



**Go Further**

**Connected Automotive Value Chain: Shaping the FUTURE**

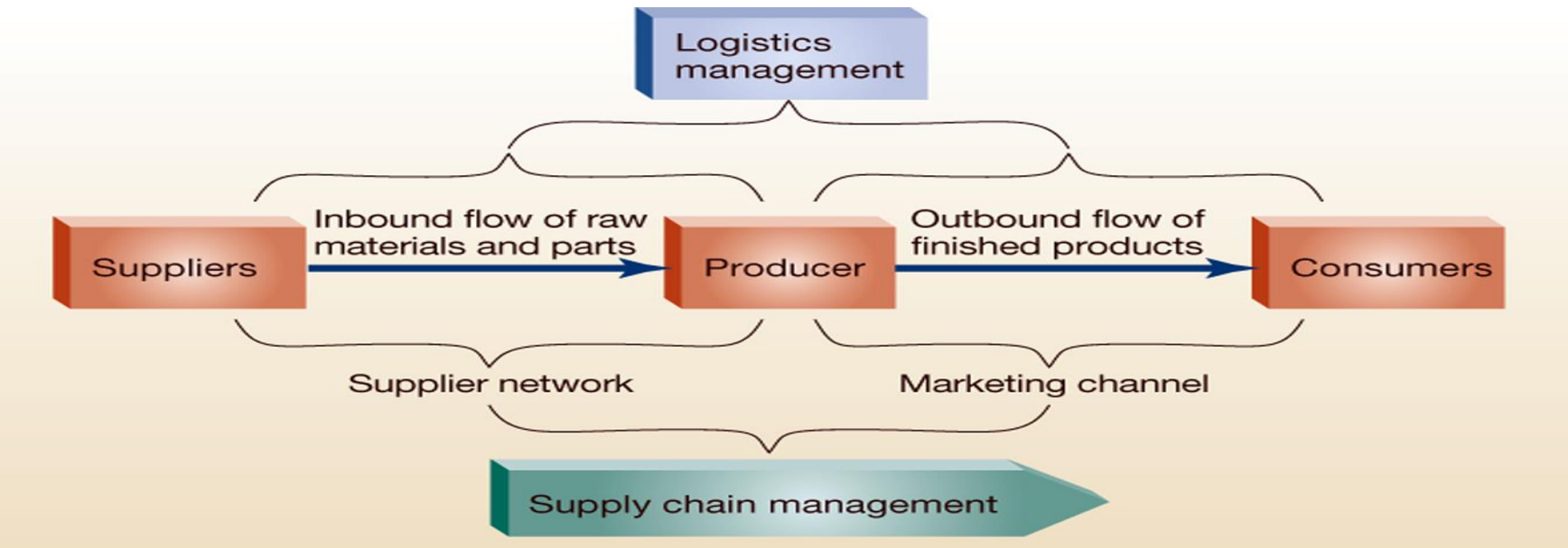
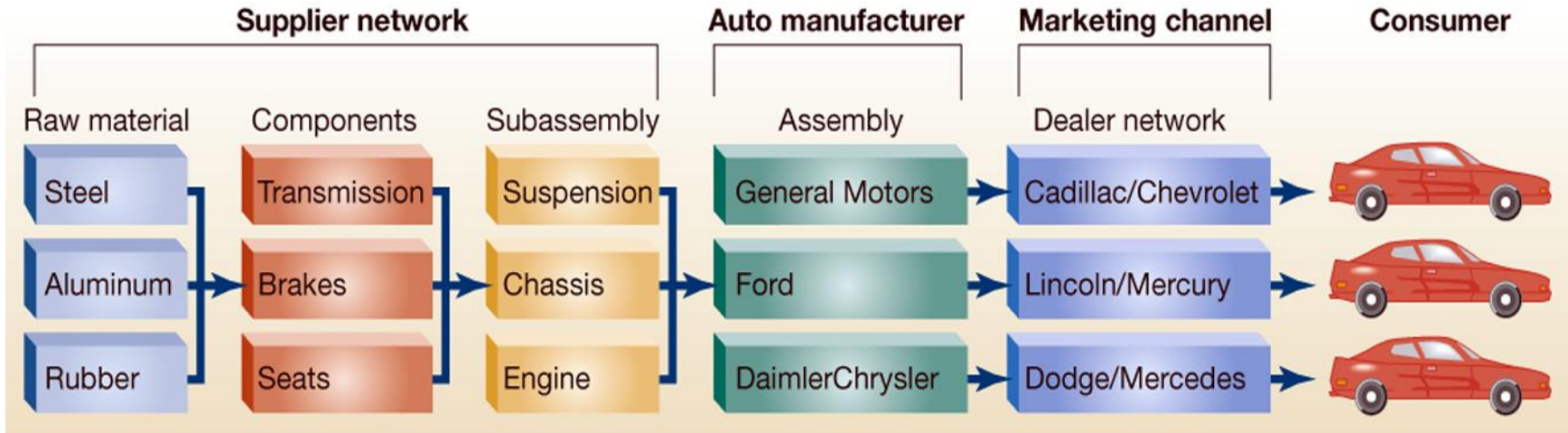
**Connected Inbound Supply Chain**

