



Industry 4.0 and its Impact on International Trade

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List of Talks

- ❑ Issues in International Trade
- ❑ Data Requirements for International Trade
- ❑ Industry 4.0 Technologies for International Trade
- ❑ Conclusion & Benefits

Issues in International Trade



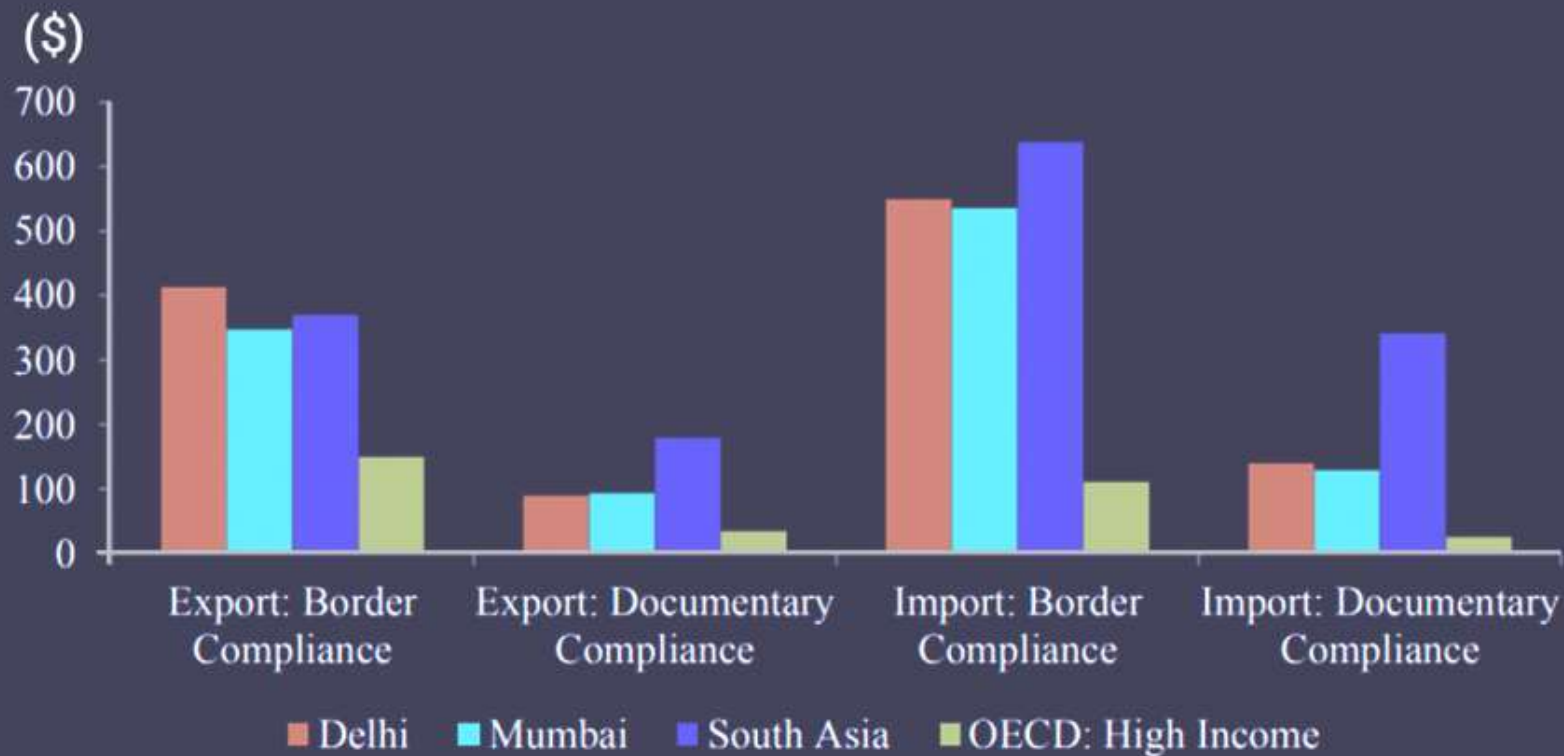
Issues in International Trade





Costs of Cross-Border Trade

COST OF CROSS-BORDER TRADE



Source: DB 2018 report for India

Bloomberg | Quint

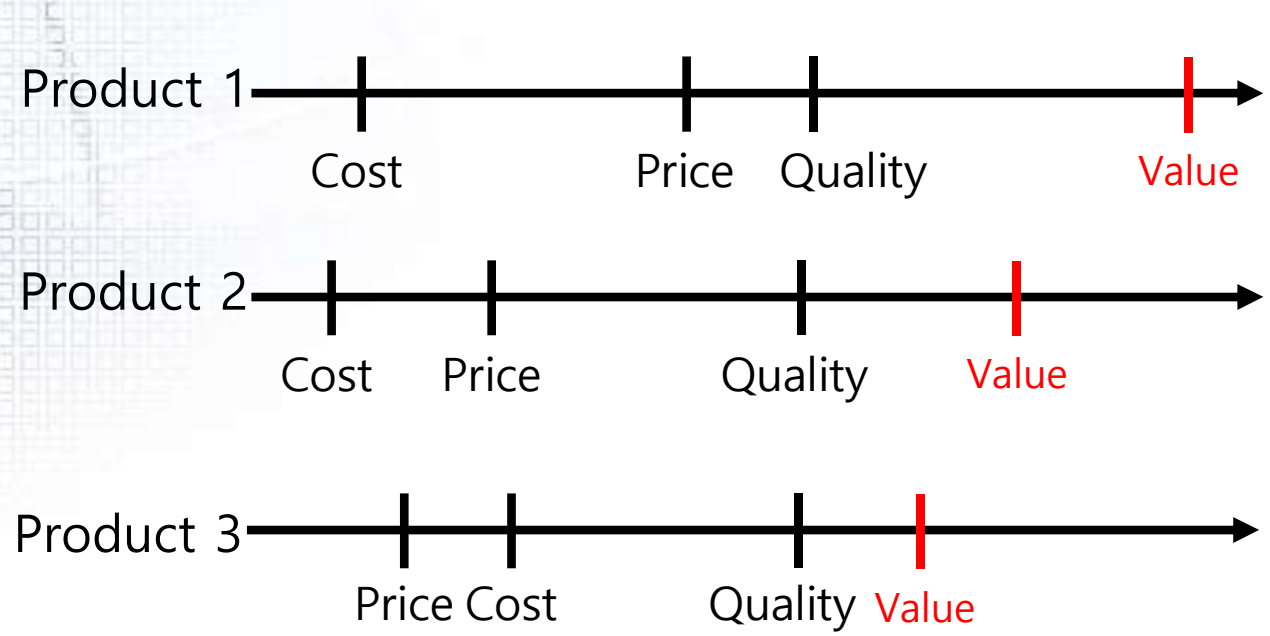
India: 6 days to export while **13 days** to import

