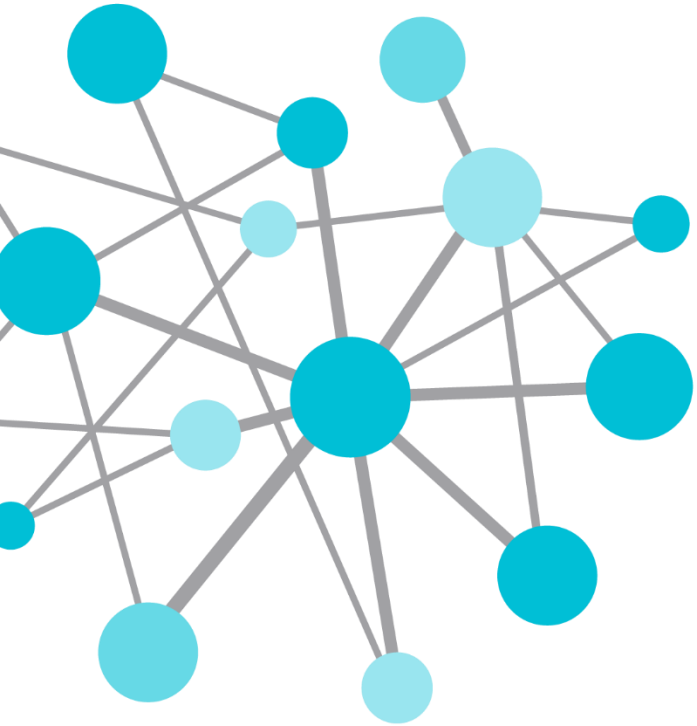
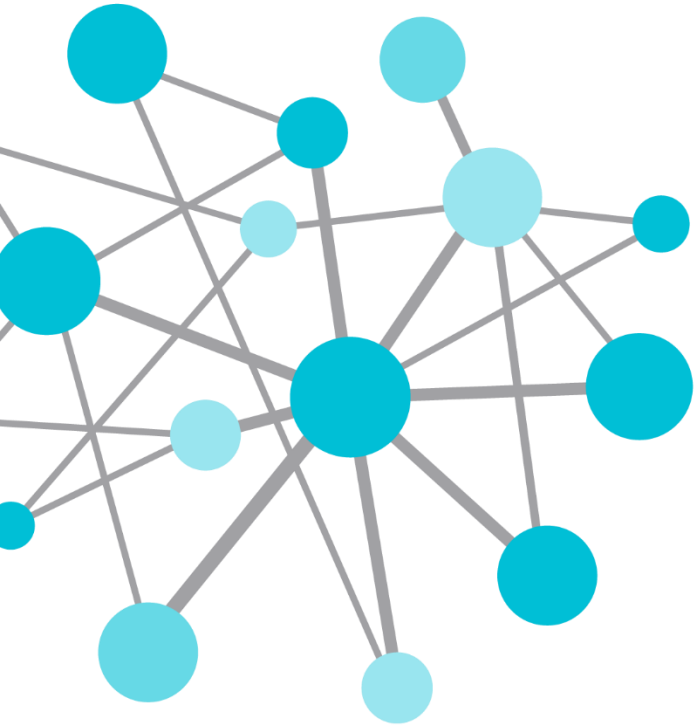


Mobilizing the Power of Data Enabling On Highway Truck Vehicle Connections to a Cloud Infrastructure

Presented by **Michael Treasure**

Agenda

- Introduction
- Industry & Opportunity
- Business Model
- Architecture & PI System
- Solution
  - Demo 1
  - Performance Metrics
  - Demo 2
- Summary
- Q&A

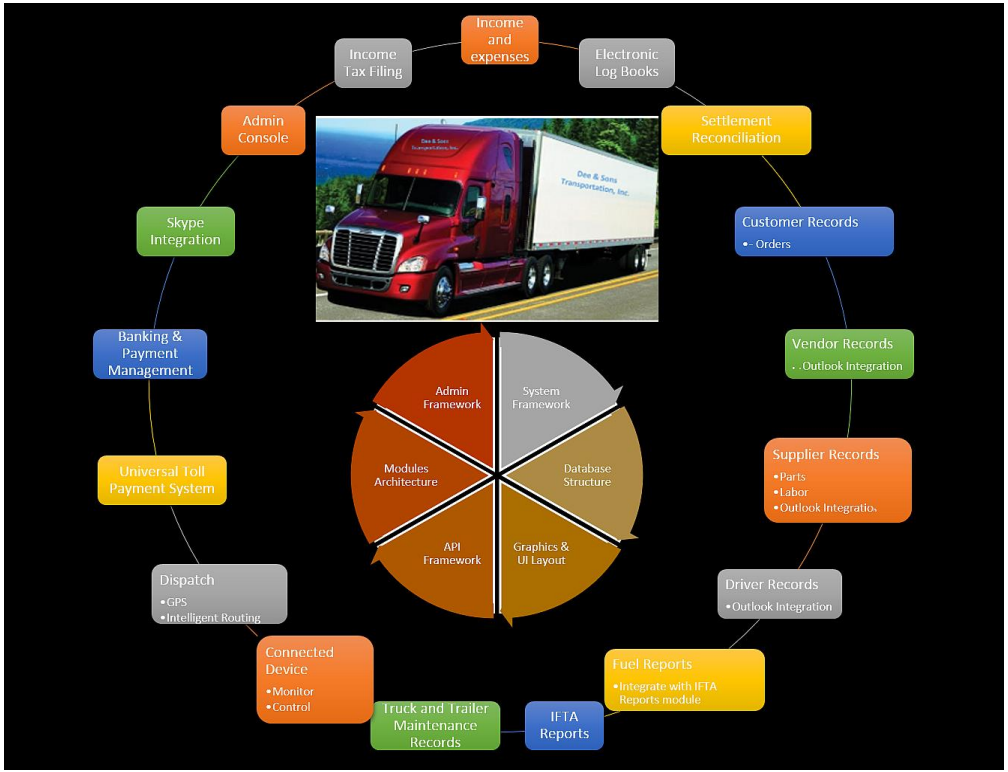


Introduction

TIEMAC - Technology Empowering Interoperability

TIEMAC®'s industry leading business services are designed to help Customers, small and large, optimize the performance of their diverse local and or global business operations including:

- Compliance & Regulatory Reporting,
- Real Time Financial and Technical Operating Analytics
- Predictive Failure Trends
- Proactive Condition Based Maintenance