**CII Auto SCM CONFERENCE**

**20<sup>th</sup> July 2016, Chennai**

**Balakrishnan Adhi (A.S.)  
VP – Material Planning & Logistics.  
Asia Pacific.  
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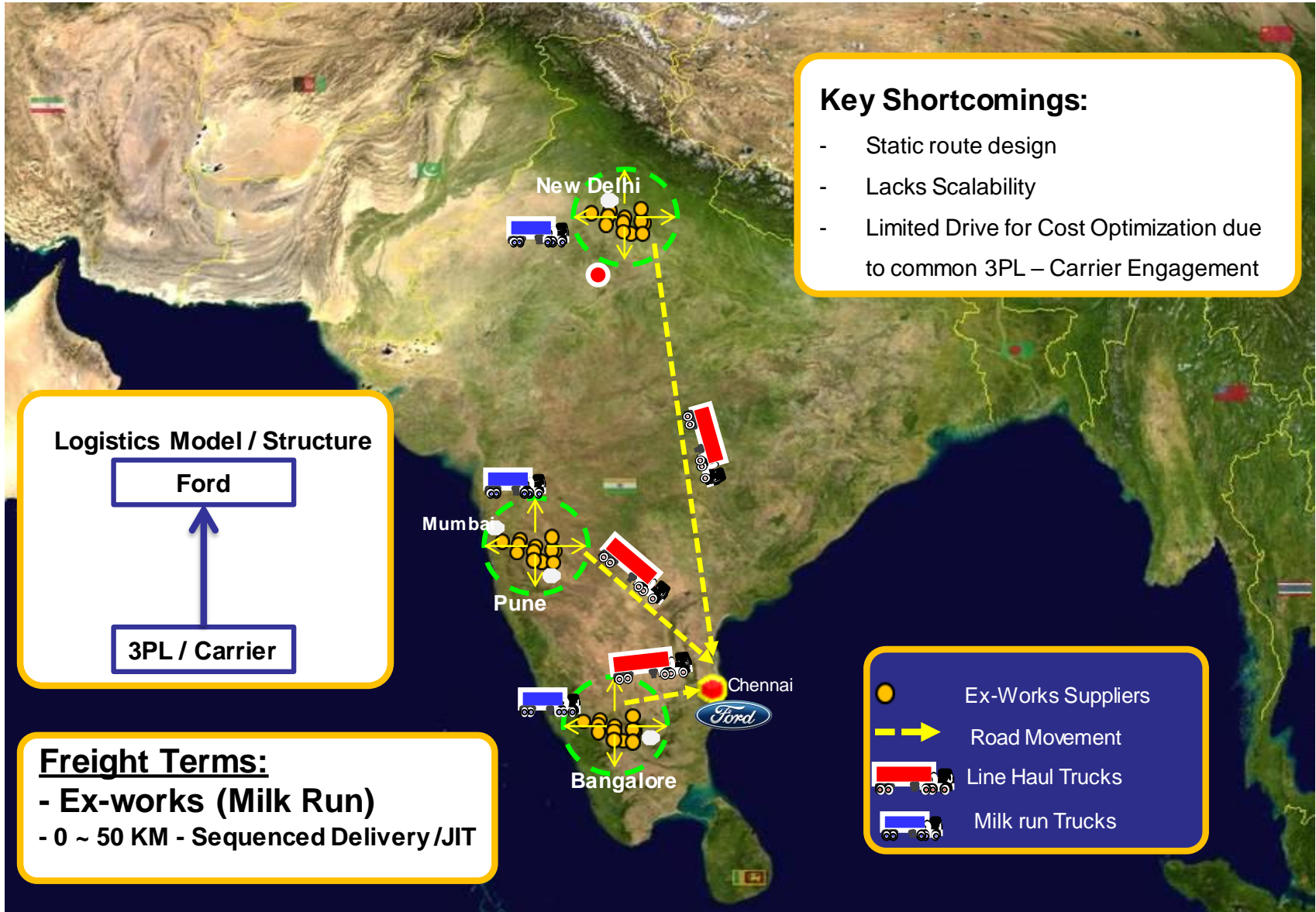
# The automotive supply chain



