 MURRAY RD, 36301
- Start: Friday, 5:28 PM
- Distance: 337 miles

5600 N HENRY BLVD, 30281
- Expected: Friday, 10:11 PM

Alert
Are you sure you would like to complete the shipment?

YES | NO

Complete Shipment
Differentiation
Real-time Transportation Visibility Integrated with Supply Chain Management

Gain real-time visibility into existing processes
• Rapidly create new value by adding IoT Fleet Monitoring to existing Oracle OTM deployments for real-time visibility and automatic exception handling

Complete visibility – not just location
• Unlike systems that only track location, IoT Fleet Monitoring uses IoT to get a complete picture of vehicle location, health, driving behavior, fuel consumption, and cargo condition

Start small, validate, scale as-you-go
• Highly-flexible IoT technology platform enables starting small and then scale to large volumes without any changes
• Partner ecosystem of certified vehicle data loggers makes it easy to quickly onboard vehicles
Oracle IoT Fleet Monitoring Roadmap

**OTM digital thread** for private fleets

**Dynamic geo-fencing** for stops

**UX improvements** to simplify tracking vehicles and shipments

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**Private Fleets Shipment Monitoring**

- **Q4 2017**
  - Real-time monitoring of shipments on any carrier with OTM digital thread
  - Custom KPIs for fleet & shipment monitoring
  - J1939 standard support
  - 3rd Party Carrier Shipment Tracking

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**Shipments Condition Monitoring**

- **Q1 2018**
  - Shipment condition monitoring to detect and prevent damage
  - Advanced geo-fencing to auto-detect route deviations
  - Interoperability and shared data between IoT Applications

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**3rd Party Carrier Shipment Tracking**

- **Q2 2018**
  - Continued focus on adding new features and functionality to simplify Digital Twins and Digital Threads for large-scale IoT deployments

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**Continued focus on Digital Twins and Digital Threads**

- **Q3 2018**
  - Continued focus on adding new features and functionality to simplify Digital Twins and Digital Threads for large-scale IoT deployments
Questions?