



DHL GLOBAL TIRE LOGISTICS

Solution Fair – Thierry Le Floch, VP Tire Subsector Head



Today's journey

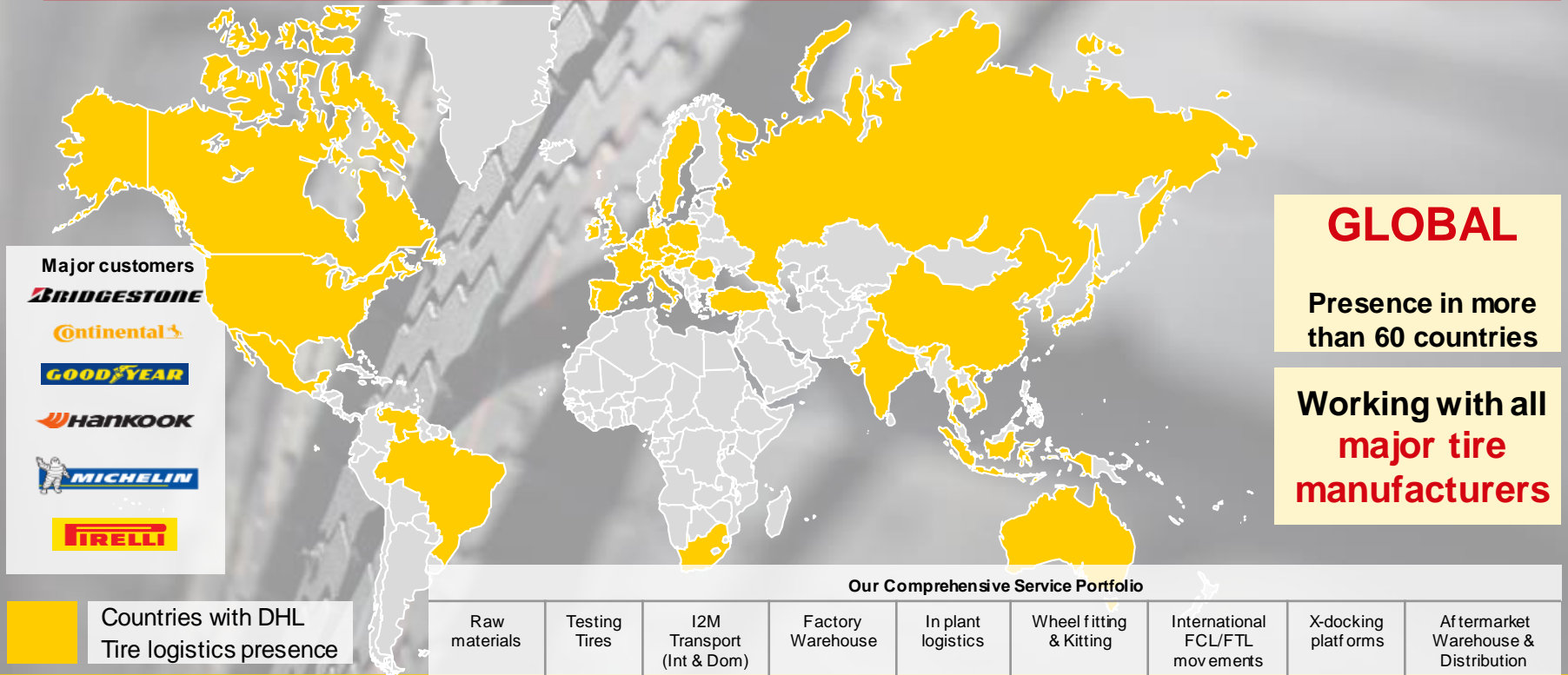


1 DHL Automotive – A Global Tire Logistics Leader

2 Driving the Digital Tire Supply Chain of the Future

3 Supporting your Tire Supply Chain in South Africa

DHL Automotive – A Global Tire Logistics Leader



We provide **adapted Value Propositions** to our customers

Passenger Vehicles



Evolutive product responding to increasingly **demanding and connected** customers, leading to **Supply Chain continuous shift**

Commercial Vehicles



A **working tool** requiring **high logistics service levels** and having a **lower production output** compared to industry standards