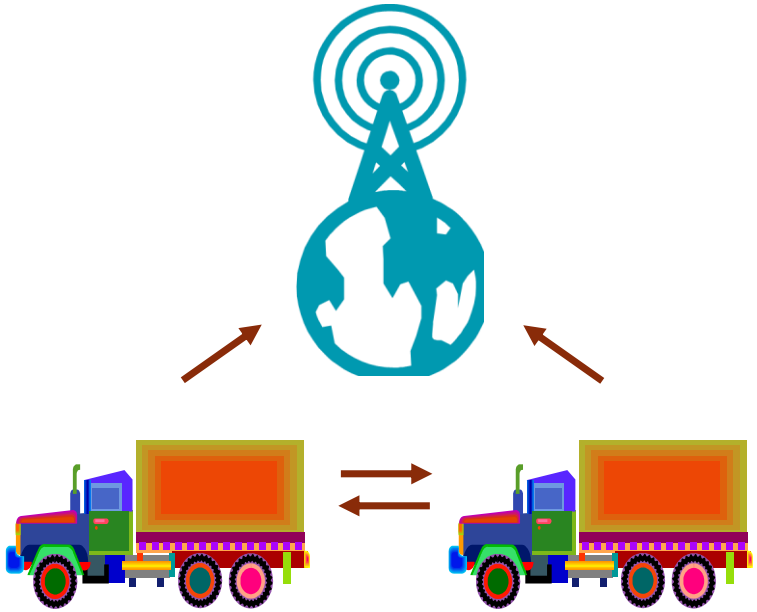


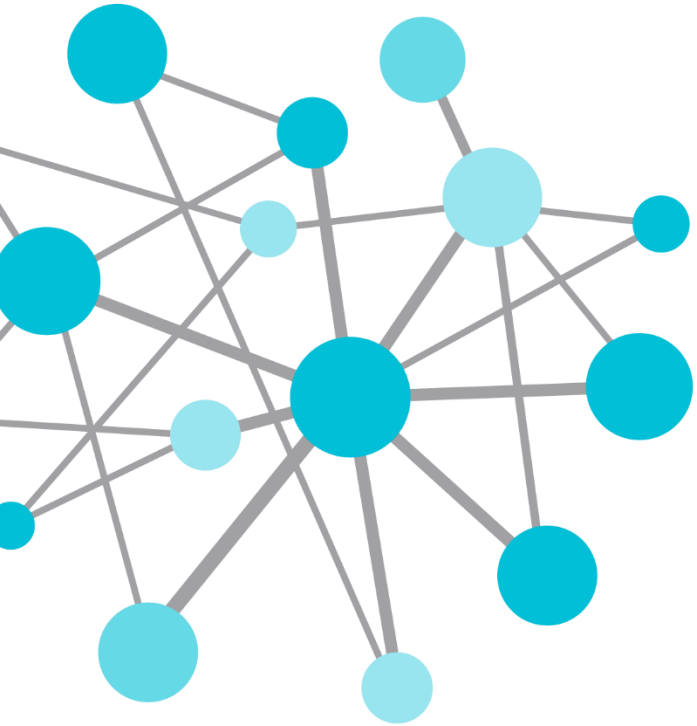
Barriers to data acquisition are lowered…

The government has undertaken two broad approaches to potentiating connected vehicle infrastructure: Vehicle to Vehicle (V2V) and Vehicle to Infrastructure V2I)

The Federal government has mandated Electronic Onboard Recorders (EOBR) technology for all truckers as part of the highway funding bill – dubbed the "Moving Ahead for Progress in the 21st Century Act" or "MAP-21" – signed into law in July 2012.

The timeline for EOBRs established by the MAP-21 funding bill is very straightforward. "The Federal Motor Carrier Safety Administration (FMCSA) must issue a final rule on EOBRs by Oct. 1, 2013, with the effective date of implementation Oct. 1, 2015."





Industry & Opportunity

Trucking co.’s make a significant contribution to economic prosperity but not all are large

- Seventy percent of all freight transported annually, accounting for $671 billion worth of manufactured and retail goods in the U.S. alone. Add $295 billion in truck trade with Canada and $195.6 billion in truck trade with Mexico.
- The transportation industry paid $37.4 billion in federal and state highway-user taxes. Commercial trucks make up 12.5% of all registered vehicles, but paid 36.5% of total highway-user taxes in 2006.

15.5 million trucks operate in the U.S.

2 million are tractor trailers.

Trucks deliver nearly 70% of all freight delivered annually.

3.5 million truck drivers in the U.S.

1 in 9 drivers are independent.

Canada has over 250,000 truck drivers.

1.2 million trucking companies in the U.S.

97% operate 20 or fewer trucks.

90% operate 6 or fewer trucks.

Total revenue estimates - $255.5 B.

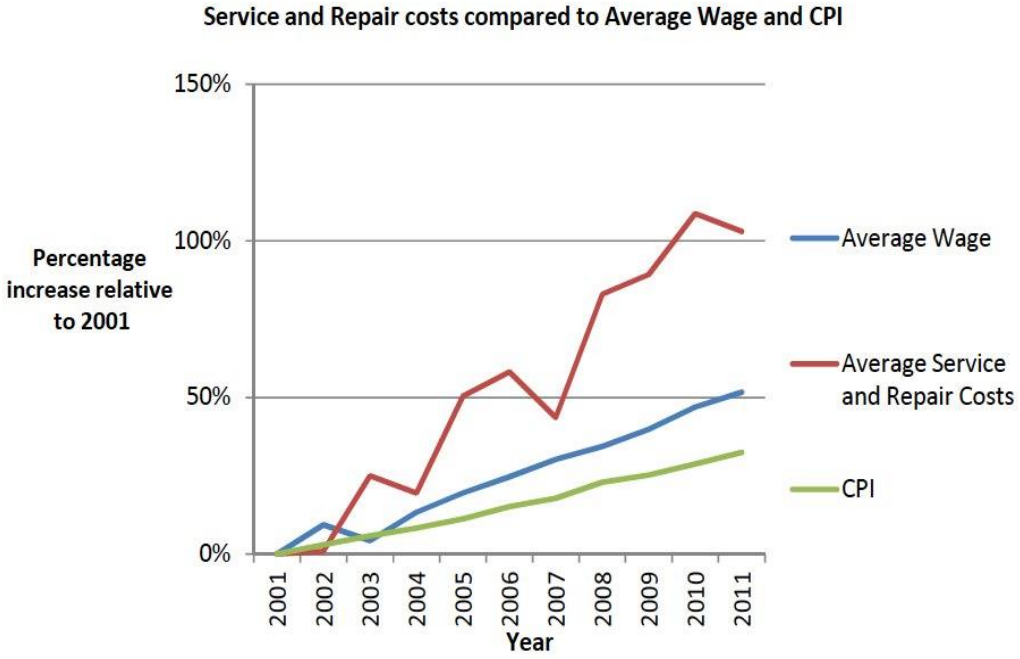
For Hire or Common Carriers - $97.9 B.

Private Fleets - $121 B.

What do financials look like?

Estimates are that the average operating ratio for trucking companies is 95.2. This means for every dollar in revenue the trucking company has a cost of 95.2 cents.

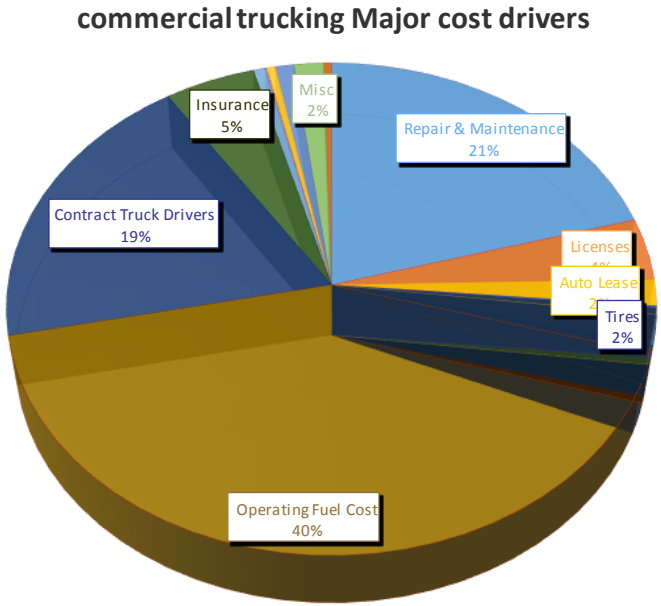
That's a profit of 4.8 cents out of every dollar



Source: RACV Average Running and Repair costs, Australian Bureau Statistics-Average Weekly Wage and Consumer Price Index