# Transformational Logistics Model in Ford India - 3PL to LLP Model

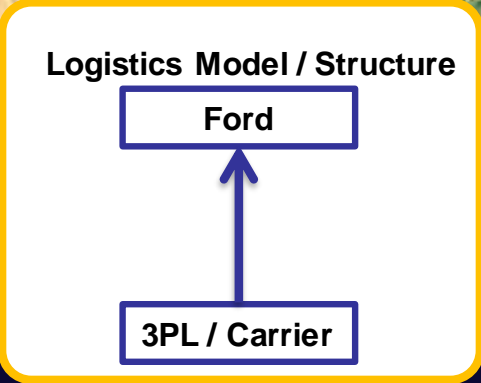


# Ford Logistics Model - 3PL Driven (1999-2013)



**Key Shortcomings:**

- Static route design
- Lacks Scalability
- Limited Drive for Cost Optimization due to common 3PL – Carrier Engagement



**Freight Terms:**

- Ex-works (Milk Run)
- 0 ~ 50 KM - Sequenced Delivery /JIT

● Ex-Works Suppliers  
→ Road Movement  
🚛 Line Haul Trucks  
🚛 Milk run Trucks

**Ford Logistics Model is Ex-Works collection since inception**

# LLP Model - 2 Tier Structure (2014 Onwards)

## Lead Logistics Provider (LLP) Model – Key Highlights / Deliverables

- **Network Design** & Optimization.
- **Dynamic Planning** through **Multi Carrier** Option.
- Milkrun **Synergy** for 2 Plant Scenario.
- **Freight cost / Service Driven** Carrier selection (Based on Route strength)
- Equipment / Truck Size **Standardization**.
- **KPI Driven** Carrier Management
- **Total Logistics Cost** Management and Continuous Improvement
- LLP Engagement in **Forward Model Logistics Planning / Costing** (48 Months in advance)



## Carriers / Trucking Companies

- **Flawless Logistics Execution** (based on LLP Design / Planning).
- Management and Control of **Consolidation Centers**.
- Strict **Window Time** Adherence / **Alert Mechanism**.
- Driver Force - **Disciplined / Trained & Cared for**.



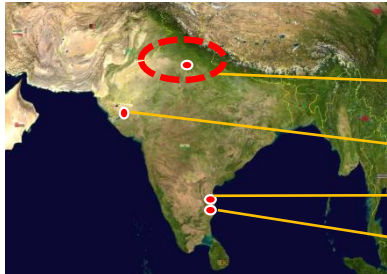
**Ford India has Introduced LLP to bring Synergies & Maximize Efficiencies in 2 plant Scenario**