Expert
Community

Industry
Knowledge

Value
Propositions

Voice
of the
customer

Targeted
Approach

Component Manufacturers



High **supply chain complexity** due to **product variety**, complicated **supplier landscape** and **customer dependency**

Tires



A product with **very specific logistics requirements**, mainly present in the **aftermarket** and subject to **high seasonality**

We can support you in all your tire business segments globally

▼ Off The Road Tires

**Warehousing
and transport
of OTR tires
in India**



▼ Racing Tires

**Nascar Racing
Tire storage
and transport
in the US**



▼ Aviation Tires

**Aviation tires
transport in
the
Netherlands**

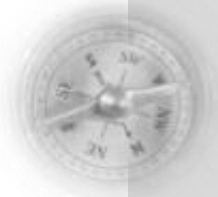


▼ Passenger Car Tires and Wheels

**Tire & Wheel
mounting in
Sweden**



Today's journey



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Tire Industry Trends & Dynamics



MARKET CHANGES

Environmental regulations push premium tires

8.7%

Premium & performance tire market is **growing** globally at 8.7% - more than **2x** faster than **standard** tires

>17 inches

17" or larger tires have a **huge impact** of +17\$ GP per tire on **profit** compared to smaller sizes



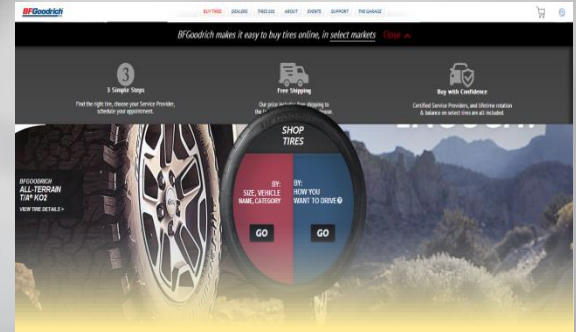
TECHNOLOGY



Intelligent tire sensors can spin-off into **mobility & fleet management services** by monitoring various data to support autonomous driving



Ongoing digitalization of the tire supply chain by leveraging emerging automation solutions



CONSUMER BEHAVIOR

20%



Online tire sales is estimated to reach approximately **20% of the global market by 2020**





Consumers' buying behavior becomes more digital, has emerged across multiple geographies including emerging markets

Digitalization is a huge opportunity for the tire supply chain

Inventory Carrying Cost

- SC optimization:  ~25%
- Digitalization:  ~35-50%

Lost Sales

- SC optimization:  ~3-10%
- Digitalization:  ~65-75%

Enabling Technologies for Supply Chain Digitalization



Big Data



Blockchain



Internet of Things (IoT)