Major opportunities in efficiency and Repairs and Maintenance

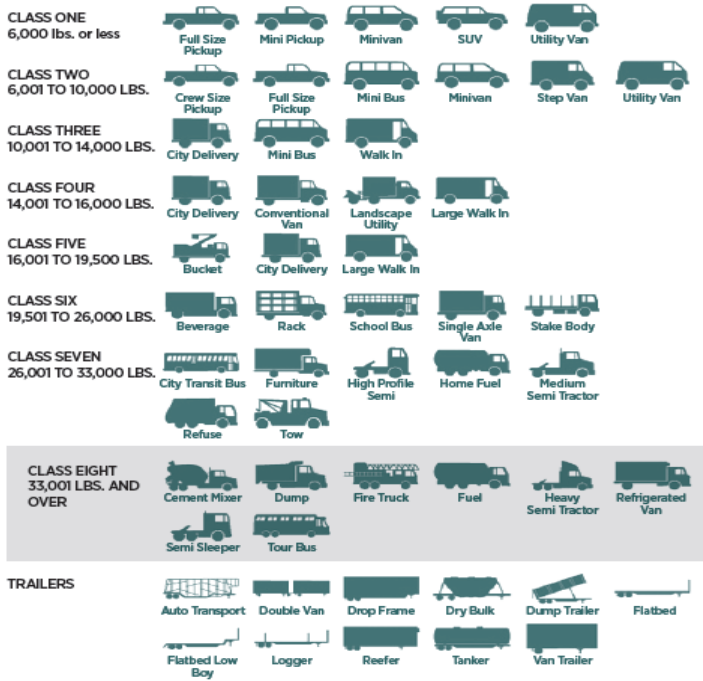
- In addition to the federal and state highway user taxes paid it is also estimated that to operate on the roads, the trucking industry pays $21.4 billion.
- Fuel cost makes up approximately 40-45% of trucking operating cost while repairs and maintenance account for another 15-20% of total operating cost.



Fleet Managers and Owner operators have an acute need for a solution

- Large fleet operations most likely have electronic monitors on trucks to record key parameters.
- Many current Fleet Management systems do not provide methods to process information obtained from fleet telematics systems
- Independent operators and small companies generally are unable to afford solutions that are on the market to date.

Figure 2: Examples of Different Vehicles Within All Truck Classes by Gross Vehicle Weight (GVW)



Note: GVW is the current standard for classification of vehicles in the United States. This report considers trucks of GVW Class 8.
Source: Goodyear 2004.

Fleet Management/Telematics Systems (FMTS) solutions can generally be broken down to one of four areas

1. **Driver behavior:** solutions that monitor driver behavior that determine fuel economy: speed, shifting and idling

2. **Vehicle performance:** solutions that monitor vehicle malfunctions and fault codes as well as maintenance intervals (usage vs time), and can also compare a vehicles' performance across benchmarked groups

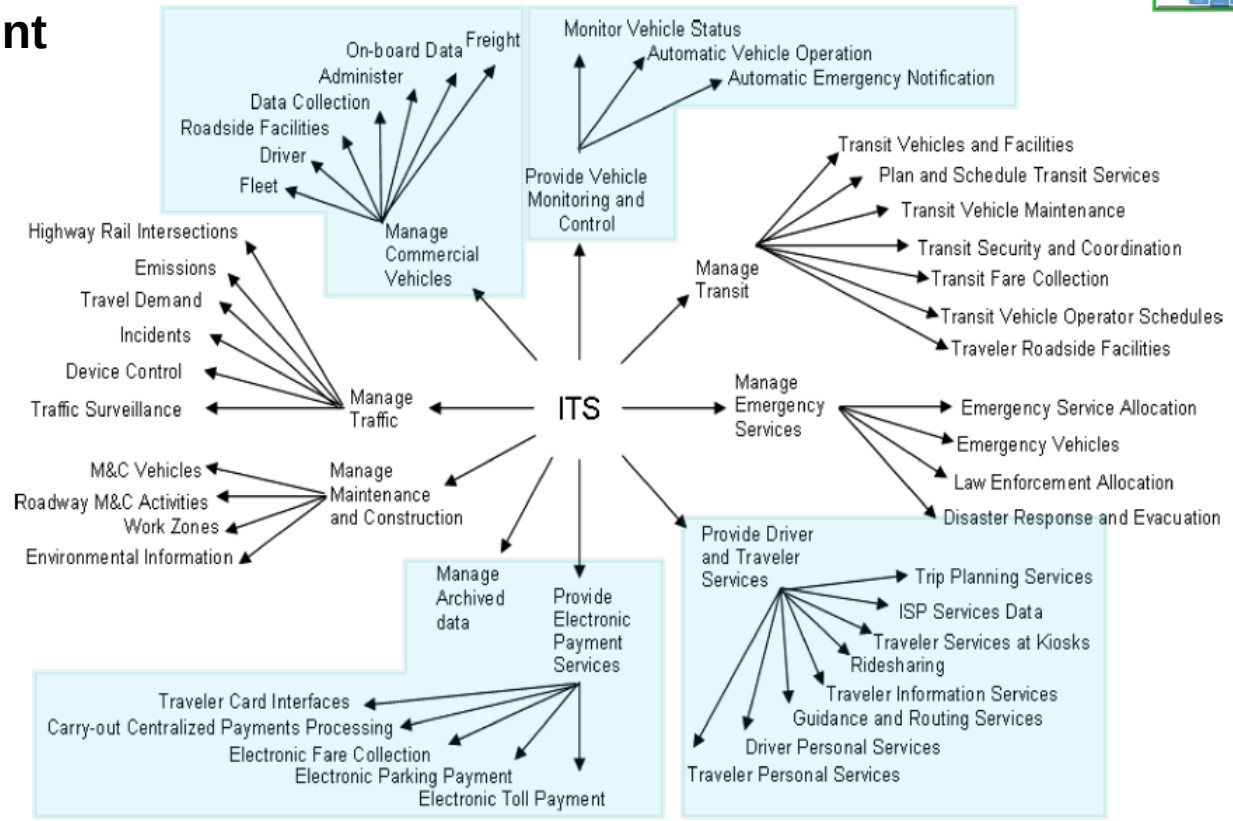
3. **Fuel theft:** FMTS solutions prevent fuel theft by empowering the fleet manager to cross-reference fuel purchase data against dispatch information systems

4. **Fuel efficiency equipment:** FMTS solutions allow fleet managers to determine their actual payback period for retrofits, including for the physical technologies discussed in this report, as well as for alternative energy sources like biodiesel.

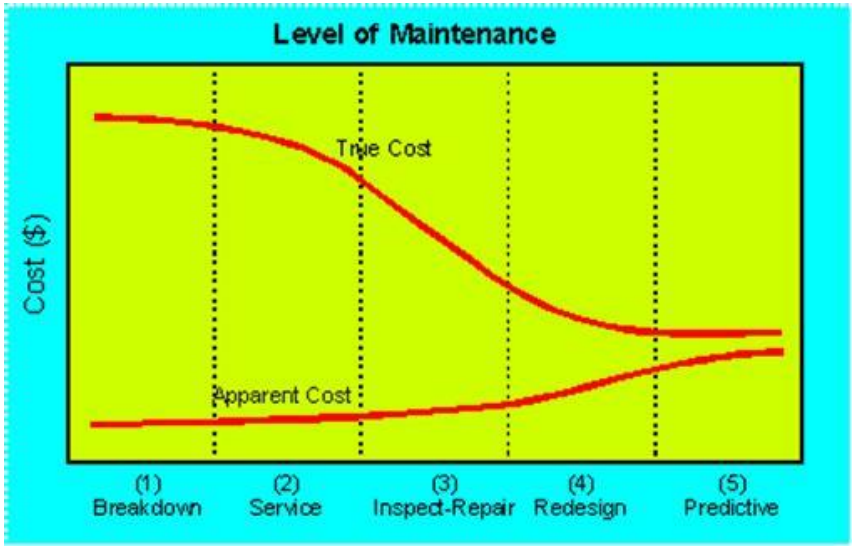
http://www.carbonwarroom.com/sites/default/files/reports/Unlocking%20Fuel%20Saving%20Technologies%20in%20Trucking%20and%20Fleets%20(Carbon%20War%20Room).pdf

Tiemac is developing turnkey a Fleet Management SaaS application to:

