



# Industrial Trucks Going Electric

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## Content

- Presentation of FEM and Product Groups
- Battery Applications in Industrial Trucks
- The Global Industrial Truck Market
- The Evolution of the European Market
- Policy developments
- General Market and Concept Trends



European  
materials  
handling  
federation





# European Materials Handling Federation

- Founded in 1953 – 14 member associations
- Product Groups
  - Conveyors for Bulk Handling
  - Cranes and Lifting Equipment
  - Elevating Equipment
  - Intralogistic Systems
  - Industrial Trucks
  - Mobile Elevating Work Platforms
  - Racking & Shelving
- +1.000 Companies
- 160.000 Employees
- 62 billion euros turnover (2015)

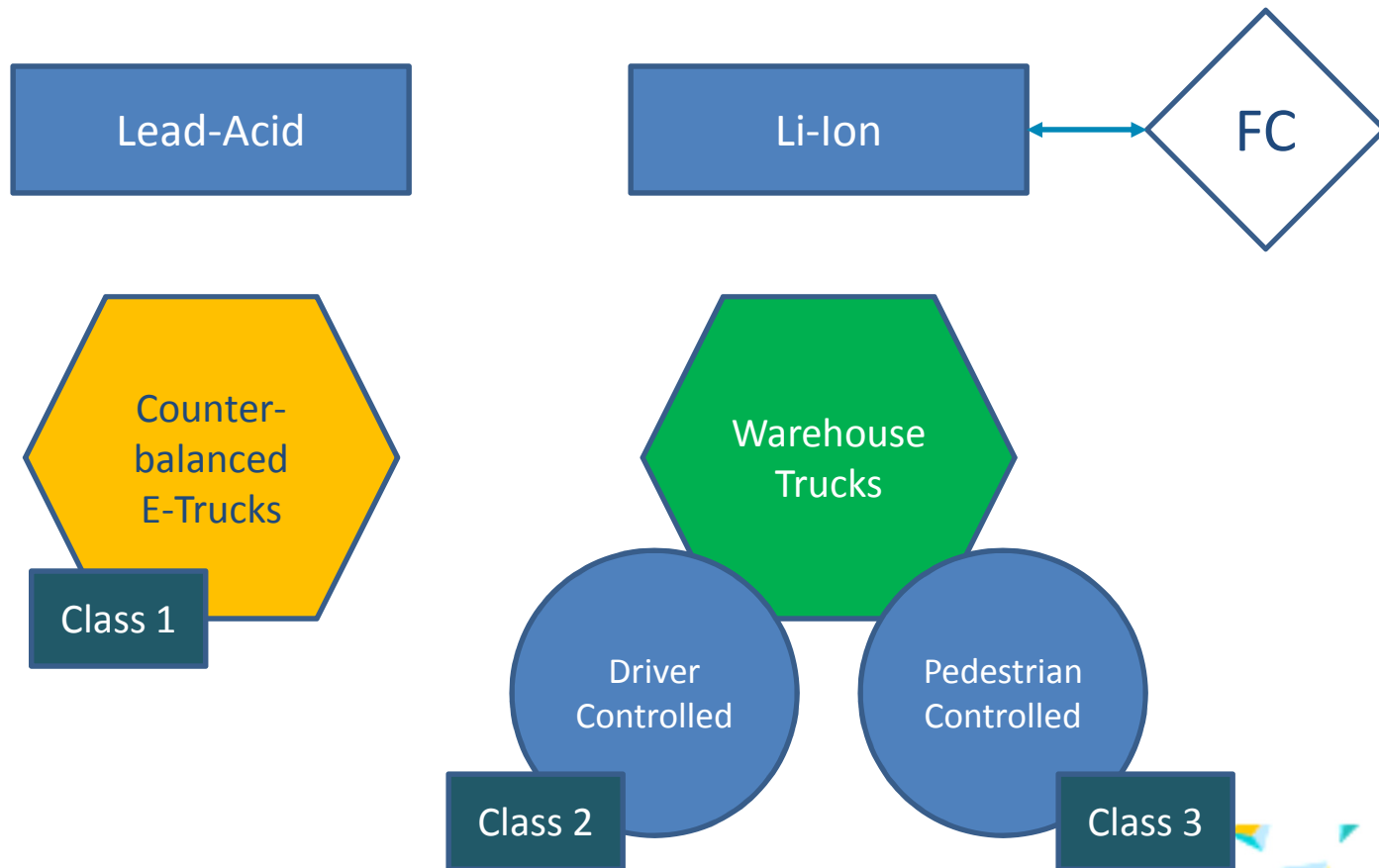


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# Battery Applications in Industrial Trucks



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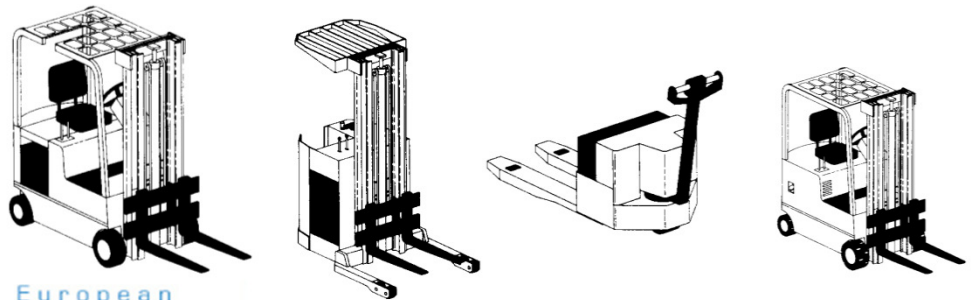




# Global Industrial Truck Market

Electric driven

Q4 - 2016 YTD					
	Class 1	Class 2	Class 3	Class. 4/5	Total
Europe	78.549	39.982	227.379	67.680	413.590
America	44.446	36.209	90.174	92.817	263.646
Asia	72.019	38.730	71.591	257.846	440.186
Africa	2.081	995	3.049	10.160	16.285
Oceania	2.501	2.372	5.411	8.866	19.150
World	199.596	118.288	397.604	437.369	1.152.857



European materials handling federation