AI/Machine Learning




Robotics




Augmented & Virtual Reality

Logistics Cost

- SC optimization:  ~5-10%
- Digitalization:  ~15-50%

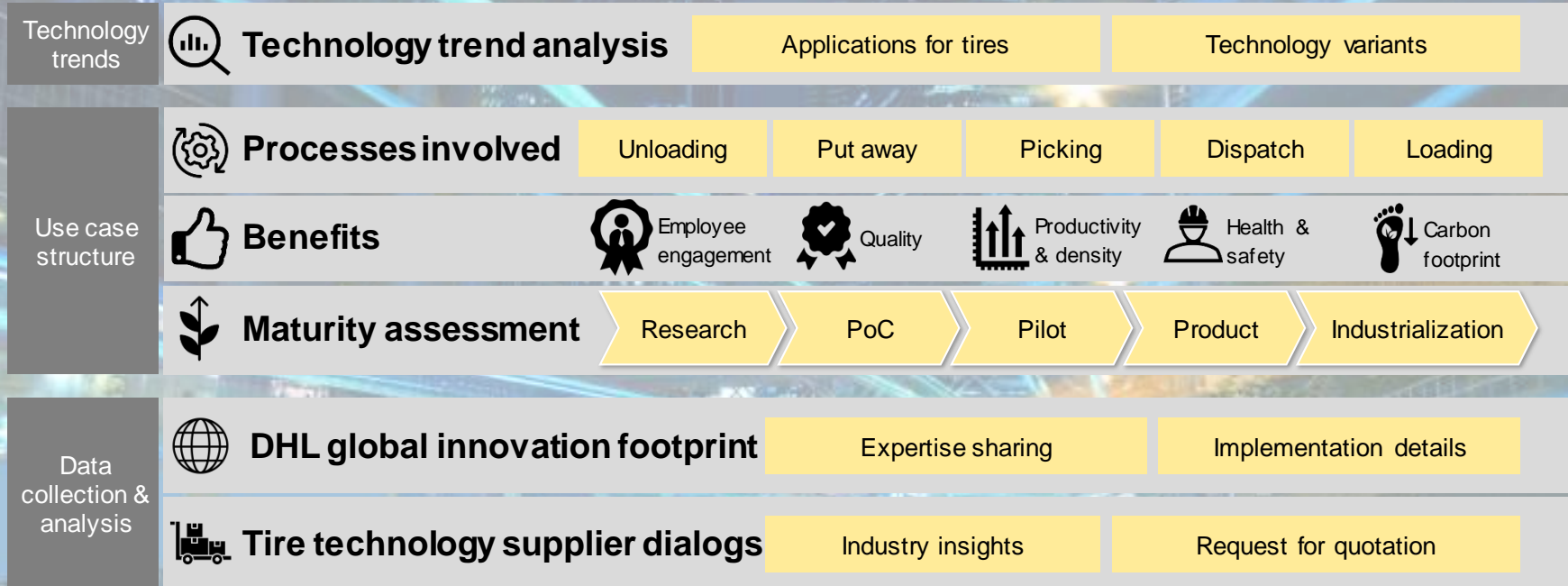
Lead time

- SC optimization:  ~10-25%
- Digitalization:  ~30-40%




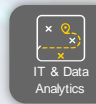






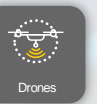
Source: DHL

Our Tire Warehouse of the Future Approach

We built a technology assessment framework to structure our approach



DHL's Digital Warehouse of The Future Vision

From outside the warehouse... 				... To inside 					
	 Autonomous vehicles	 IT & Data Analytics	 IoT & wearables	 Blockchain	 Automation	 IoT & wearables	 MHEs	 IT & Data Analytics	 Drones
Short term		<ul style="list-style-type: none">• Resilience 360• Freight visibility platforms• Standard TMS	<ul style="list-style-type: none">• End-to-end asset tracking• Device based freight visibility		<ul style="list-style-type: none">• Conveyors for loading & unloading• Assisted picking	<ul style="list-style-type: none">• Ring scanner• Exoskeletons• MHE Collision avoidance	<ul style="list-style-type: none">• Quickcharge batteries	<ul style="list-style-type: none">• WMS driven RF operations• OMS• Velocity slotting	<ul style="list-style-type: none">• Security rounds
Medium term	<ul style="list-style-type: none">• Truck platooning	<ul style="list-style-type: none">• Advanced predictive analytics	<ul style="list-style-type: none">• Driver monitoring devices	<ul style="list-style-type: none">• SC transparency & traceability	<ul style="list-style-type: none">• Gantry sorter• Automated VNAs	<ul style="list-style-type: none">• Smart yard management	<ul style="list-style-type: none">• Autonomous ground transport• Fuel cell	<ul style="list-style-type: none">• LMS• YMS	<ul style="list-style-type: none">• Inventory cycle counting
Long term	<ul style="list-style-type: none">• Autonomous shuttles			<ul style="list-style-type: none">• Leaner global freight flows• Smart contracts	<ul style="list-style-type: none">• Fully automated warehouse	<ul style="list-style-type: none">• Real time ops tracking	<ul style="list-style-type: none">• Autonomous picking & putaway		

Note: Elements in bold are covered in this session

Technology deep dive example

Different types and features available for tire conveyors

Conveyor types

1



Telescopic mobile conveyor

2



Telescopic fixed conveyor

3



Sorting conveyor

Added features

A



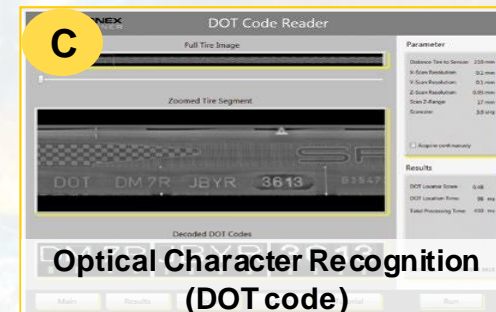
Automated Labeling

B



Automated Scanning

C



Optical Character Recognition
(DOT code)

Easy-to-Implement Innovations Providing Fast Returns on Investments

Loading / Unloading Conveyor

- Improved safety for employees thanks to less manual handling
- Improved productivity (around 30%)
- Opportunity to implement additional features like scanners or labeling machines



Ring scanner

- Allow tire handling with two hands
- 10-15% improvement in productivity
- Cheaper than regular handheld scanners



End-to-End asset tracking enables real time shipment visibility

A worldwide **real-time, end-to-end asset tracking** solution which relies on a cloud-based platform to be **easily scalable on-demand**.