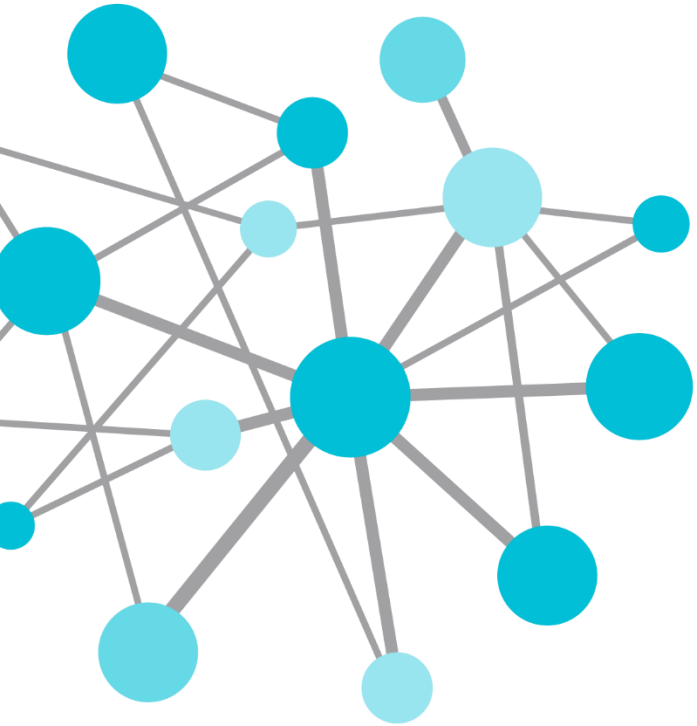
- Monitor engine diagnostics, mileage, tire pressure, ambiant air pressure, vibration, heat, cold and many other conditions.
- Enable real-time communications, not just with the driver, but with truck and cargo monitoring systems
- Provide alerts when prescribed parameters are exceeded.
- Satisfy regulatory requirements for an Electronic Onboard Equipment



Real-time data supports predictive maintenance scheduling



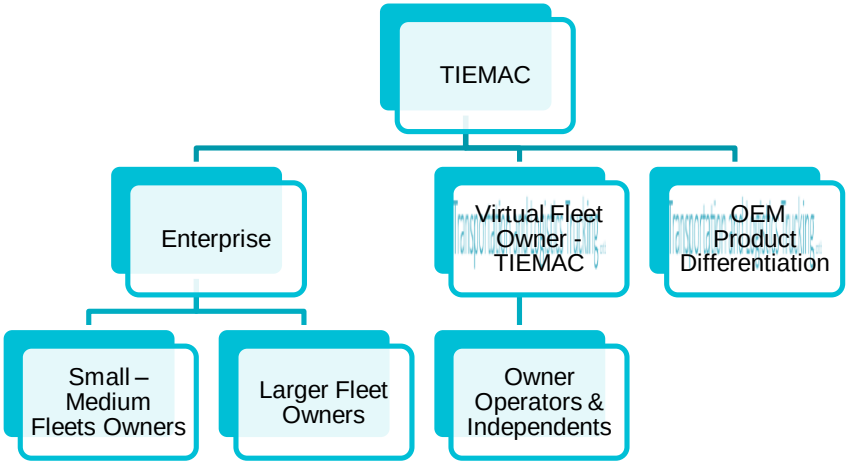
- Break-fail maintenance reduces capacity and efficiency
- True cost over time is reduced by proactive or condition based maintenance
- Real-time data supports accurate CBM scheduling



Business Model, PI System & Architecture

TIEMAC

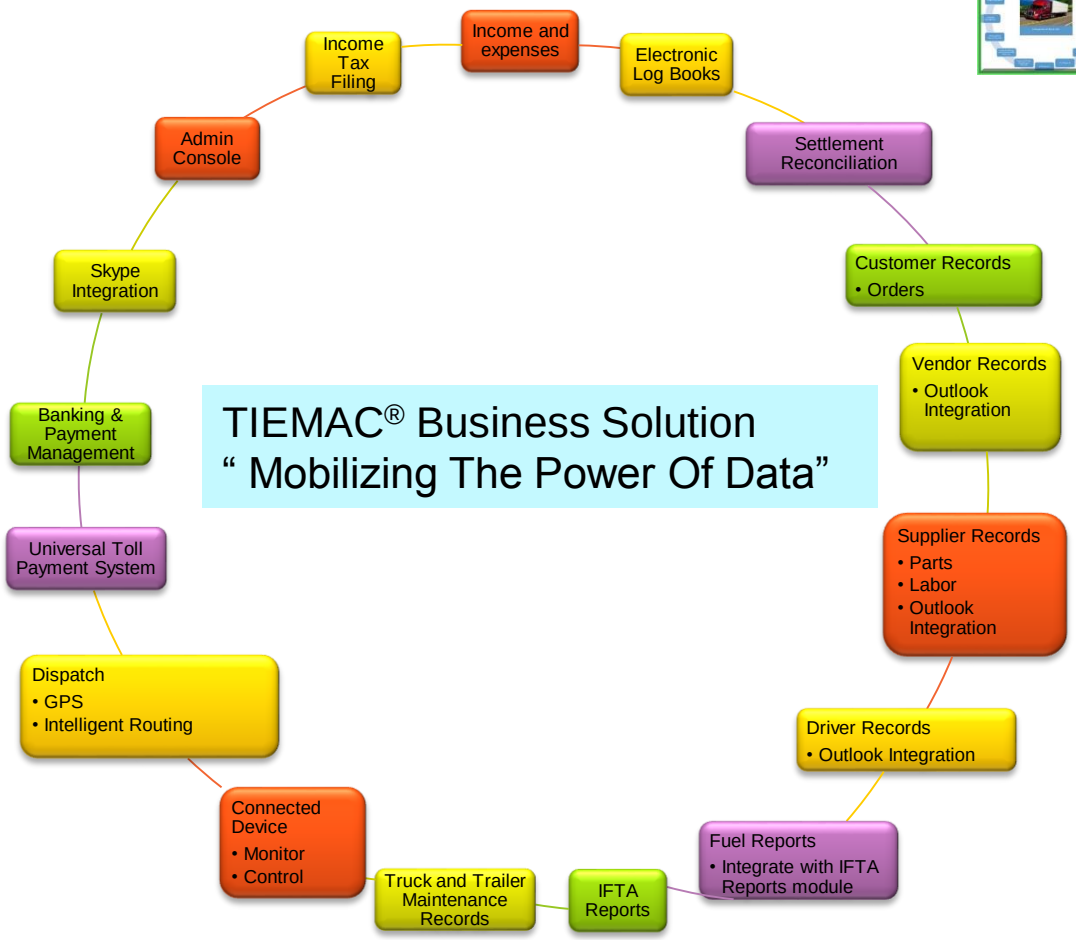
Market Segmentation by Operating Model



- A modular design allowing for scaling requirements for any business size
- Consolidated fleet management for operators that could not otherwise afford a 4G based telematics system
- The option to use desired modules of the application in conjunction with existing back office information systems
- Analytics and modeling can offer great opportunities to improve business
- The ability to integrate with other processes to have greater bottom-line impact

Tiemac Fleet Management Approach

- Extract even greater value, by sharing non-proprietary or aggregating anonymous information with Independent operators, small companies, supply chain partners or industry associations.
- Aggregate and analyze data to develop not only industry insights but also best practices, enabling Independent operators and small companies to make better-informed decisions.
- OEM's and Fleet owners can access and use asset data as their own business scenarios dictates.



