



Game-changing emerging technologies in the postal sector

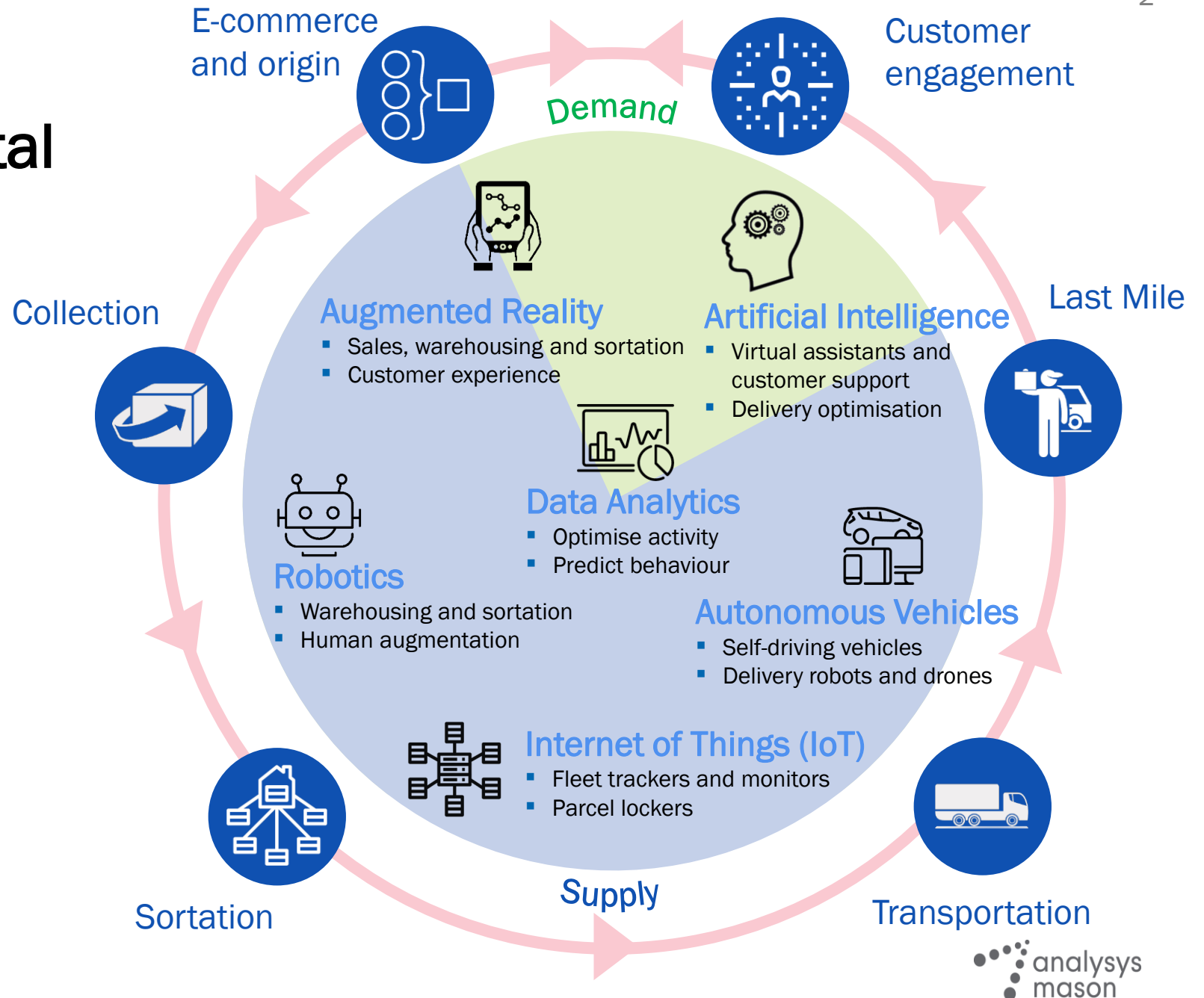


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New technologies embedded in the postal and parcel pipeline



Enabling technologies support the pipeline ...but are they Game-changing?