Solution

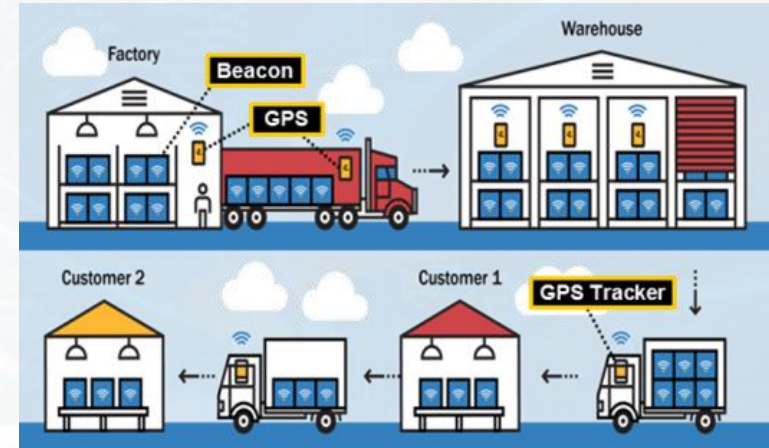
- Modern tracking & tracing by active devices (GPS & BLE) including comprehensive set of data
- Multiple beacons attached to mother device that acts as gateway

Benefits

- Improved asset utilization
- Reduce asset losses
- Increased transport performance

Developments

- **Pilot live** in Europe for an **automotive customer**
- **Pilot implementation** ongoing in the **US**

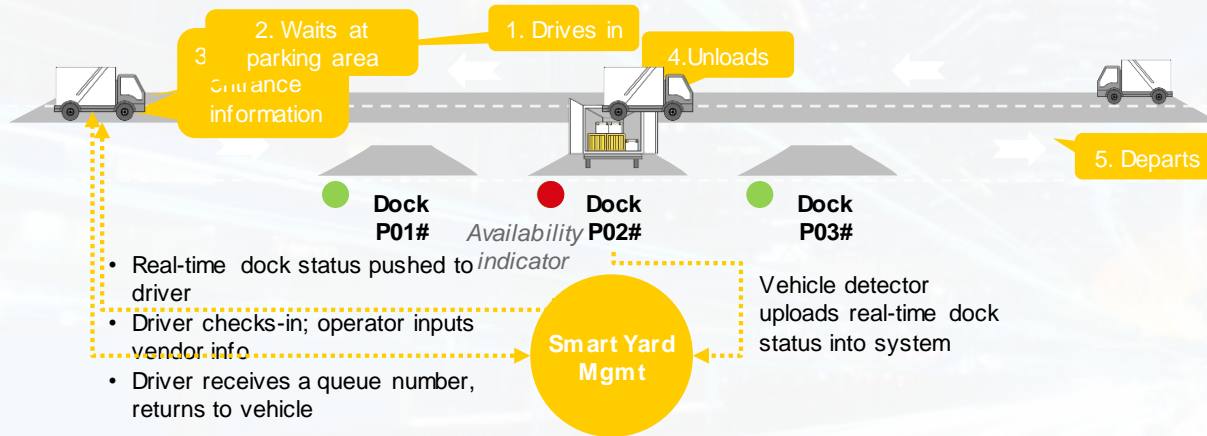


Smart Yard Management Solutions

Streamlining yard management operations through **real time dock status visibility** using NB-IoT technology



Solution



Benefits

- 20-30% productivity improvement in unloading process
- ~30% improvement in on-time-delivery