South Asia: 7-8 days to export while **20 or so days** to import

Data Requirements for International Trade



SCM and Buyer's Criteria



Price

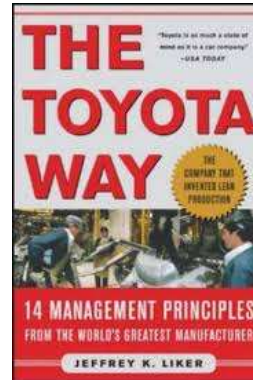
Quality

Value

Innovative
Customizable
Sustainable
Differentiated
Connected

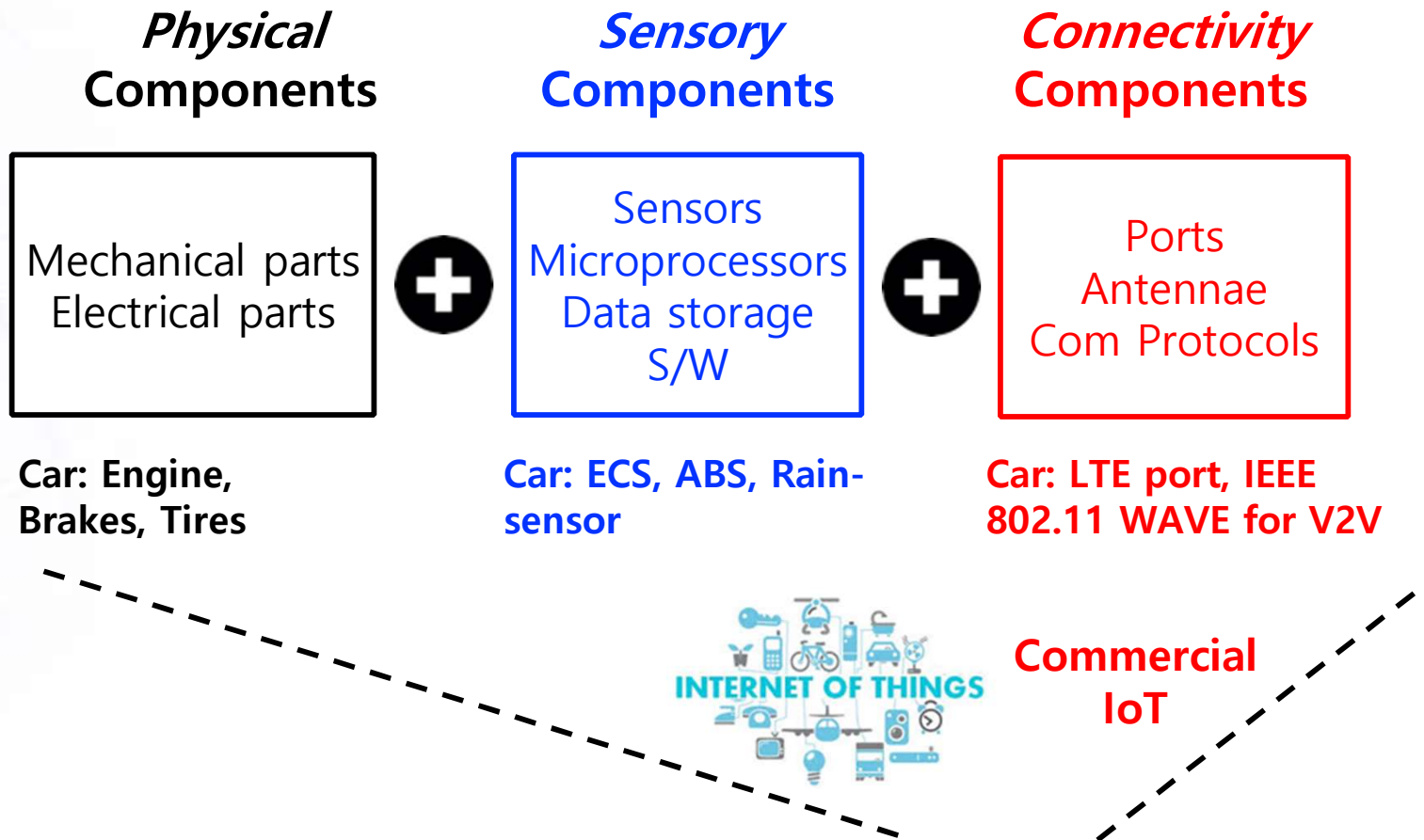


Long Road to Industry 4.0



Cost Focus	Quality Focus	Value Focus
Industry 2.0	Industry 3.0	Industry 4.0
1900	1970	2015
Identical products	Product of high quality	High valued products
Economies of Scale Push Policy	Just In Time Kanban, Pull Policy	Digital Technology, IoT, Big Data, AI, 3D Printing
Mass Production	Lean Production	Smart Factory, Smart SCM, Smart Product
Policy-driven		Data-driven