5G

- Offers ultra-reliable low latency communication
- Support for 'massive machine type' communication
- But networks are different in many countries, and not ubiquitous

Private mobile networks

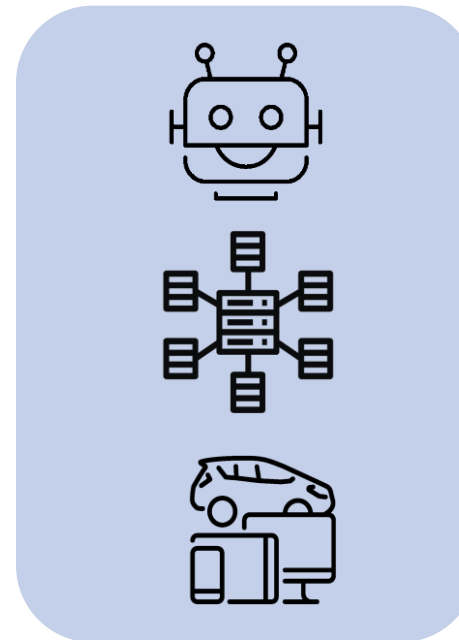


- Local, national and global private network function
- Accessible only to the private client / owner
- Enhanced security and capacity/communications guarantees
- Could be owned or leased by an independent global provider such as Nissan, Mercedes, etc.
- But costly to secure a private network

Blockchain



- Distributed ledger technology, replacing traditional centralised databases
- Various inherent benefits
- But with some specific drawbacks for the global postal and parcel industry



Not in itself, but Robotics, IoT and Autonomous Vehicles have the potential to radically change the supply side in advanced nations, country by country






Unlikely

Data-driven applications across various supply and demand segments and niches






Potentially game-changing
Global and national solutions, but with challenges to be overcome

Blockchain offers significant benefits, but there are various challenges to overcome, primarily the adoption of technology across the ecosystem

Benefits

-  **Security**
 - difficult to tamper the recorded data
-  **Convenience**
 - allows transactions between participants who may not trust each other, without an intermediate authority
-  **Transparency and decentralisation**
 - every user has access to the whole blockchain data
-  **Resiliency**
 - the whole system will not fail due to single point of failure as multiple other copies of the ledger exist
-  **Cost reduction in the finance sector**

Challenges

-  **Technology**
 - data privacy
 - data storage
 - scalability and speed
-  **Regulation**
-  **Public adoption/acceptability**
 - public perception
 - lack of adequate skill set
-  **Energy consumption**
-  **Implementation and interoperability**
 - high capital expenditure and collaboration between the participating organisations are needed

Blockchain solutions are being developed in postal logistics, financial services and other niche events – but will they be a global success?

Postal logistics

- **Certificates of origin**
 - reduce counterfeit medications (DHL, Accenture)
 - fresh produce safety data from suppliers (Walmart)
 - track the provenance of diamonds (Everledger)
- **Customs and handling**
 - piloted in Shanghai and Guangdong ports (Ideanomics and APMEN, China)
 - explored in ports of England and Scotland (Associated British Ports, Marine Transport International)
 - trialled in Cairo airport (Egypt Post)
- **Track and trace**
 - monitor pharmaceutical cold chain (Swiss Post)
- **Crypto stamps**
 - with NFC-enabled verification (Austria Post, Croatia Post)
- **Digital post office box**
- **Reverse logistics for returns**

Financial services

- **Digital wallet**
 - Egypt Post conducted a study in 2018
 - Tunisian Post implemented eDinar solution in 2019
- **Identity management**
 - Australia Post conducted a research in 2016
 - US Postal Service plans to conduct a research
- **G2P and P2G payments, remittances and direct cash transfer – with transaction information management**

Other niche events

- **Voting system**
 - US Postal Service filed a patent for voting system
 - also piloted in Estonia, Canada, Sierra Leone, Russia, Switzerland, Denmark, Australia and South Korea
- **Philately**
 - digital crypto stamps (Austrian Post and Swiss Post)

Thank you

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