EUROPEAN MATERIALS HANDLING FEDERATION  
Product Group Industrial Trucks



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February 2017

WORLD INDUSTRIAL TRUCK STATISTICS (WITS)

INFORMATION SHEET Q4 - 2016

WITS is a worldwide statistical reporting program tracking Orders and Shipments of Industrial Trucks across the globe.

Several truck groups report Monthly and Quarterly Statistics on both trucks to produce the WITS Reports.

ABIMAG - Associação Brasileira de Equipamentos e Equipamentos (Brazil)

CIAT - China Industrial Truck Association (China)

FEH (F) - European Federation of Material Handling (Europe)

Product Group Industrial Trucks

ITA - Industrial Truck Association (North America)

JIVA - Japanese Industrial Vehicles Association (Japan)

KCEEMA - Korean Construction Equipment Manufacturers Association (Korea)

SIEMER - Society of India Materials Handling Equipment Manufacturers (India, since 2015)

The following categories are used in the reporting program:

Class 1 - Electric Rider Trucks - Counterbalanced

Class 2 - Electric Warehouse Rider Trucks

Class 3 - Electric Warehouse Palleton Trucks

Classes 4 and 5 - Internal Combustion Trucks, Diesel and Pneumatic Tire, Counterbalanced

WITS Reports are confidential to the membership of the participating associations. A worldwide summary by continent is made available each quarter to the public.

