

ULD Internet of Things

ULD IoT & Other Tech Drivers – “The path forward” in 5 minutes

Sept 18th, 2019 – ULD Annual Conference- Montreal, CA
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Strategic
Partner



“The airline industry is reluctant to change because change is hard”

-Joseph P Jensen

**Unilode is
committed to
making change
easy**

A word cloud of various terms related to challenges in the airline industry. The word 'challenges' is the largest and most prominent in the center. Other words include 'capital', 'oversight', 'suppliers', 'fear', 'legacy', 'infrastructure', 'history', 'reluctance', 'change', 'technologies', 'airlines', 'customers', 'regulatory', 'politics', 'new', and 'I.T'. The words are arranged in a circular pattern around the central word, with varying sizes and orientations.

Challenges for IoT adoptions

The **single largest** technological advancement* for airline operations was the implementation of **optical scanners** & to this day.....only less than half of the airlines scan objects loaded onto the aircraft.

Regulatory Oversight

"Mom & Dad know best"

- Gov't: FAA/EASA/CAB
- Industry: SAE 2A/IATA
- Time frame to approve items are extremely slow
- Too complex to standardize

Legacy Infrastructure

"The backbone of the airlines is running on a green screen"

- Home grown applications
- Non-linked applications
- Lack of SMEs
- Past integration issues

Lack of Capital

"The best performing passenger carrier only makes 12%+ after expenses"

- Heavy aircraft asset costs
- Contingent on fuel costs
- Revenue per Kg volatility

Politics & Reluctance

"We don't need that. We run a great operation"

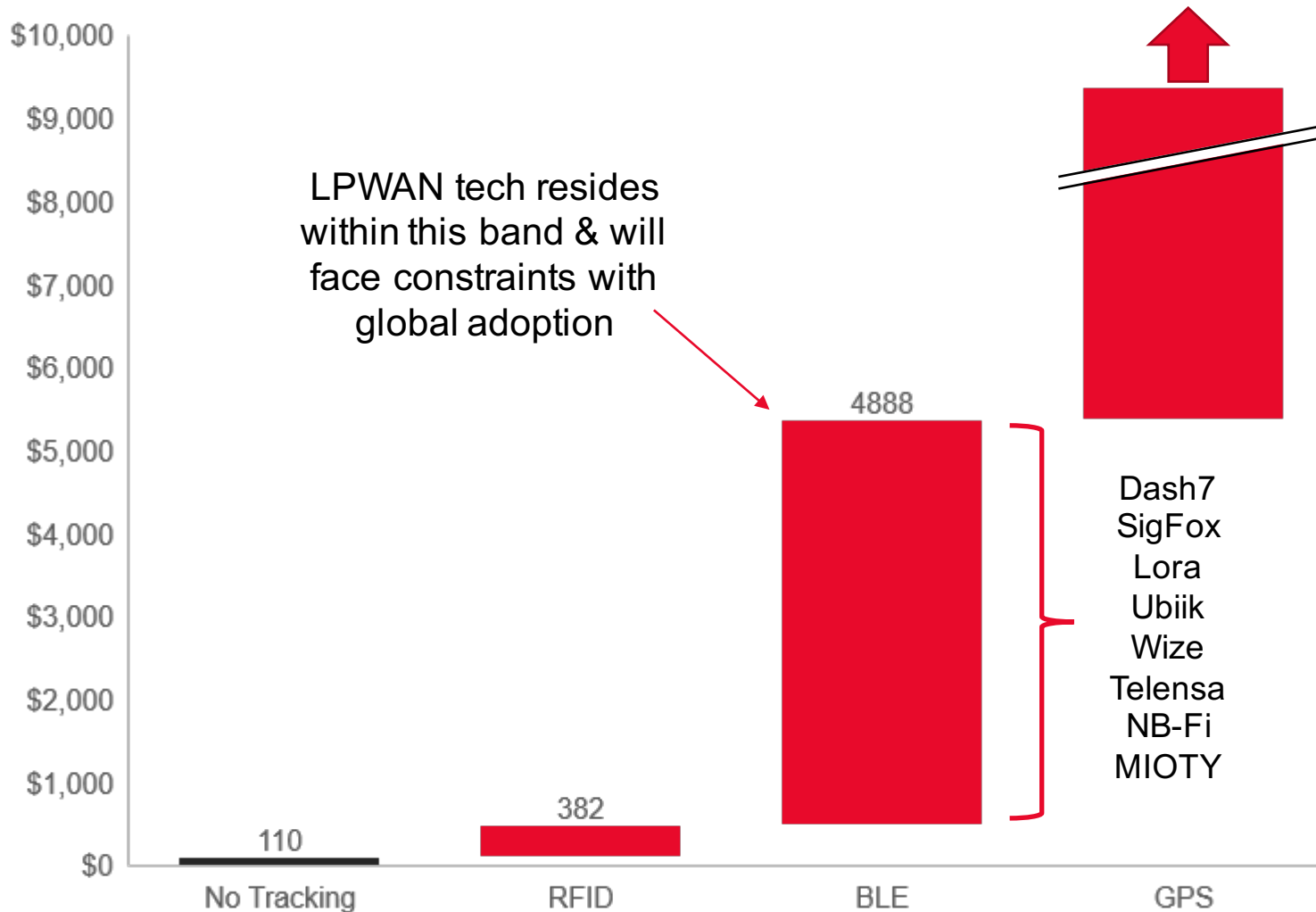
- Fear of sharing failures
- Lack of support from leaders & don't care attitude
- Outsourced jobs