OSIsoft PI System Real-time Data Management and Analysis

- **World Class Time Database Analytics**
- **TIEMAC® Cloud Based Pi to Pi Data Exchange**
- **Interfaces into top ERP systems**

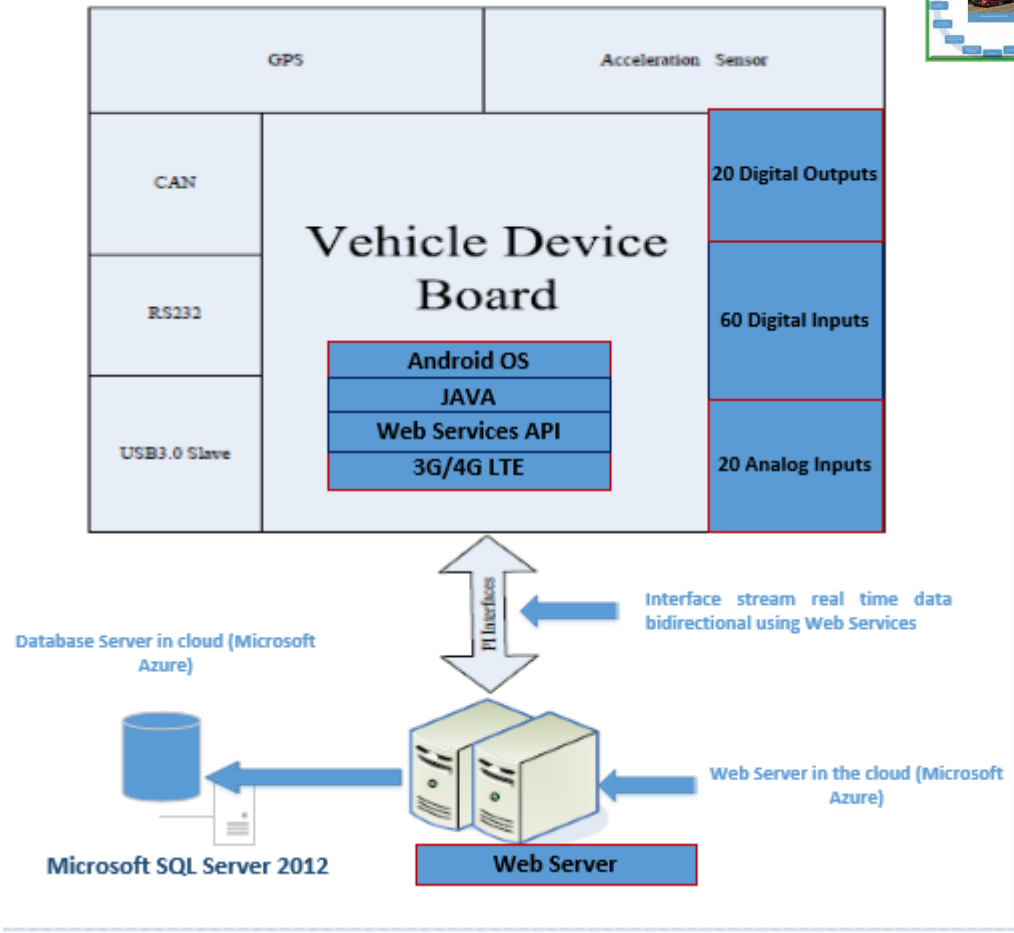
Microsoft

TIEMAC® is built on the Microsoft OS Platform

- **Solid Reliable Business Platform of choice**
- **In-cab Tablet for real-time Operational and Business interaction**

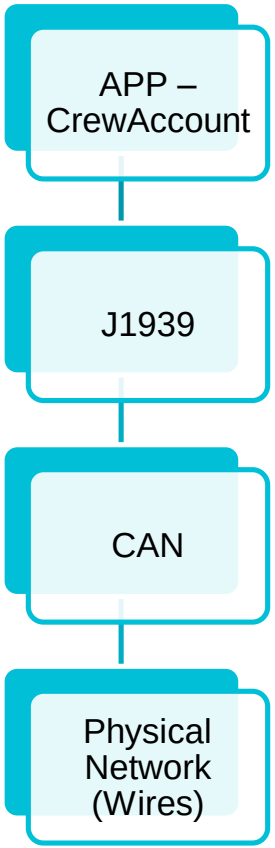
verizon

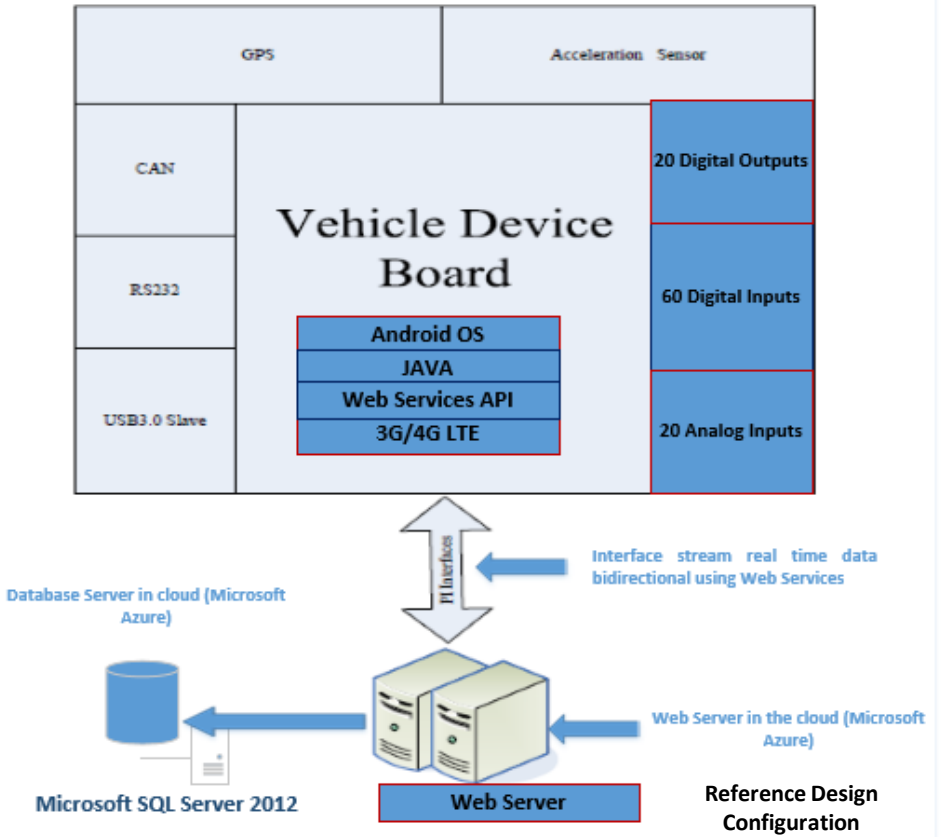
- **TIEMAC® is being brought to Market on the Premier Wireless Network**



TIEMAC®
Connected Device Architecture

- Use of Standard CAN-BUS J1939 Protocol
- Connected Device is a full computer developed based on ARM chipset running Android 4.2
- Real Time data is streamed between the connected device and the cloud using Web Services APIs