- **Increase Cube utilization %, Reduce freight cost, Reduce Carbon footprint**

# Logistics Model in Ford India – LLP Driven (2014 Onwards)



## Illustration of Dynamic Route / Pickup Planning

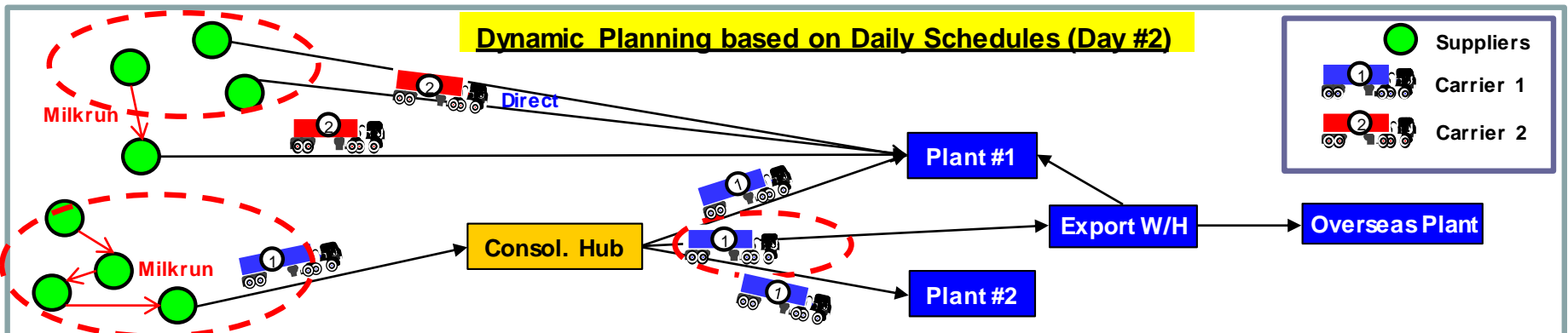
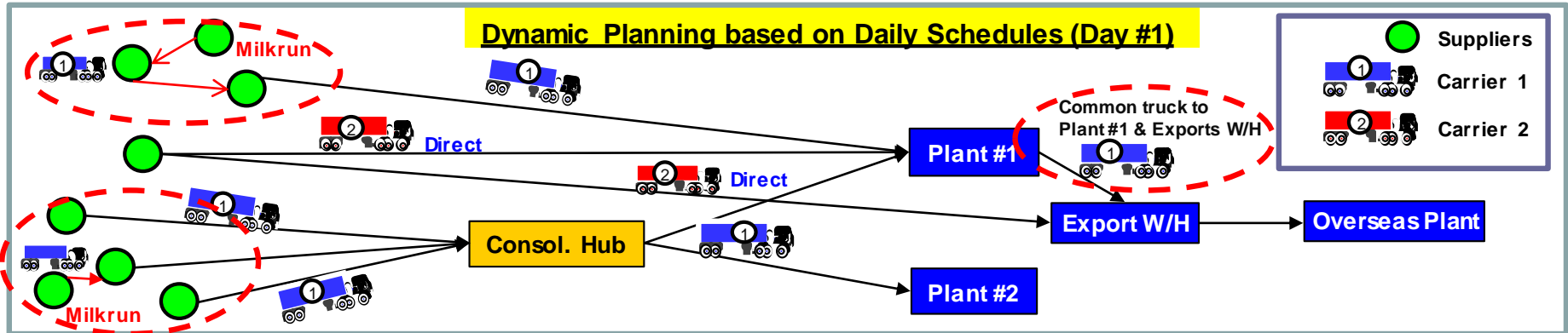


North Consolidation Center & North Sector Suppliers

Plant #2

Exports W/H

Plant #1



Dynamic Route Planning provides Greater Scale & Opportunity to further Optimize Logistics

# Role of Big Data Analytics

“ **Big data analytics** is the process of examining large **data** sets containing a variety of **data** types -- i.e., **big data** -- to uncover hidden patterns, unknown correlations, market trends, customer preferences and other useful business information”.

# ***Big Data Analytics in Automotive & Logistics Sector***

- China’s automotive industry is slowing down,” said Xu Guangqing, managing director of logistics engineering and operations at SAIC General Motors (SGM), GM’s largest joint venture in China. “For automotive logistics, close and fierce competition will be a permanent thing, which is why we have to look to innovations and technology, such as big data analytics and further automation, to reduce costs.