Asset Tracking Model



Why is BLE tracking so attractive right now, What is in the future?



Other Considerations

- Service Fees
- Infrastructure size
- Replacement timing
- Preventative MX
- IT Support & Regulatory
- Damage rates
- Data costs
- Own or lease
- Residual value
- WACC

#JJ_Quote

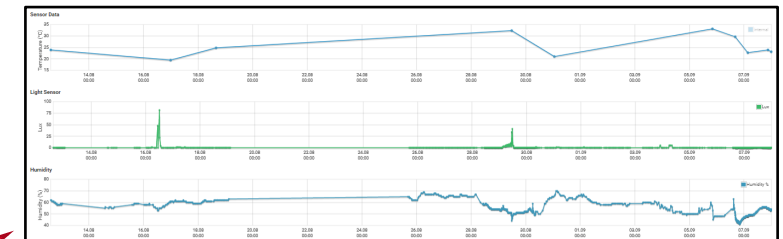
“In the airlines the true innovation is not to make a device that complies with government regulations or industry specs but to create a seamless customer experience that integrates with the customers’ processes.”

Interoperability on all devices & lower TOC

The “digital journey” requires a hybrid model of exceptional hardware, software, subject matter experts, & partnerships to drive change

- Mobile Devices (tablets & phones)
- Fixed Position Readers & Mesh Networks
- Powerful and accurate multi-sensor tags
- Experts in big data

Unilode Live Sensor Data



The future
of IoT

Unilode Live Tablet View



#JJ_Quote

“Words such as dashboards, AI, & Blockchain are not innovation. Driving increased revenue with lower costs is the true innovation”



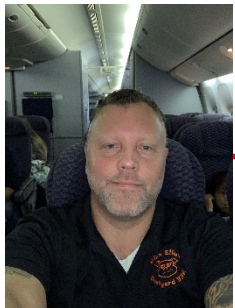
Unilode Live Mobile App

nexx:iot

ONASSET
INTELLIGENCE

Managing the Air Cargo **Travel Ribbon**

Sensor data creates end-to-end transparency for the air cargo supply chain



JJ Inflight monitoring his baggage in real-time!

Stay in control !