Developments

- Pilot live in China for an automotive customer

Today's journey



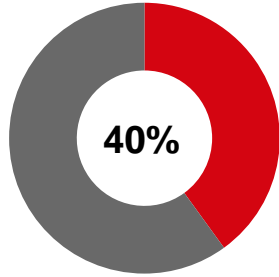
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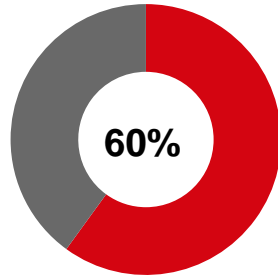
3 Supporting your Tire Supply Chain in South Africa

The South African Tire Industry is still heavily **relying on imports**

Share of imports per tire type



Passenger Car



Commercial
vehicles

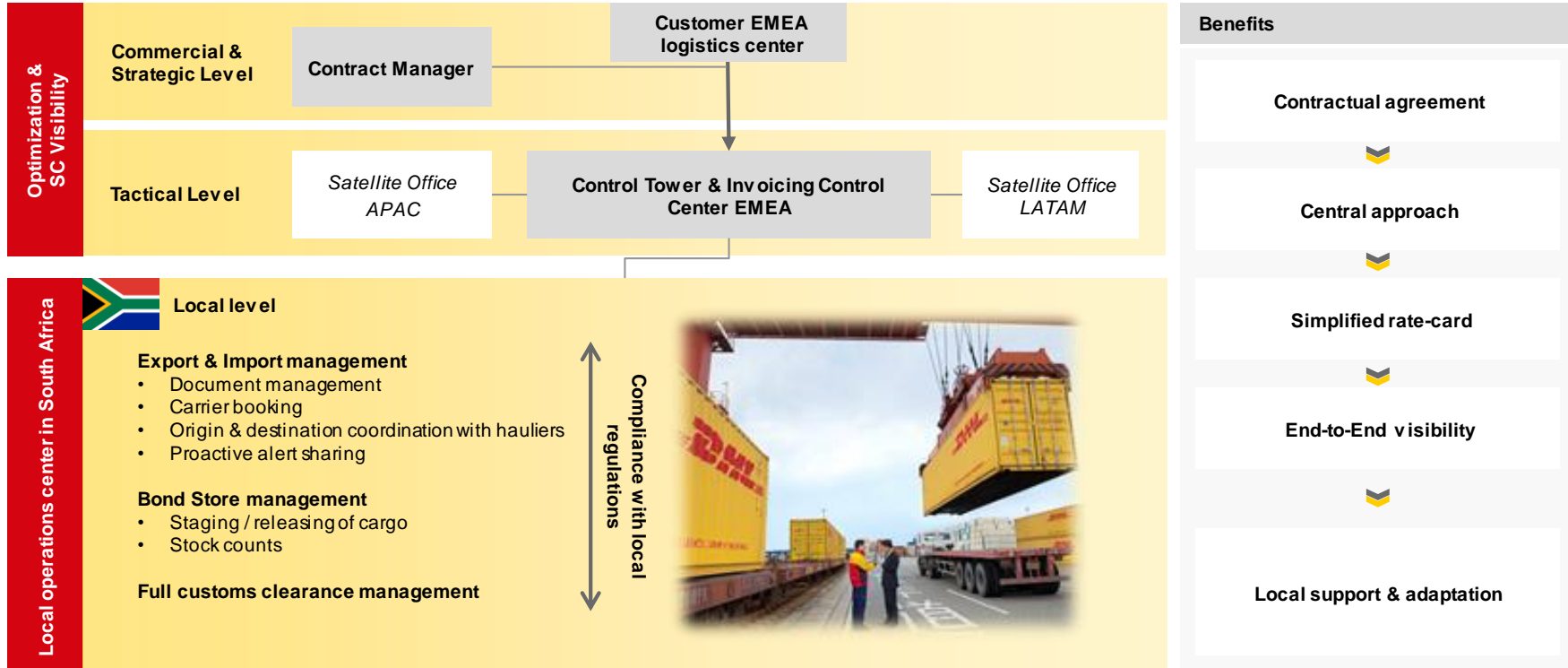
11% CAGR

ZA Domestic Tire Market Growth by 2020

Seamless International Logistics will be key to benefit from the **positive market outlook**



Leveraging our global expertise to ensure **local relevance** of our services





« IT IS NOT WHERE YOU START
BUT HOW HIGH YOU AIM THAT
MATTERS FOR SUCCESS »

- NELSON MANDELA