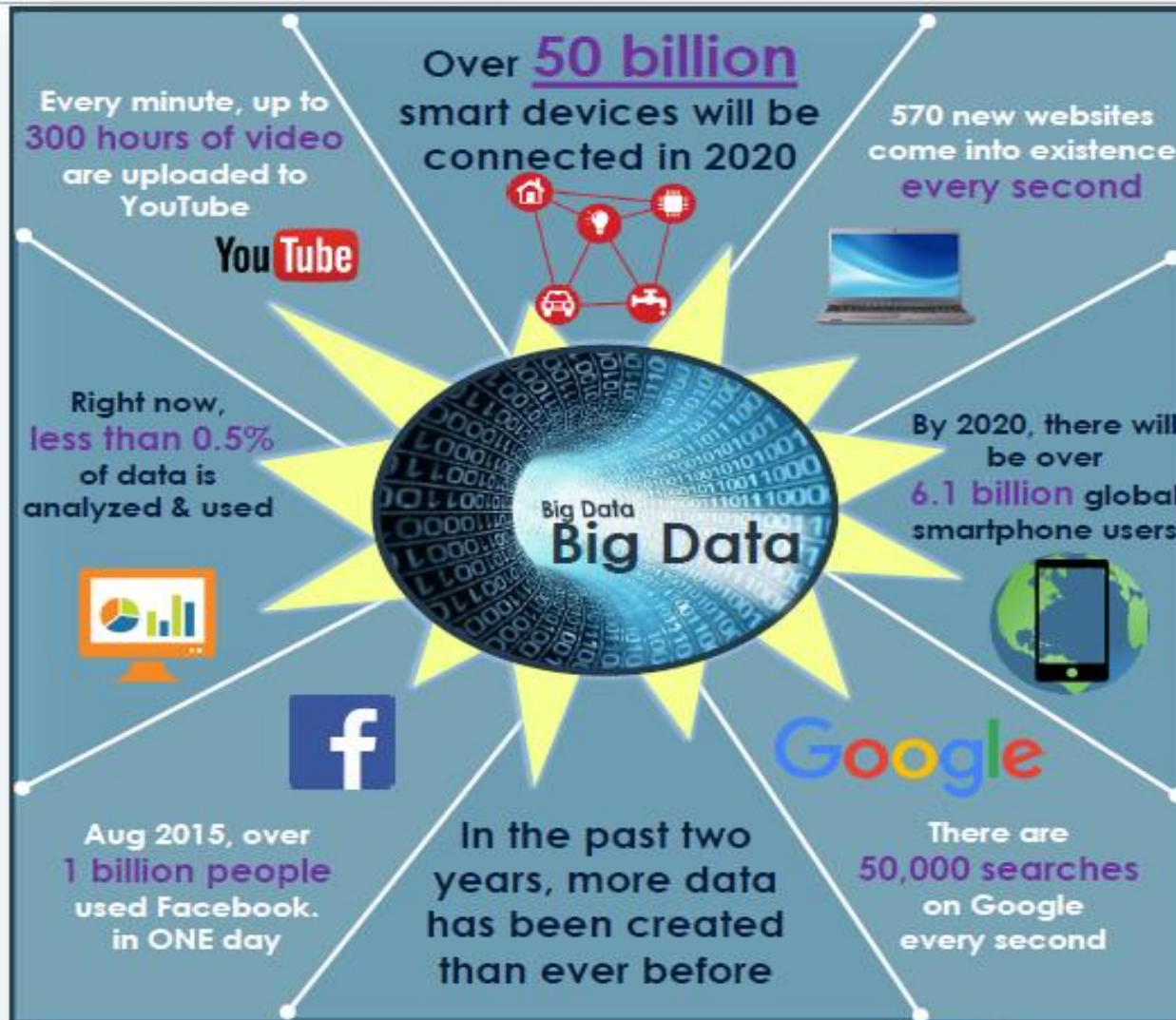
Source: <http://automotivelogistics.media/events/china-conference/china-conference-2016/report>

- The potential for Big Data in the logistics industry had previously been highlighted in our highly acclaimed Logistics Trend Radar – a dynamic, living document designed to help us and our customers derive new strategies and develop more powerful projects and innovations.