Inflight Monitoring



Track shipment



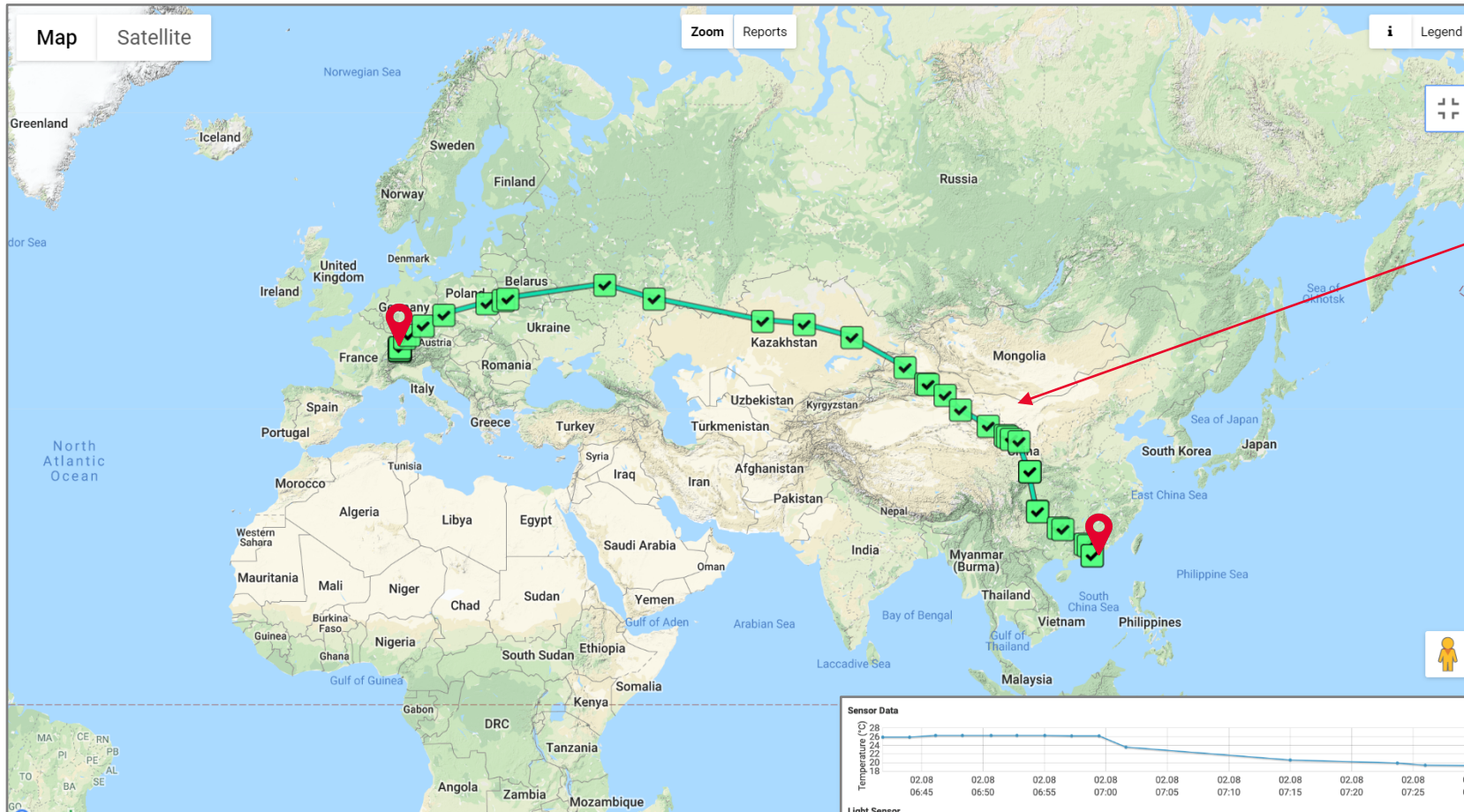
Receive alerts for corrective action!

#JJ_Quote

“Control the input & you control your output. Unilode BLE devices can put the power into your hands to manage your operation in real time”

Managing the Air Cargo **Inflight Monitoring**

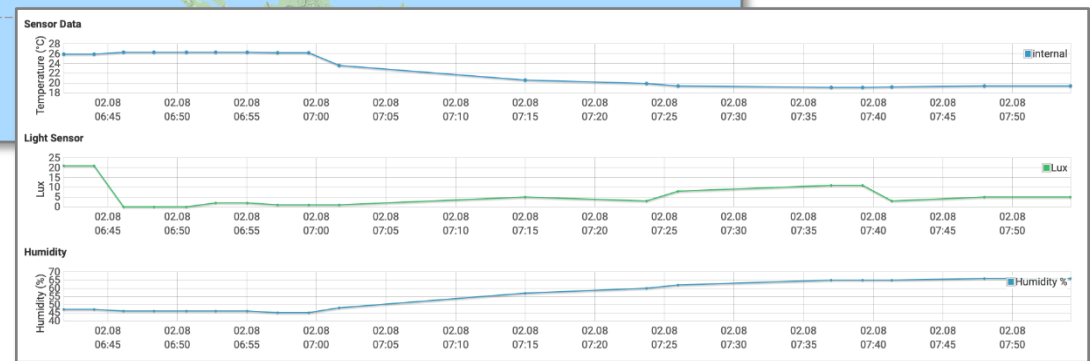
From cargo acceptance to delivery: Customers are missing ~60% of the journey



HKG-ZRH
11 hours
40 minutes

Live sensor data!

Unilode live test results and the future of connected ULDs. It shows a commitment to continuous innovation!



Thank you for your time!