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World Industrial Truck Statistics / Orders and Shipments

	2016				Total
	Class 1	Class 2	Class 3	Class 4/5	
Europe	27,570	13,760	89,300	27,360	158,000
America	40,200	32,700	90,174	92,817	165,900
Asia	72,019	38,730	71,591	257,846	440,186
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World	146,371	88,668	269,525	397,059	801,623

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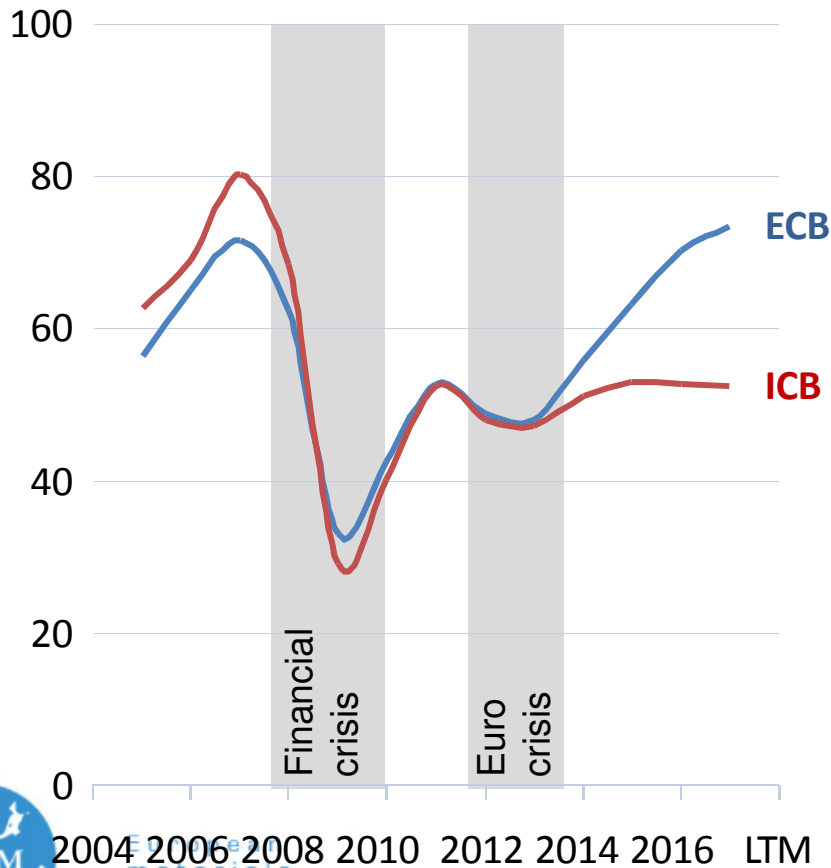
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# The Evolution of the European IT-Market (CB)