Product with IoT – Smart Product





Smart Product Examples

Product
with
Physical
Components



Product
with
Sensory
Components



Smart
Product

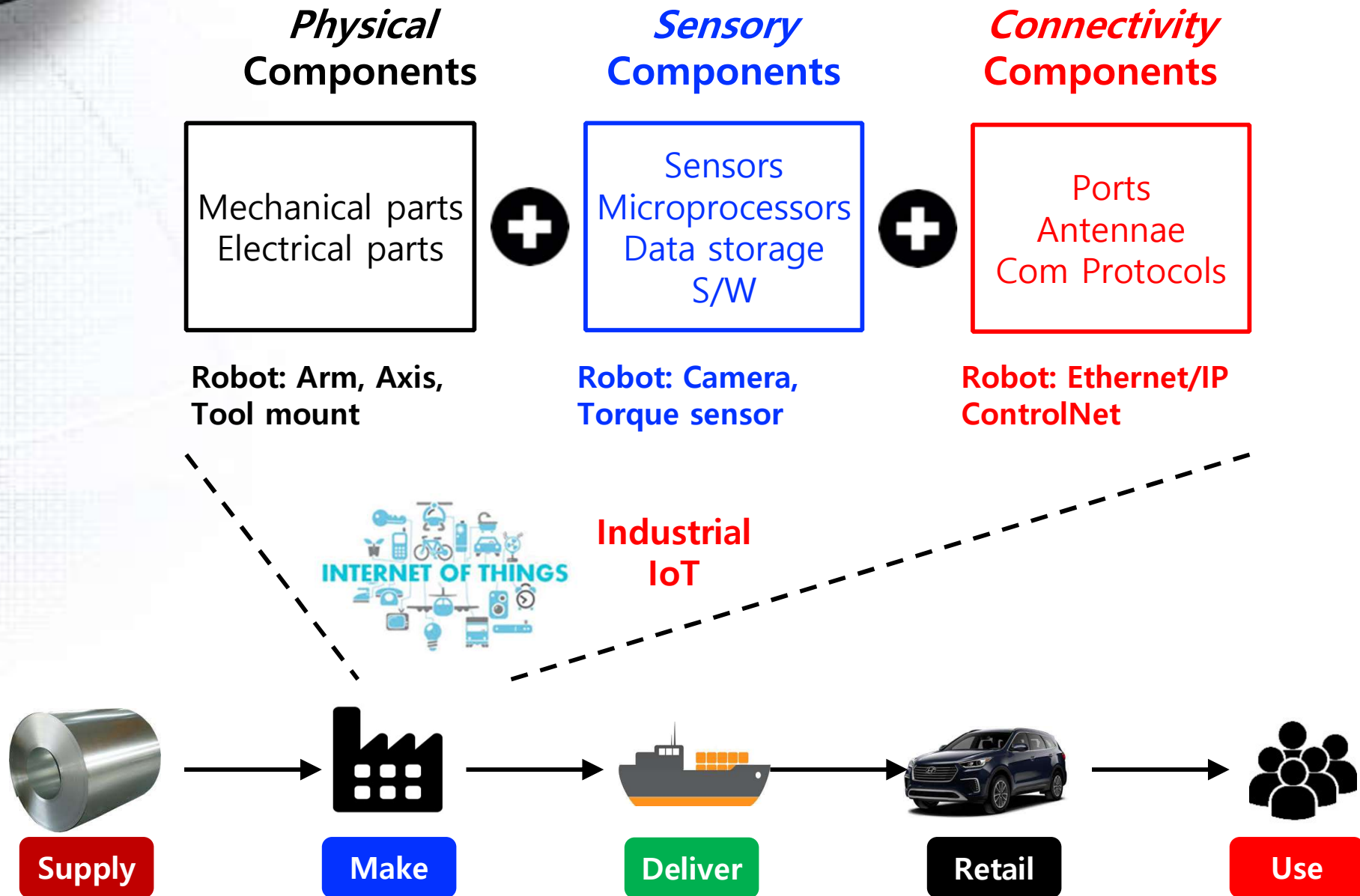


The Real Reason Google Paid \$3.2 Billion For Nest

The potential market for its products could be big, like really big

By Verne Kopytoff | Jan. 14, 2014

Machine with IoT – Smart Machine





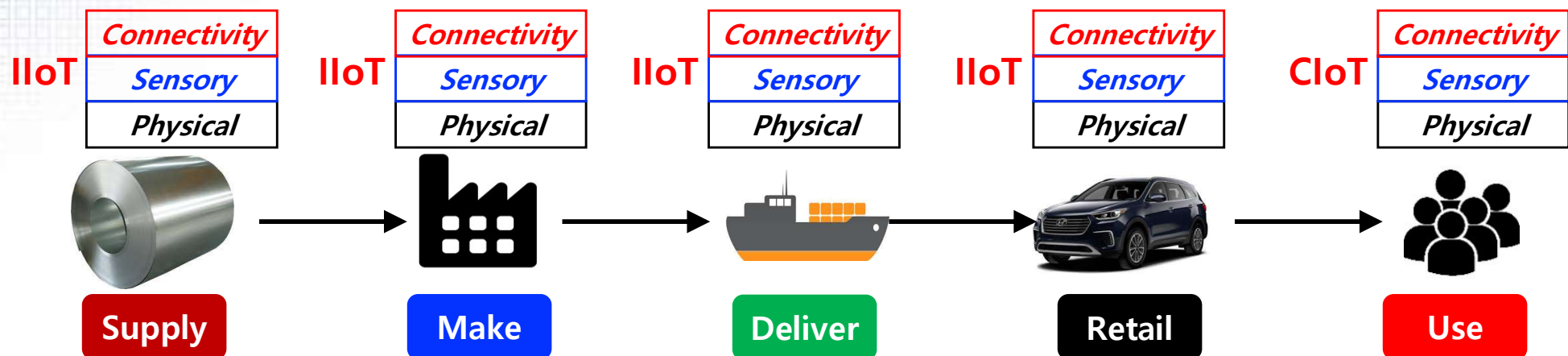
Smart Everything

❑ Internet of Things (IoT)

- Industrial IoT (IIoT) – design, materials, production, logistics, etc.
- Commercial IoT (CIoT) – channels, usages, services, complaints, etc.