Source: [http://www.dhl.com/en/about\\_us/logistics\\_insights/dhl\\_trend\\_research/bigdata.html#.V423rPI9670](http://www.dhl.com/en/about_us/logistics_insights/dhl_trend_research/bigdata.html#.V423rPI9670)



# THE BIG DATA EXPLOSION IS ACCELERATING



# ***Data Analytics and Supply chain upgrades in Ford***

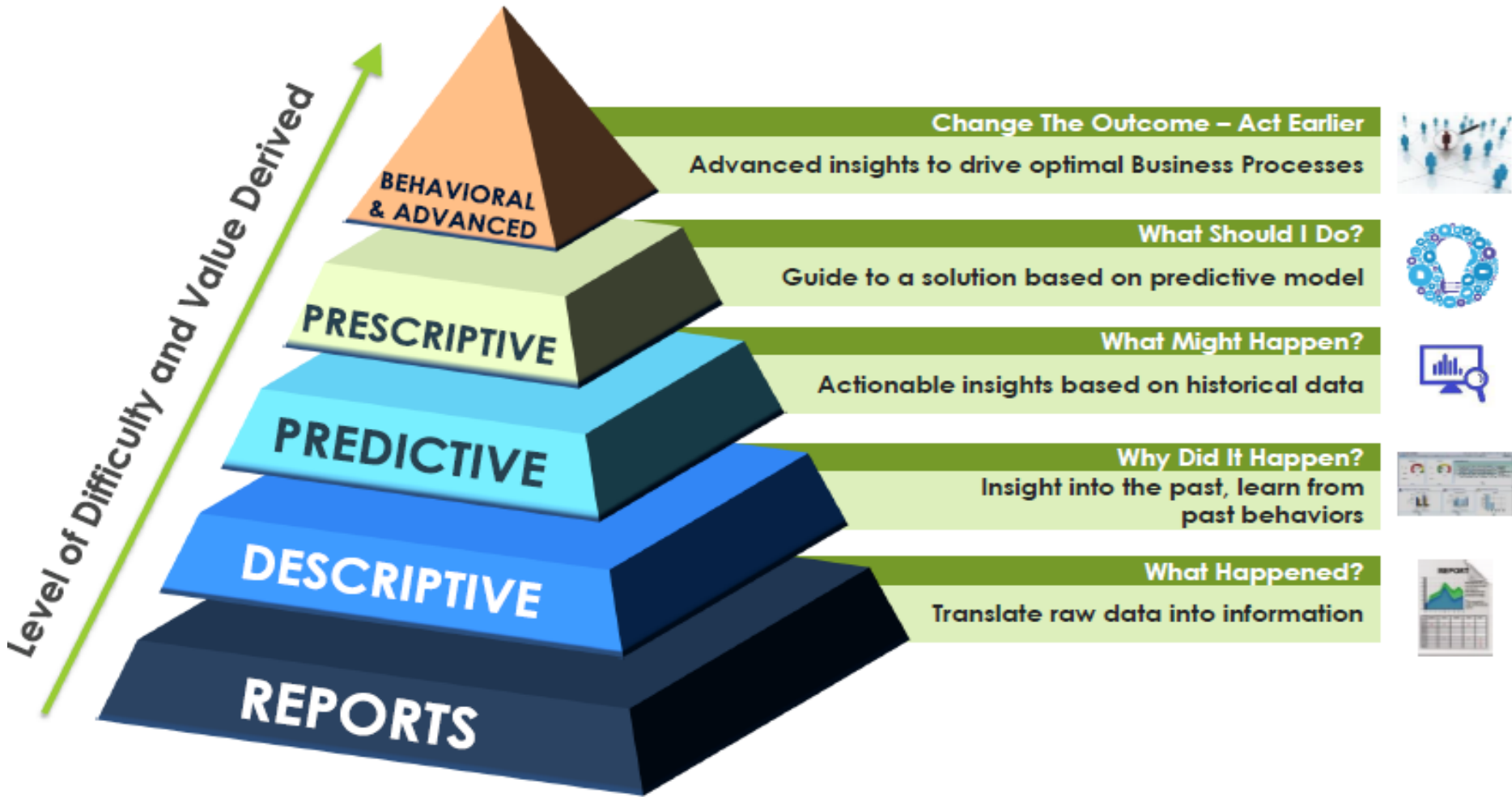
- The vehicles we make are becoming more connected than ever, with advanced technologies that link vehicles to each other and to the Internet. From in-vehicle sensors to wireless connections, such technological advancements are helping Ford become a more consumer-centric business, giving us new insights into driver behavior.
- Ford uses analytics widely across our company, including in our research, product development, manufacturing, **supply chain**, marketing and sales, finance, purchasing, information technology and human resources functions.