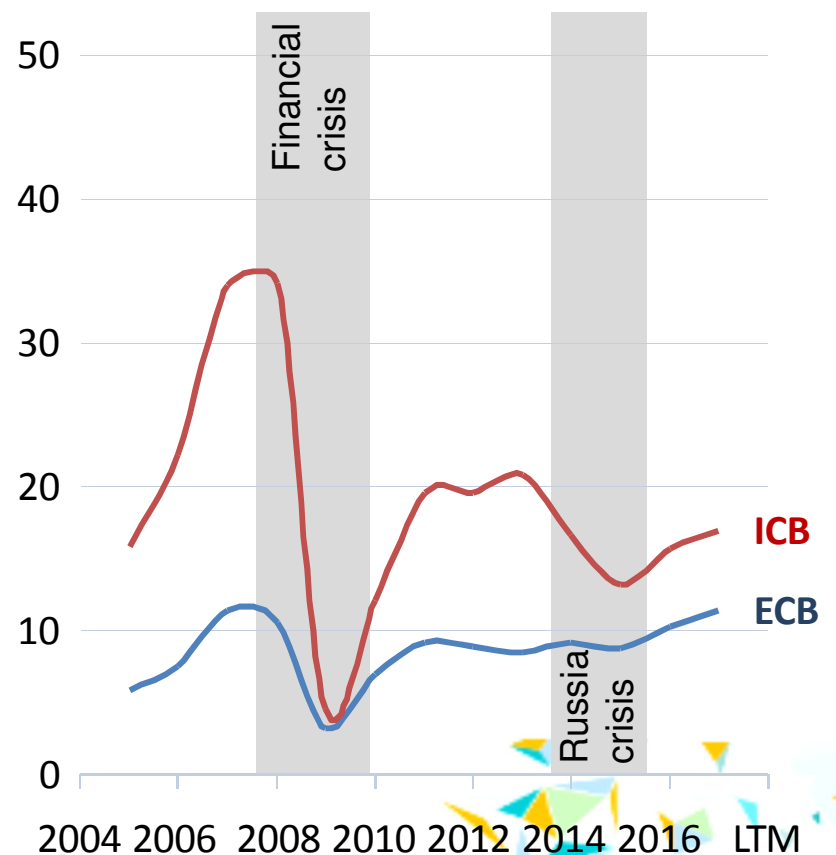
in thousand units **Western Europe**



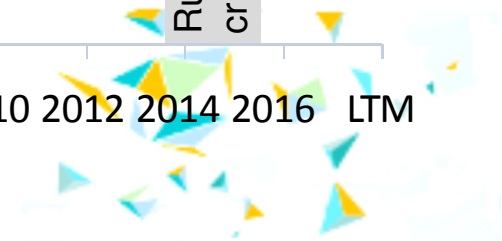
Federation of European  
materials handling  
federation