❑ Digitalization

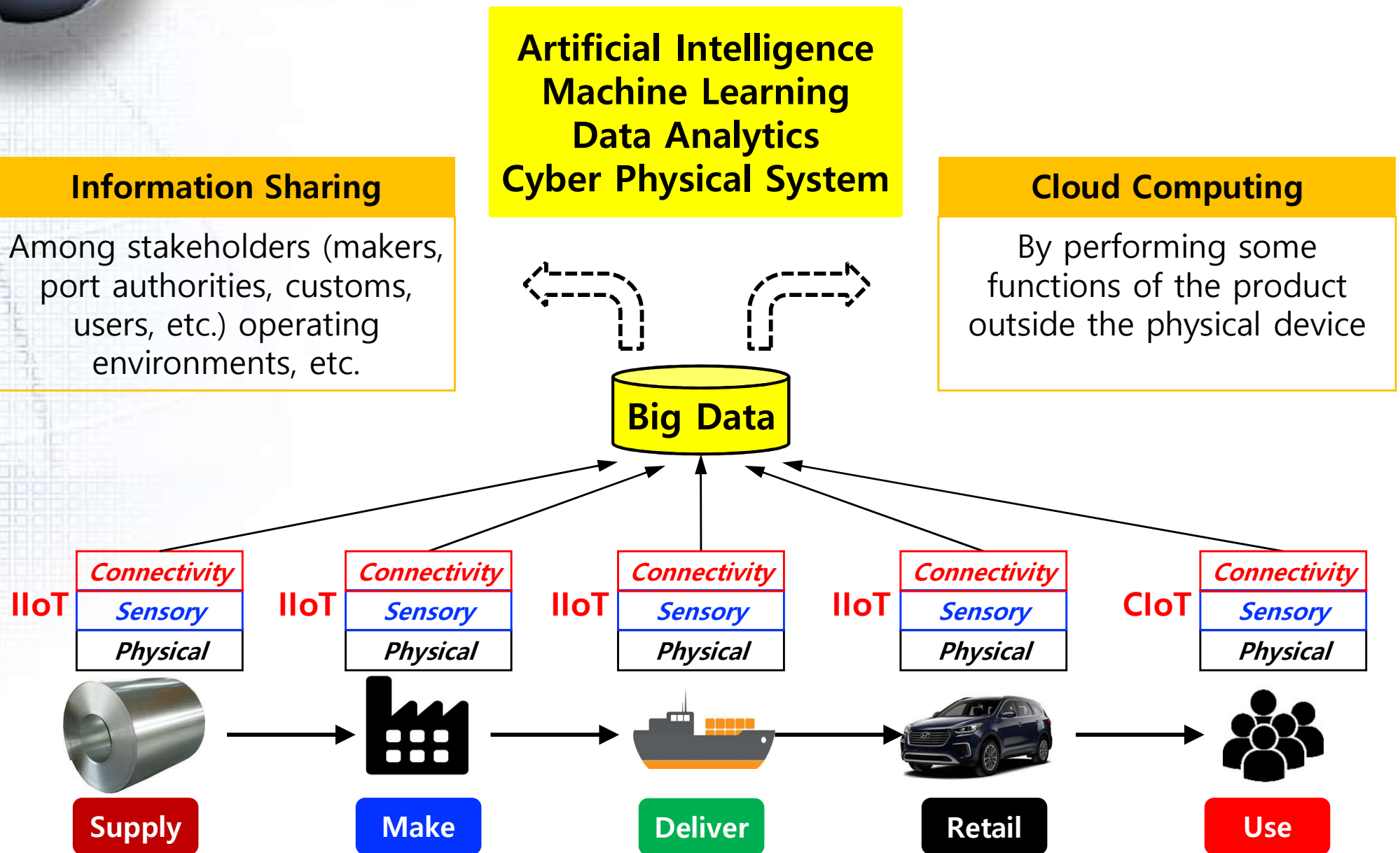
- **Article 8**, Framework agreement on facilitation of cross-border paperless trade in Asia and the Pacific
- Trade-related data & documents – payloads, locations, customs, etc.