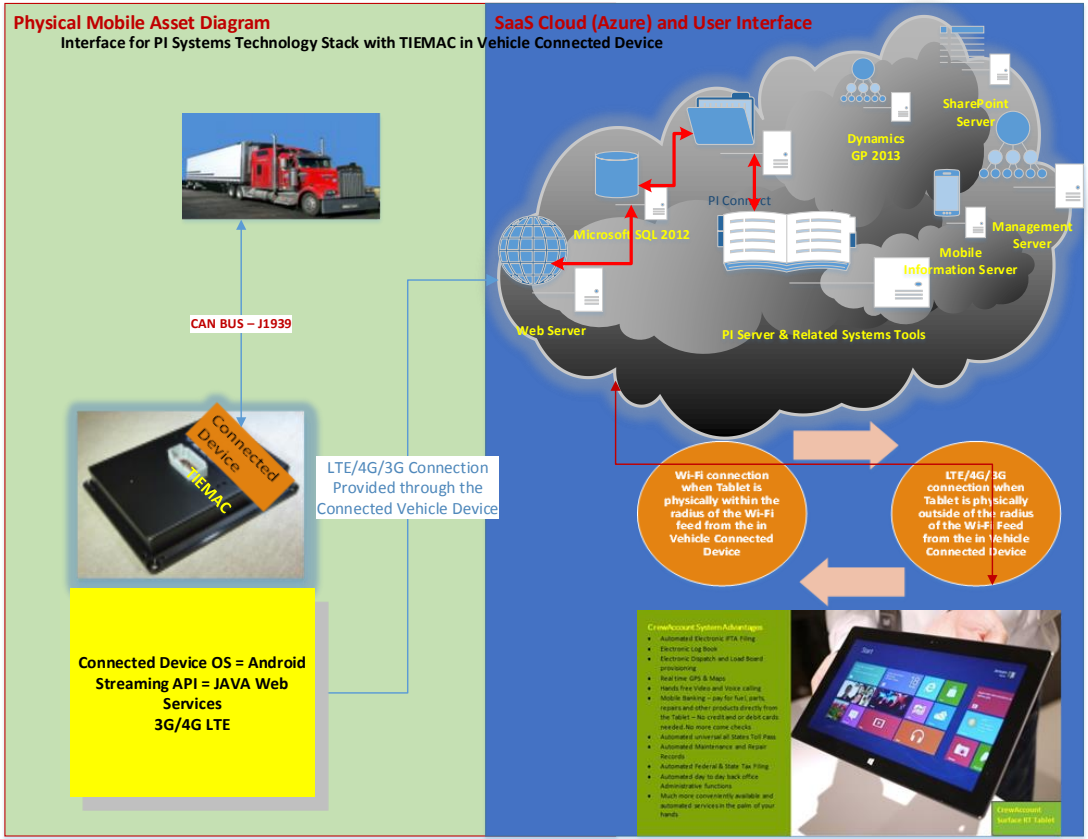




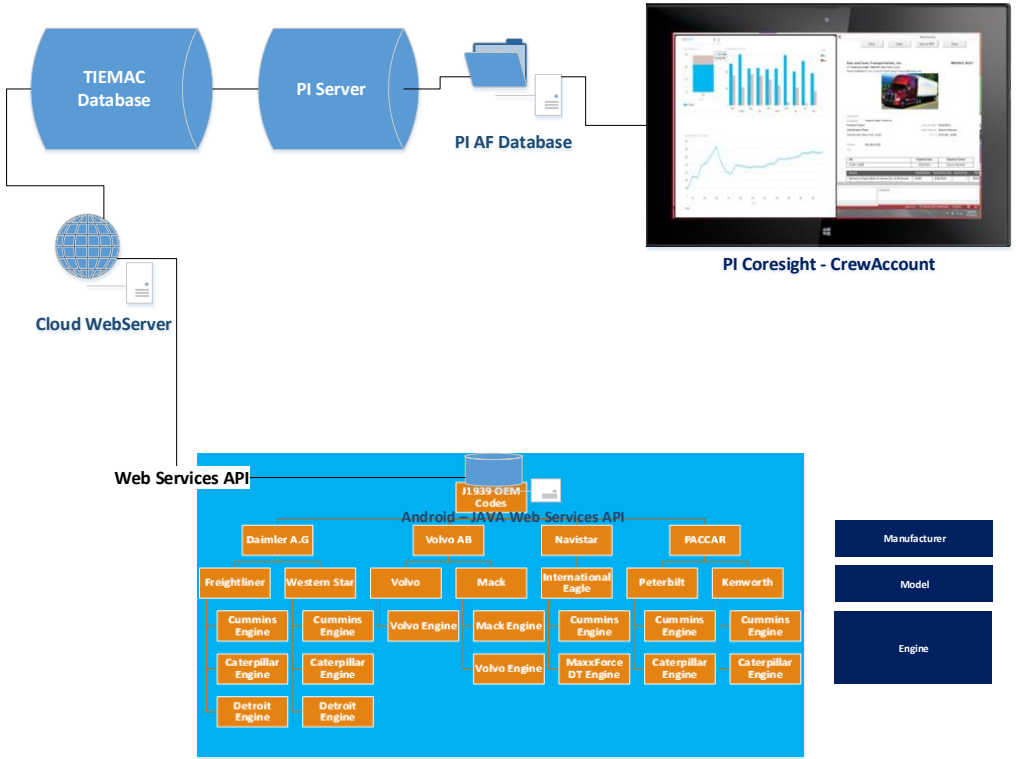
TIEMAC® Systems Configuration

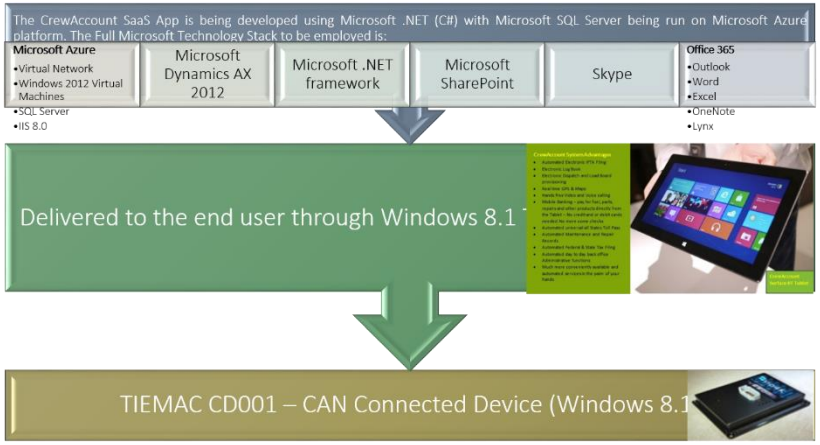
TIEMAC Solutions uses:

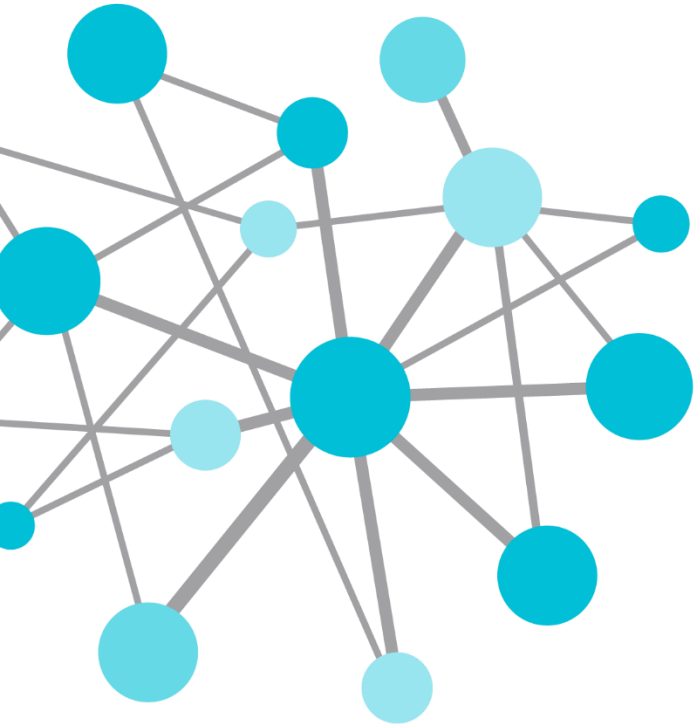
- An open Architecture
- 3G/4G Technology with redundancy built on Wi-Fi
- PI Systems technology built on Windows Azure Cloud with full scalability and redundancy
- Full productivity on board computer (tablet) with modular services delivered in real time