Note: LTM= Last twelve months

in thousand units **Eastern Europe** As of: 03/2017

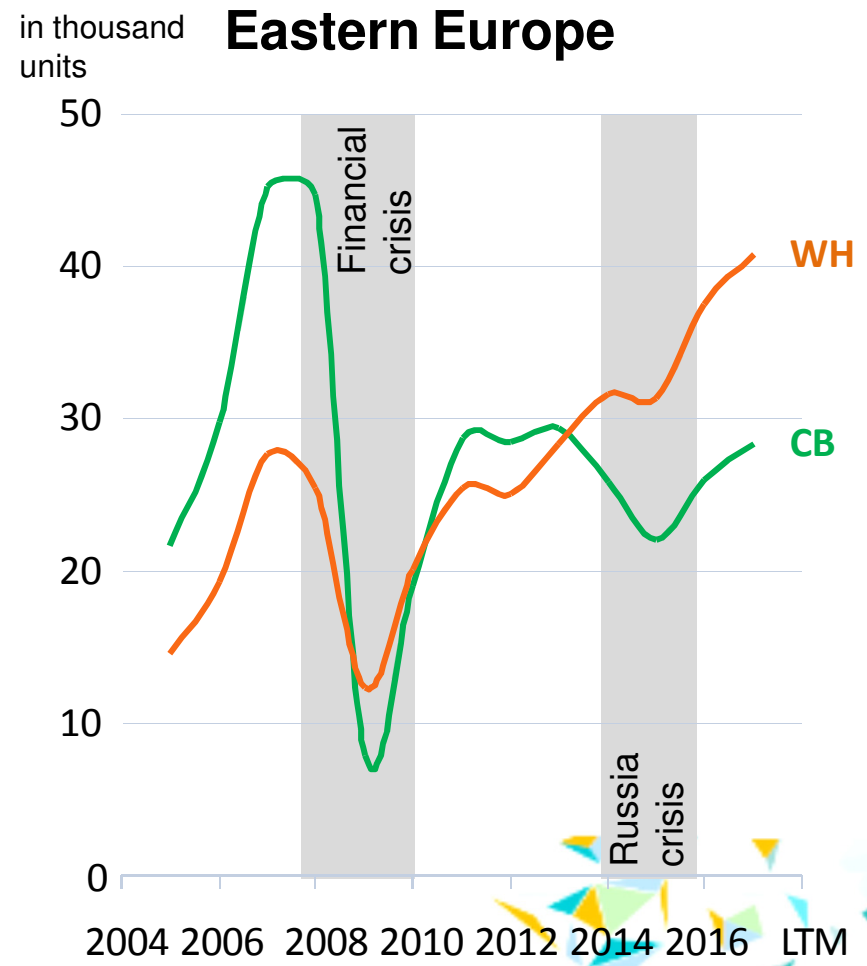
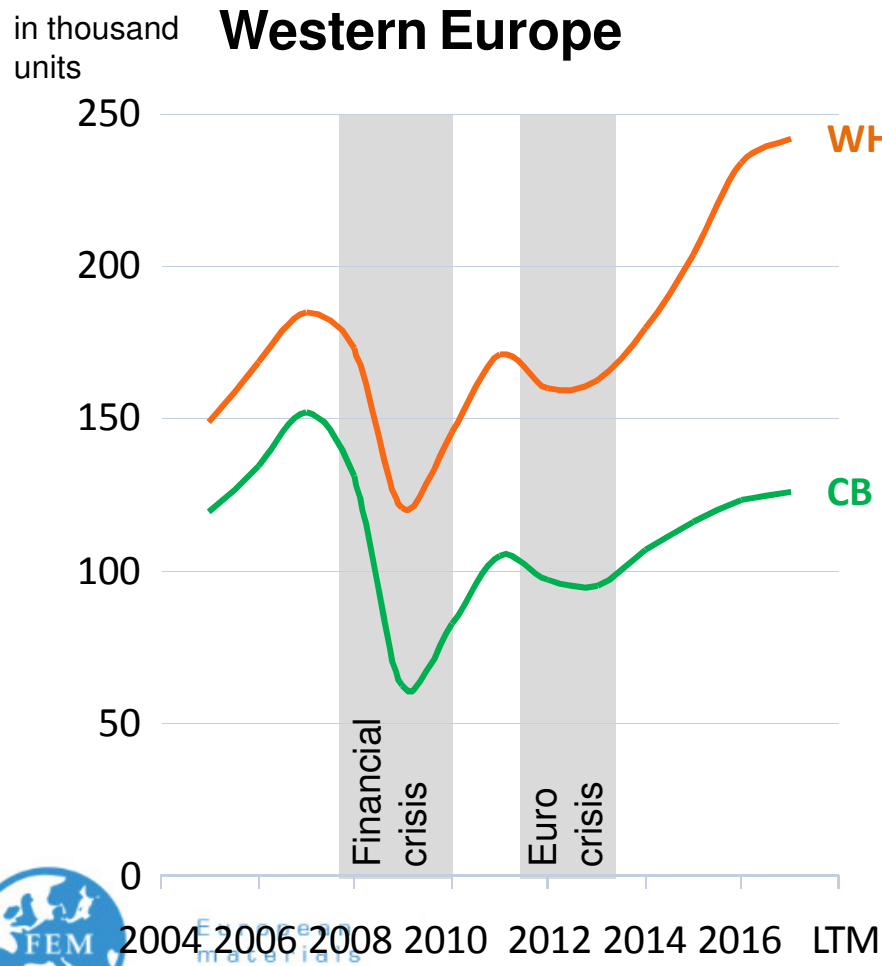


Source: WITS





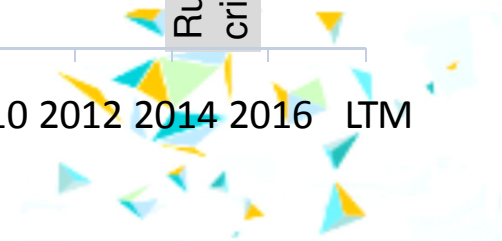
# The Evolution of the European IT-Market (WH)