Source: <https://corporate.ford.com/microsites/sustainability-report-2014-15/mobility-analytics.html>

- Ford is rolling out advanced global inventory and demand management tools in pursuit of greater efficiency in logistics and service - roll out of a global SAP to cover service parts planning and purchasing, a warehouse management system and distribution to dealers.

Source: <http://automotivelogistics.media/intelligence/ford-part-3-supply-chain-upgrades>

# DEFINING THE ANALYTICS JOURNEY



# ***Analytics Projects Related to Supply Chain – Shape the FUTURE...***

<b>Project</b>	<b>Content</b>
<b>1 a) Material Freight</b>	Optimize Rates, Routes, Bundling of Orders, Lane Optimization (Balancing), etc.
<b>b) Packaging</b>	Truck/Container utilization, Returnable Rack etc.
<b>c) Internal Supplier Logistics</b>	Freight, route, duty, ... per unit, per part,.. for sheet metal, powertrain parts study and optimization.
<b>d) Premium Freight</b>	Premium cost analysis
<b>2 Custom &amp; Duty</b>	Material Duty data analysis to pass audits, find overpayments, automate manual process, and improve forecasting
<b>3 Ordering &amp; Scheduling, Vehicle Freight</b>	Optimize order schedule, sequence, economic order quantities, vehicle ETA, vehicle tracking, etc. Possibly analyze rates, routes, and similar playbook used on inbound.
<b>4 Inventory Optimization</b>	Inventory cost management and forecast

**Innovation Opportunities - Cost Saving & Improve Business Processes**

## 2016 Auto SCM conference themes around a Connected Automotive Value Chain:

- ✓ Emerging customer trends (multi-channel behavior, evolved service expectations etc.) and key implications for the automotive value chain
- ✓ Trade-offs between service levels and cost-to-serve to address changing customer needs
- ✓ **Use cases and benefits of improved connectivity across the automotive ecosystem → 3 PL to LLP (Inbound logistics)**
- ✓ **Enablers to achieve better connectivity (partnerships, technology, resources) → Data Analytics**



## OPENING THE HIGHWAYS TO ALL MANKIND

Back of all the activities of the Ford Motor Company is this Universal idea — a whole-hearted belief that riding on the people's highway should be within easy reach of all the people.

An organization, to render any service so widely useful, must be large in scope as well as great in purpose. To conquer the high cost of motoring and to stabilize the factors of production — this is a great purpose. Naturally it requires a large program to carry it out.

It is this thought that has been the stimulus and inspiration to the Ford organization's growth, that has been the incentive in developing inexhaustible resources, boundless facilities and an industrial organization which is the greatest the world has ever known.

In accomplishing its aims the Ford institution has never been daunted by the size or difficulty of any task. It has spared no toil in finding the way of doing each task best. It has dared to try out the untried with conspicuous success.

Such effort has been amply rewarded. For through this organization, the motor car which is contributing in so large a measure toward making life easier, pleasanter and more worth while has been made available to millions.

The Ford Motor Company views its situation today less with pride in great achievement than with the sincere and sober realization of new and larger opportunities for service to mankind.

*Ford Motor Company*

*Owning and operating coal and iron mines, timber lands, sawmills, coke ovens, foundries, power plants, blast furnaces, manufacturing industries, lake transportation, garnet mines, glass plants, wood distillation plants and silica beds.*



**Go Further**