OSIsoft & Microsoft Technology Stack



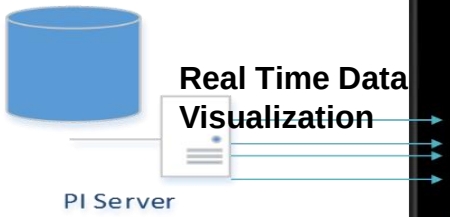




Solution, Demo & Benefits

DEMO

- DEMO 1 – Windows 8.1 APP showing PI integration with streaming data

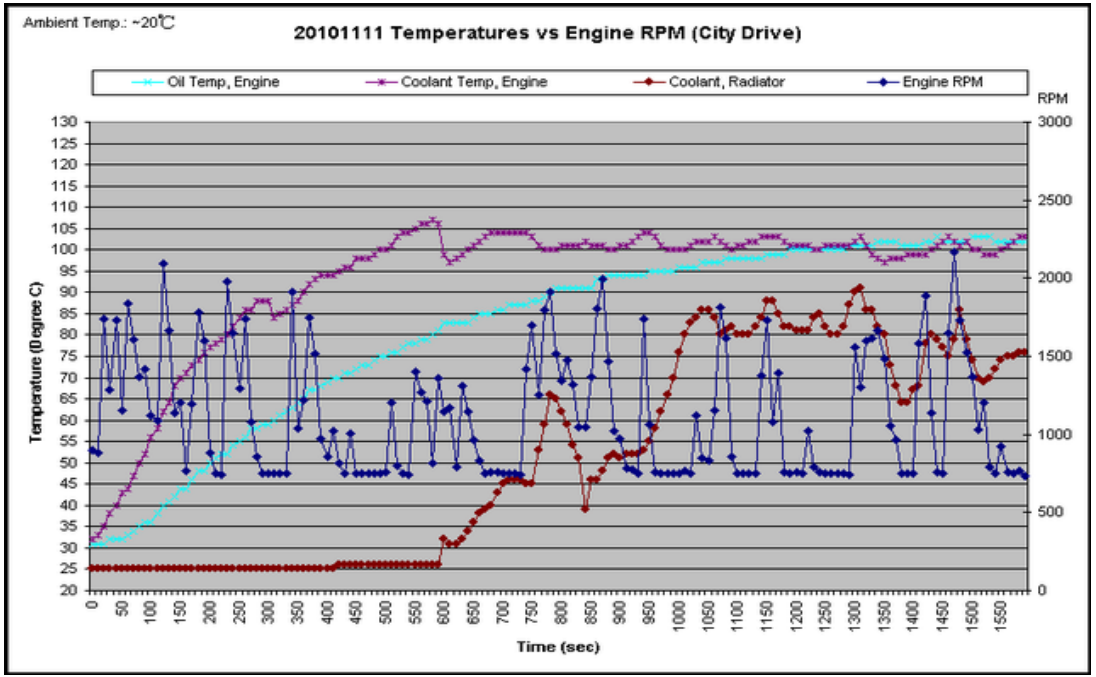


Intelligent Routing Module

Real-Time Asset Data viewed anywhere

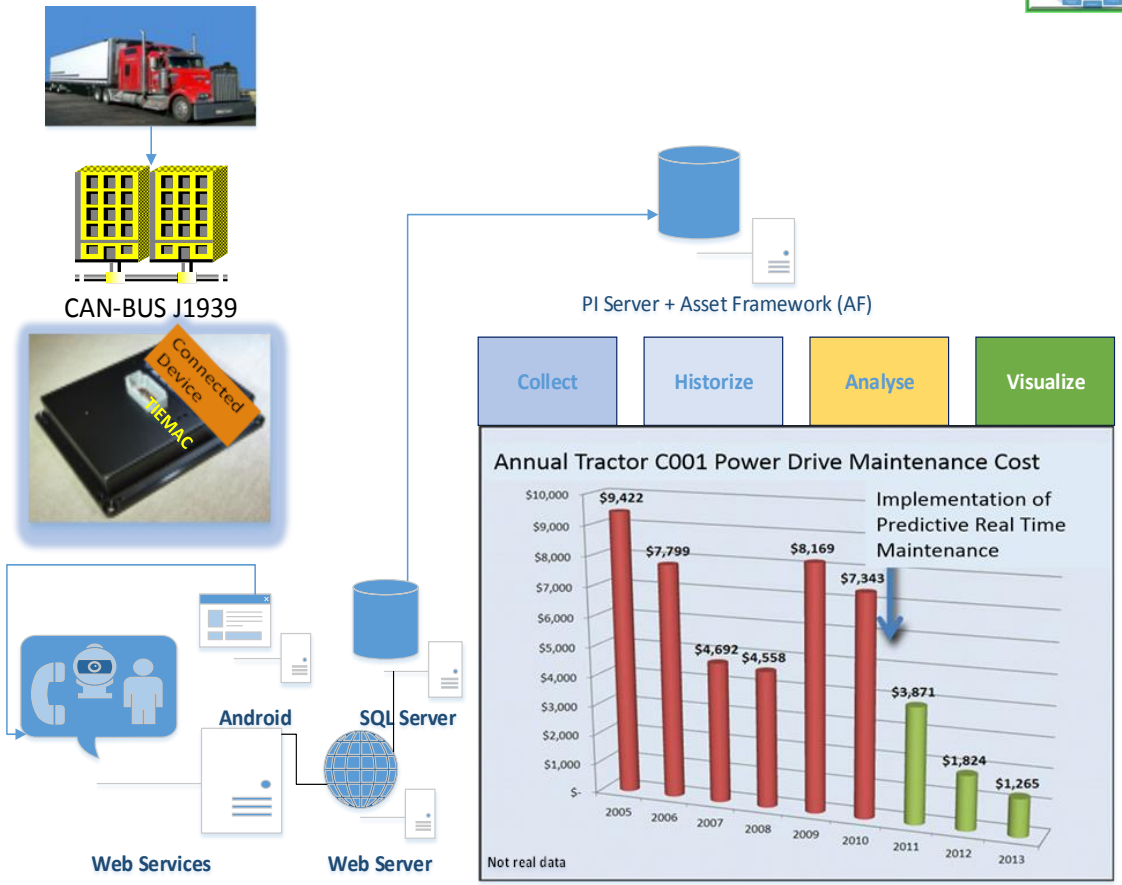
View Asset Maintenance Charts with real time performance data from anywhere on multiple devices

- ✓ Desktop PC - Backoffice
- ✓ Tablet
- ✓ Phone



TIEMAC solutions deliver real-time decision engines

The TIEMAC Connected Vehicle Solution implemented with PI Systems Technology with Real Time Data enables a decision engine to support predictive maintenance plans to maintenance cost



