IATA AVIATION DATA SYMPOSIUM

ATHENS, GREECE 25 – 27 JUNE 2019

PASSENGER

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IATA

The data ecosystem: APIs & Industry Data Model

Matthew Mckinley, Senior Manager, Technology Standards, IATA

Data Model to developer toolkits via APIs

Patrick Brosse, Senior Expert, API Design & Data model Governance, Amadeus

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IATA

amadeus

Data ecosystem:
APIs & Industry Data Model

Data model to Developer toolkits

via

Open APIs

Patrick BROSSE
Senior Expert : API & Data Model Governance (Amadeus R&D)
Vice chairman : IATA Data model Change Mgt. Working group
Athens , GREECE- 26 JUN 2019

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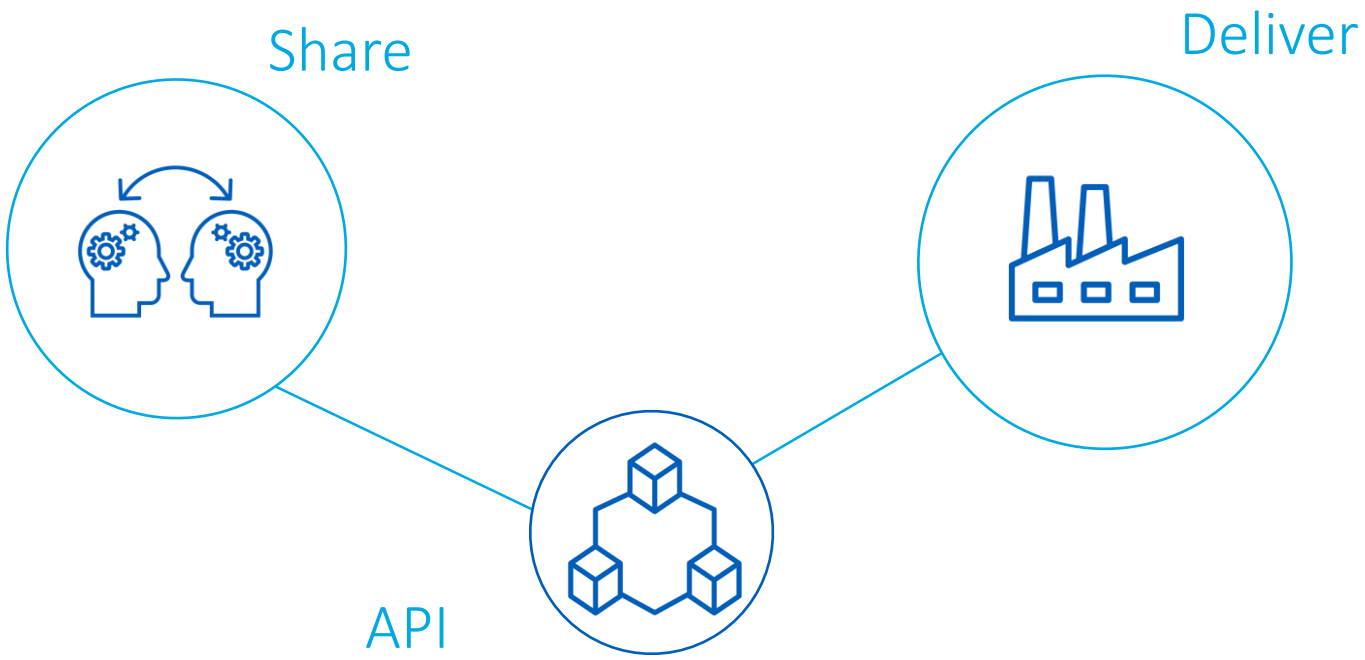
Agenda

IATA AIDM : Airline Industry Data Model



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Author : Patrick BROSSE

Company : amadeus

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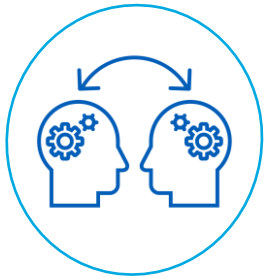
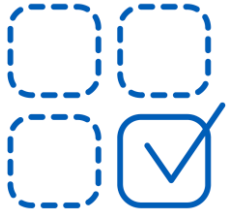
Share



/ companies / amadeus / business-units



aidm / terms / definitions

/ languages / data-model

/ iata / working-goups

/ experts / knowledge

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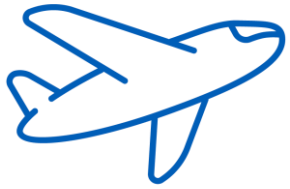
API