Emerging Technologies for International Trade

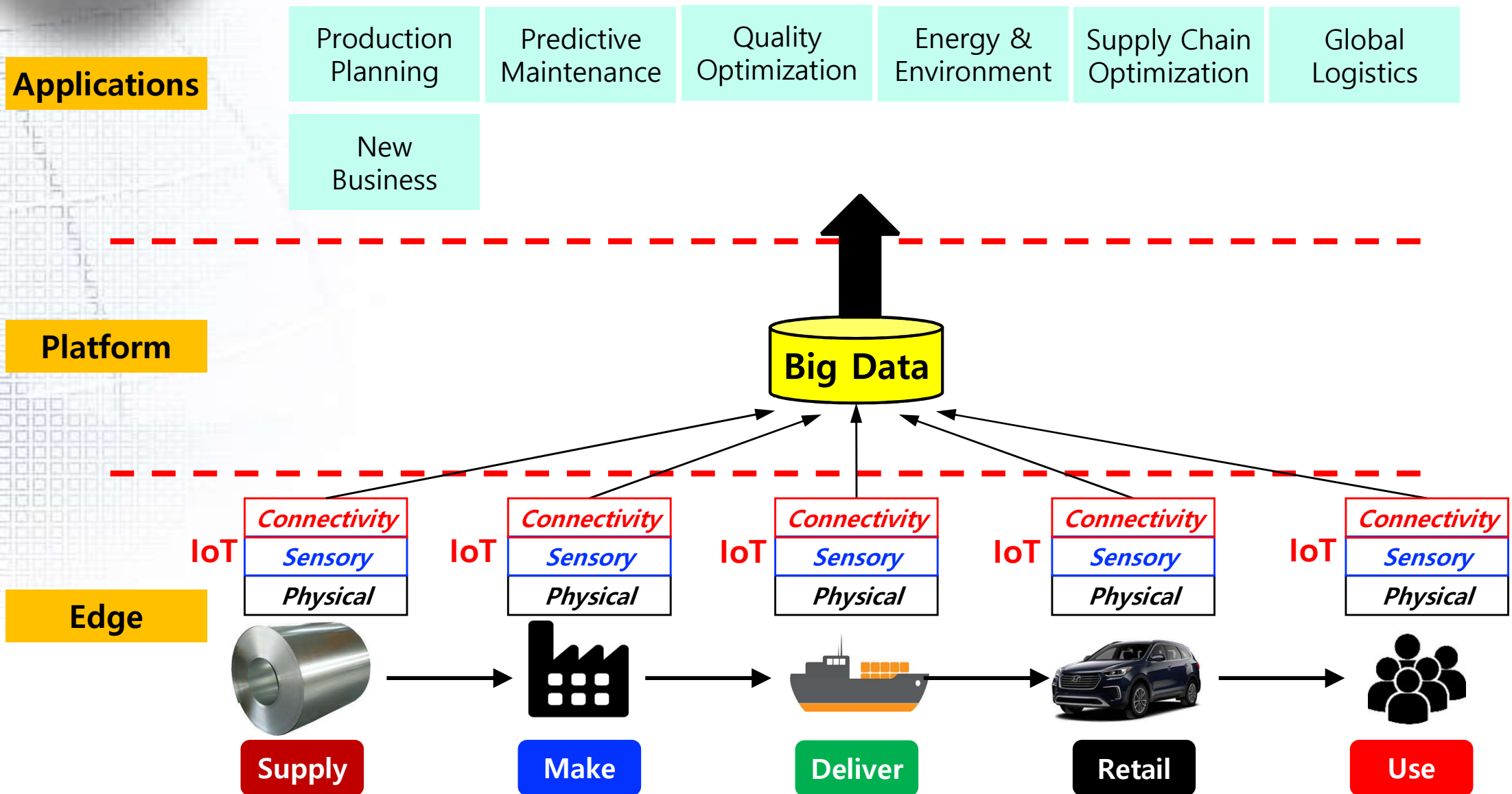


Emerging Technologies with IoT & Digitalization



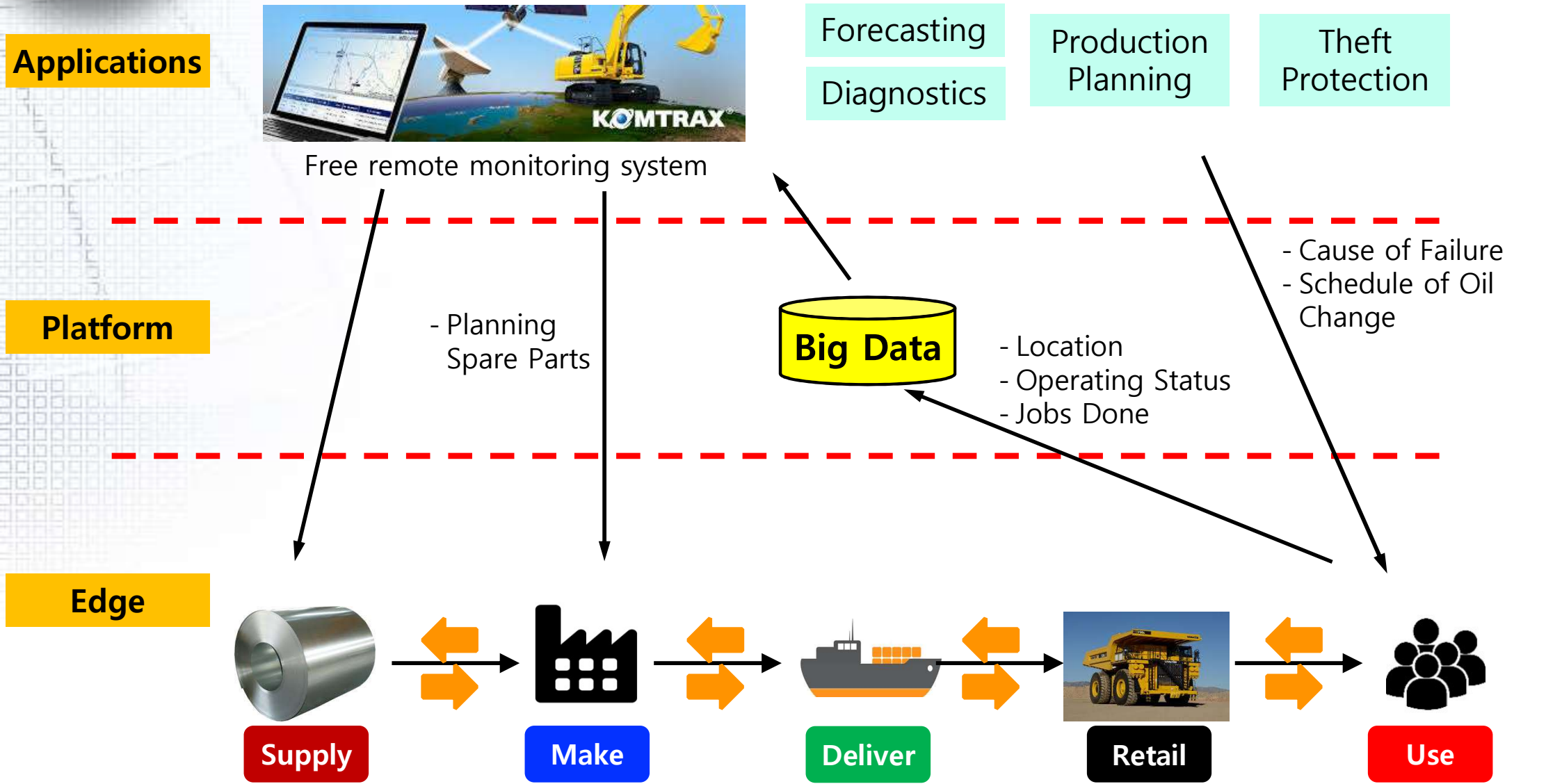


Business Benefits with Emerging Technologies



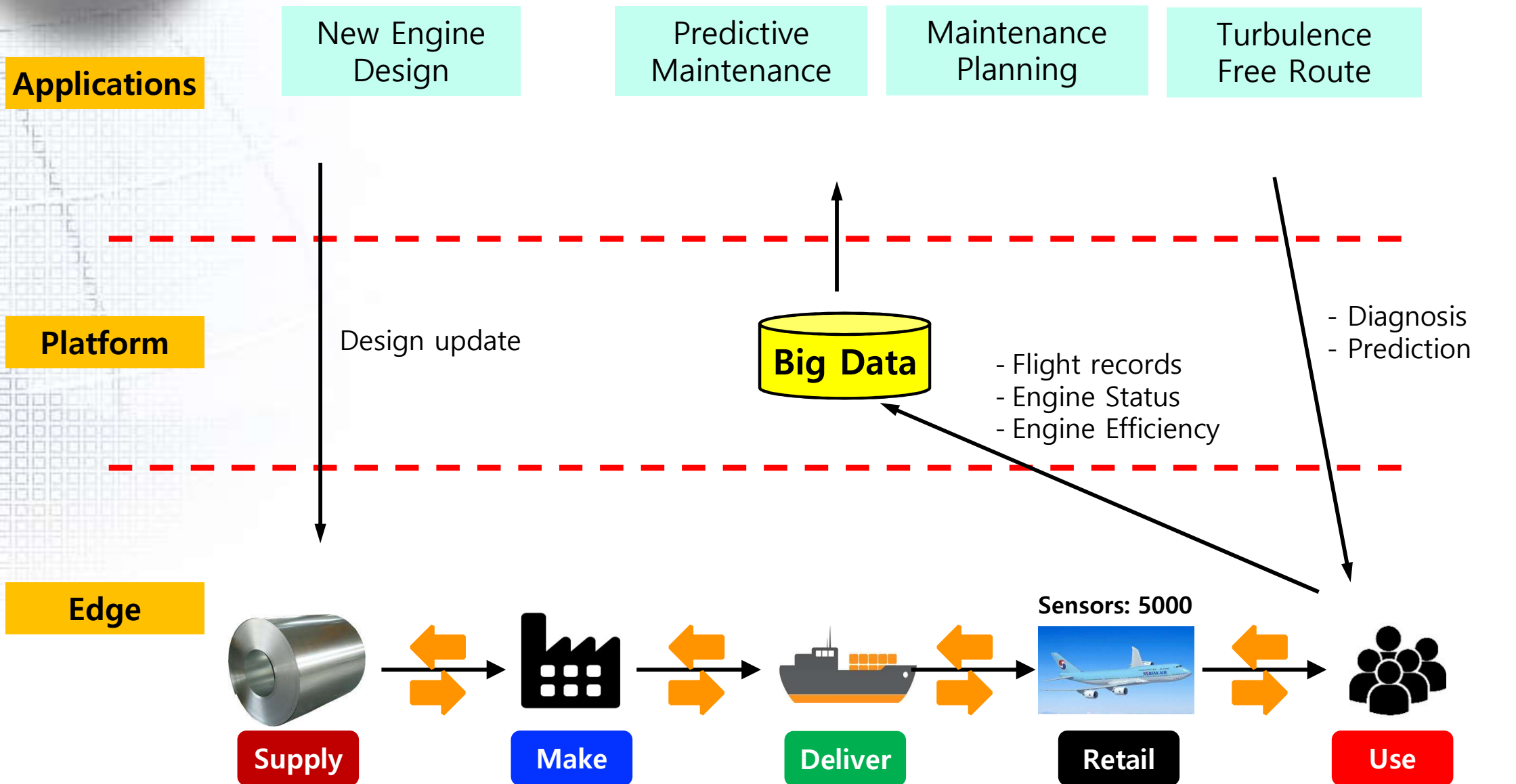


Business Case - Komatsu's Komtrax Plus





Business Case - GE's Jet Engine





Recommendations

- ❑ Integrated digital platform
 - Single window digital platform to link all stakeholders to perform the whole product lifecycle
 - Reduces delays and the number of trade documents
- ❑ Integrated trade & logistics policy
 - Creating streamlined interactions with multiple stakeholders such as port authorities, customs, shipping lines, other government agencies
- ❑ Measure performance
 - With this, policy makers identify what needs to be done to create a “seamless environment”
 - Ex) loading/unloading time at a factory, the number of inter-state border checks

Conclusion & Benefits



Industry 4.0 & Cross-Border Trade

❑ Background on Industry 4.0

- Not just cost minimization and quality maximization
- Data-driven value maximization via customization, differentiation

❑ Scope & Goal

- End to End (Design to Delivery)
- All the business data are collected and analyzed to extract knowledge and insights
 - **Indirect revenue: Operational excellence** in international trade for lead time minimization, traceability, visibility
 - **Direct revenue:** Data driven new business model – integrated digital platform



Qualitative Benefits

(End-To-End) Minimize Lead Time



Traceability of Defects



Visibility of Progress



Usability of Defined Product



Manufacturability



Quantitative Benefits

SOURCE: McKinsey Industry 4.0 after the initial hype(2016)