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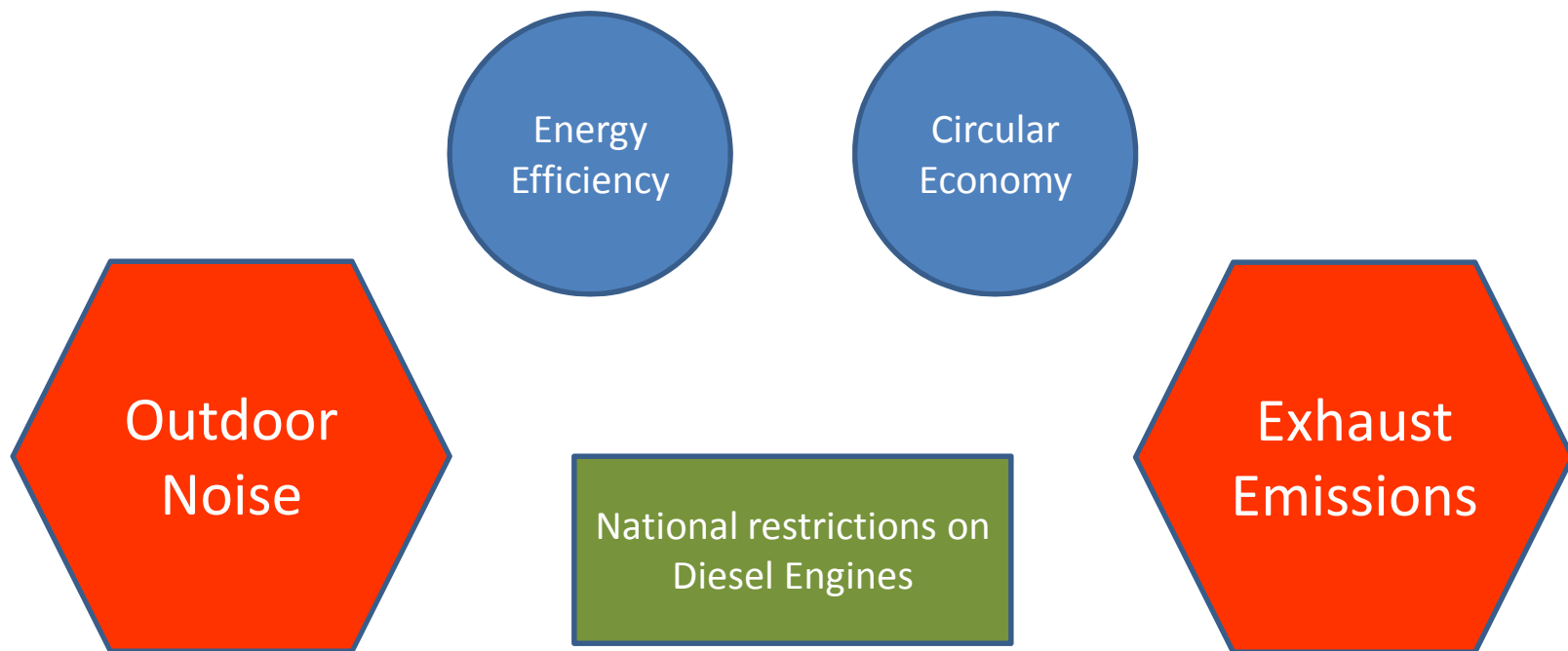
Source: WITS







## Policy developments and other drivers



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# Regulation (EU) 2016/1628

## Exhaust Emissions from NRMM

- Transition Period 18 + 6 months
- 19 – 37 / 37 – 56 kW [g/kWh]
  - CO 5,00 / HC+NOx 4,70 / PM 0,015 / PN 1x10<sup>12</sup> [# / kWh]
  - Type Approval 01/2018, Placing on the Market 01/2019
- 56 – 75 / 75 – 130 kW [g/kWh]
  - CO 5,00 / HC+NOx 4,70 / PM 0,015 / PN 1x10<sup>12</sup> [# / kWh]
  - Type Approval 01/2019, Placing on the Market 01/2020
- Delegated and Implemented Acts
  - Commission Delegated Regulations (EU) 2017/654 and (EU) 2017/655
  - Commission Implementing Regulation (EU) 2017/656



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# Revision of Directive 2000/14/EC Noise Emission of Outdoor Equipment

- Evaluation study of ODELIA finalized
  - Scope
  - Lower limit values
  - Article 12 / article 13
  - Test cycles ?
- EU COM Impact Assessment started