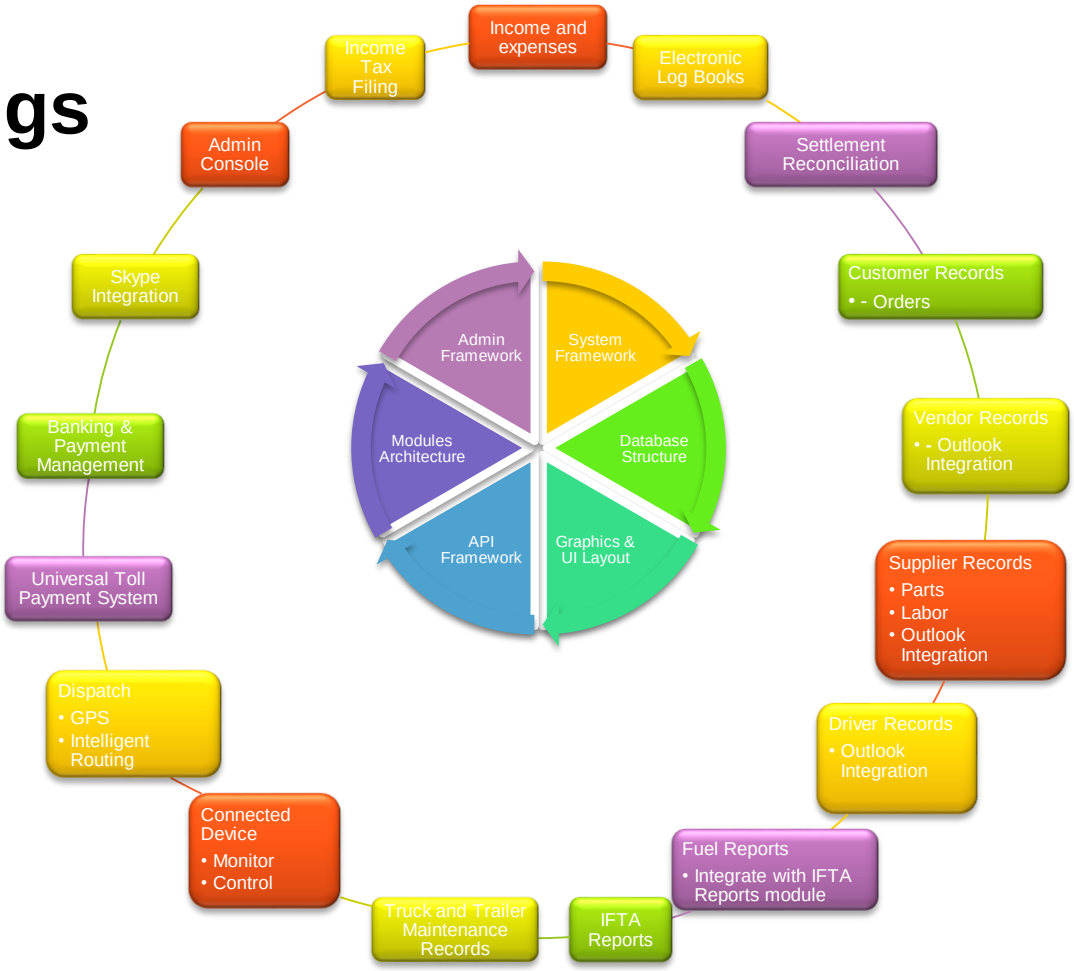
DEMO

- DEMO 2 – Windows 8.1 APP showing User Interface & Interaction

Product & Solutions Offerings

1. TIEMAC Connected Vehicle Device & PI System cloud infrastructure

2. CrewAccount - Modular SaaS Advanced Telematics Solutions & Back office Services

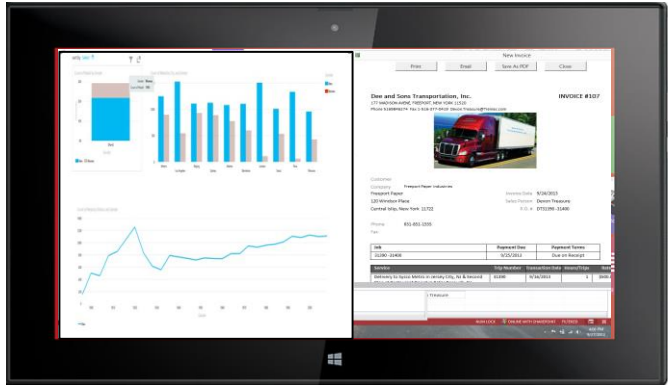


SaaS Application Delivery Schedule
- BETA Pilot Version ready July 1, 2014
- Full Production Version ready January 1, 2015

Summary

- TIEMAC Solutions Allows for:
  - Real time control and increase asset reliability,
  - Lower fuel costs and emissions,
  - Improvement of the overall efficiency and effectiveness of businesses.
  - Provision of key operational and financial management indicators and improve both driver and vehicle performance, more efficient routing, DOE compliance and condition/predictive based maintenance of any mobile asset.

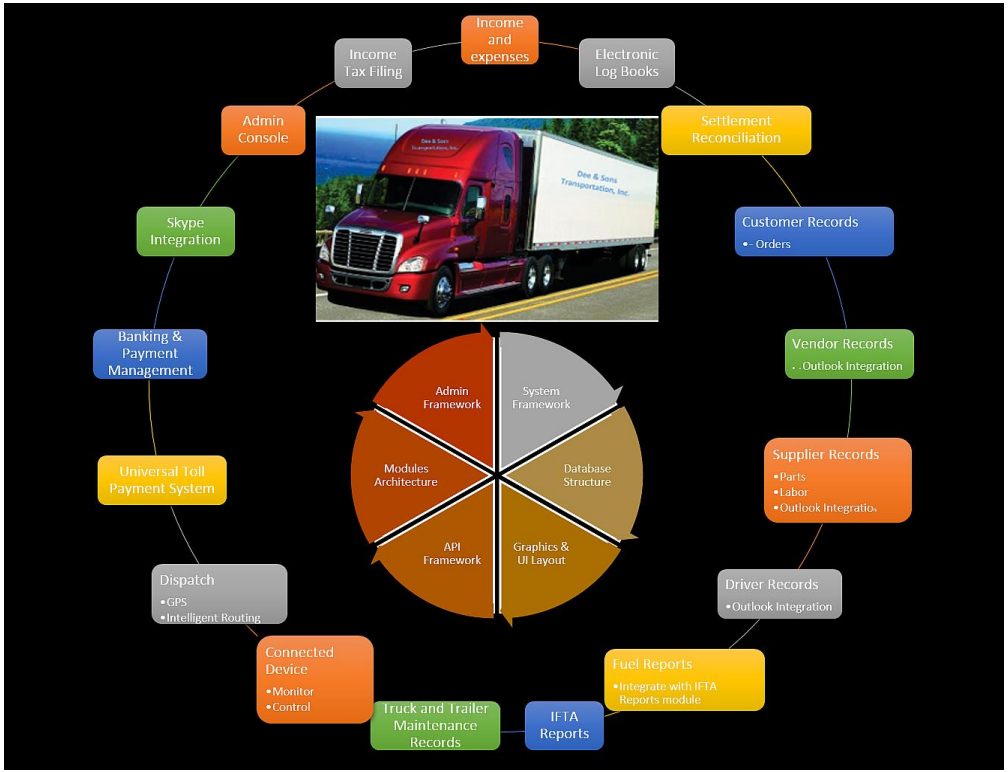
TIEMAC CREWACCOUNT VALUE PROPOSITION

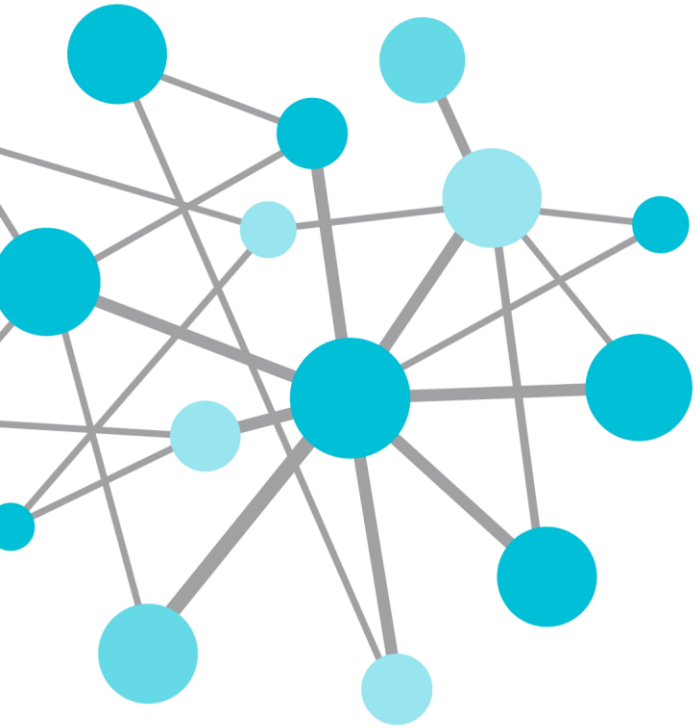


Questions & Answers

Michael Treasure

- Michael@TIEMAC.com
- Founder & CEO
- TIEMAC Corporation





THANK YOU

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