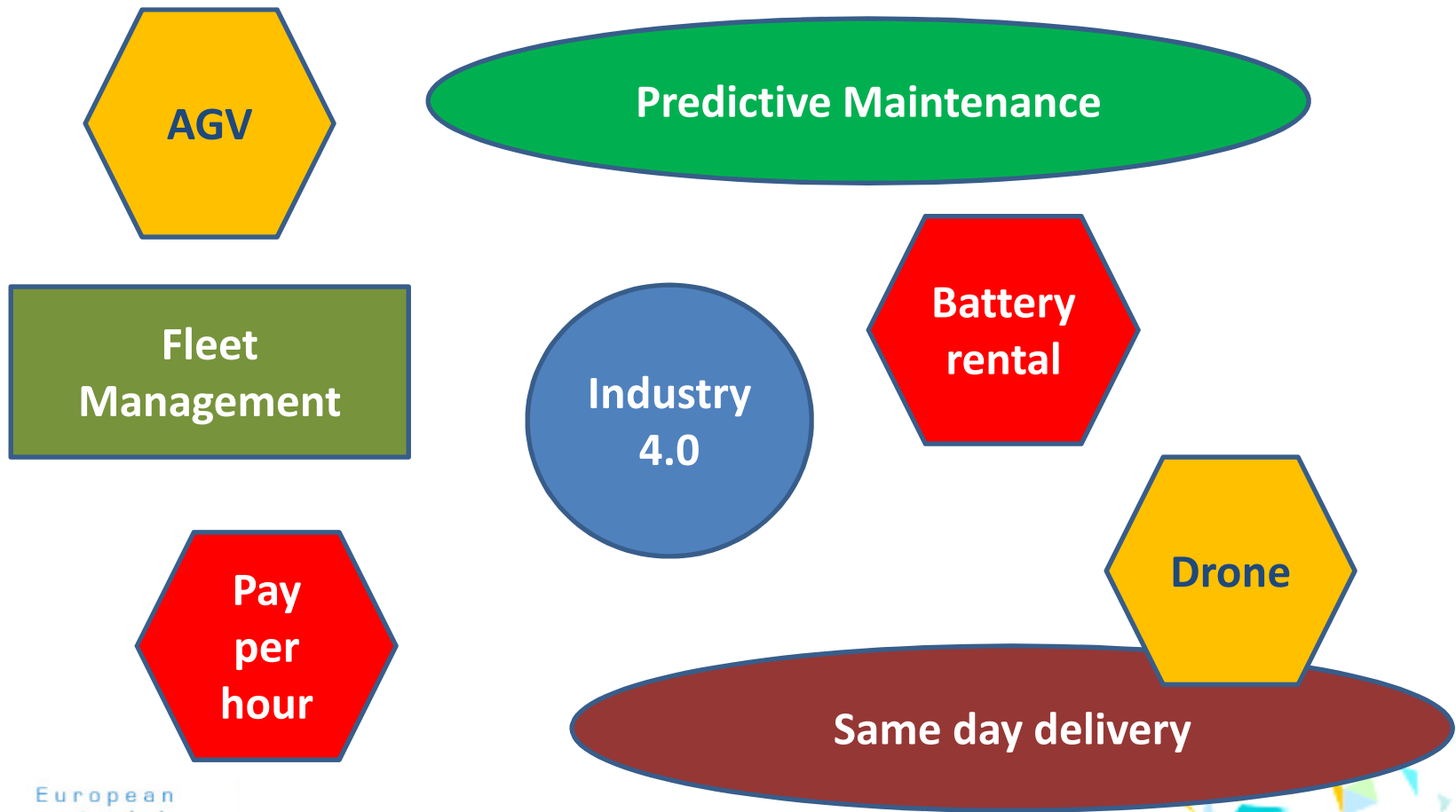


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## General Market and Concept Trends



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## Tweet

FEM presents the developments of battery applications in industrial trucks at [@eurobat\\_org](https://twitter.com/eurobat_org) Forum2017



**“The European materials handling industry is a frontrunner on clean and sustainable technologies”**

**Heiko Boekhoff,**  
Product Group Industrial Trucks  
Eurobat Forum, 9 June 2017