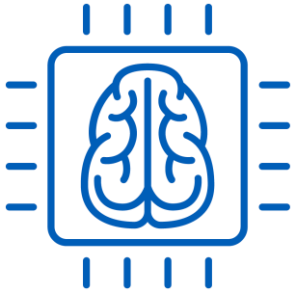


/ iata / open-api

/ api / standard

/ api / interoperability

/ smart-api



/ resources / rest-json

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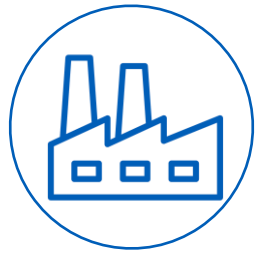
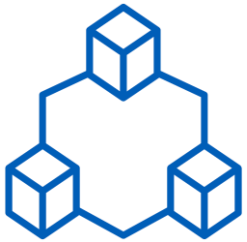
Deliver

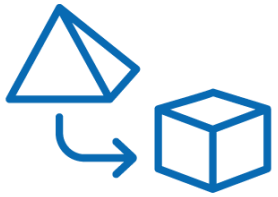


/ travel-industry / new-concepts

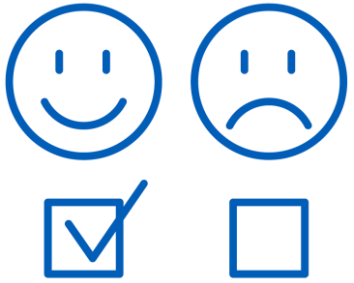


/ iata /data-model

/ smart-api



/ developer / toolkits



/ consumer-first

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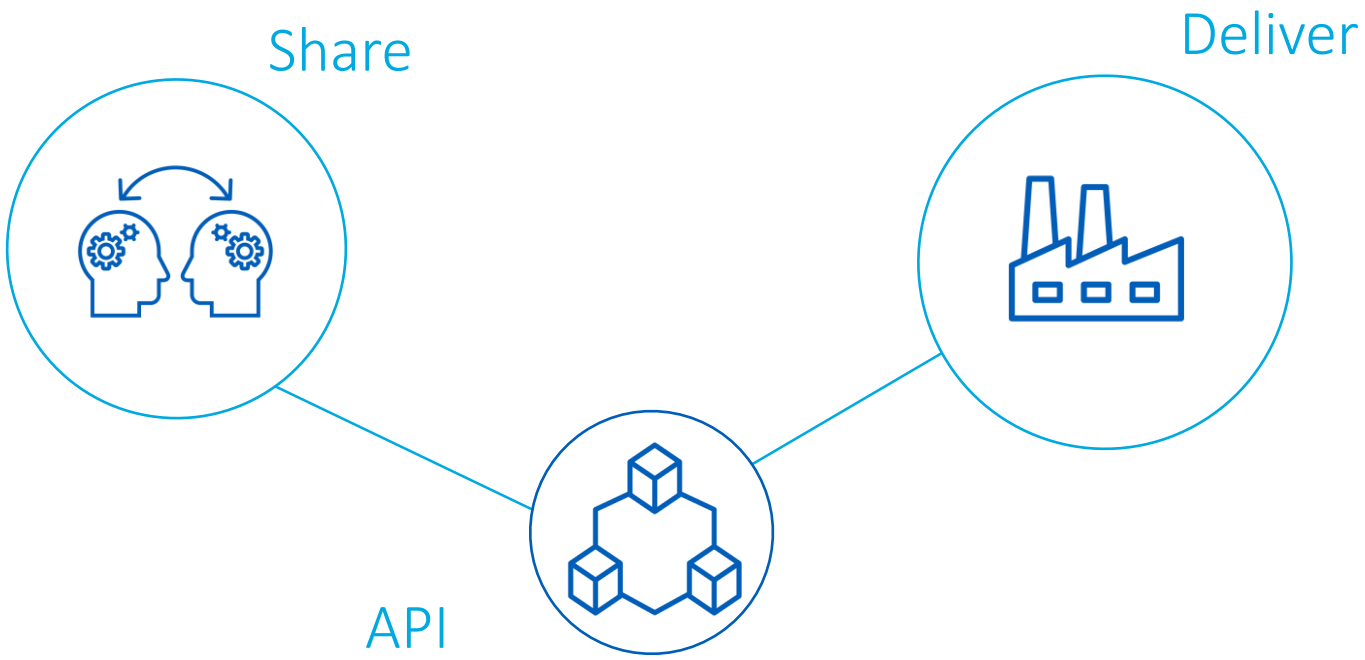
Key takeaways

AIDM : Airline Industry Data Model (SAD -> ADS)



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Key takeaways

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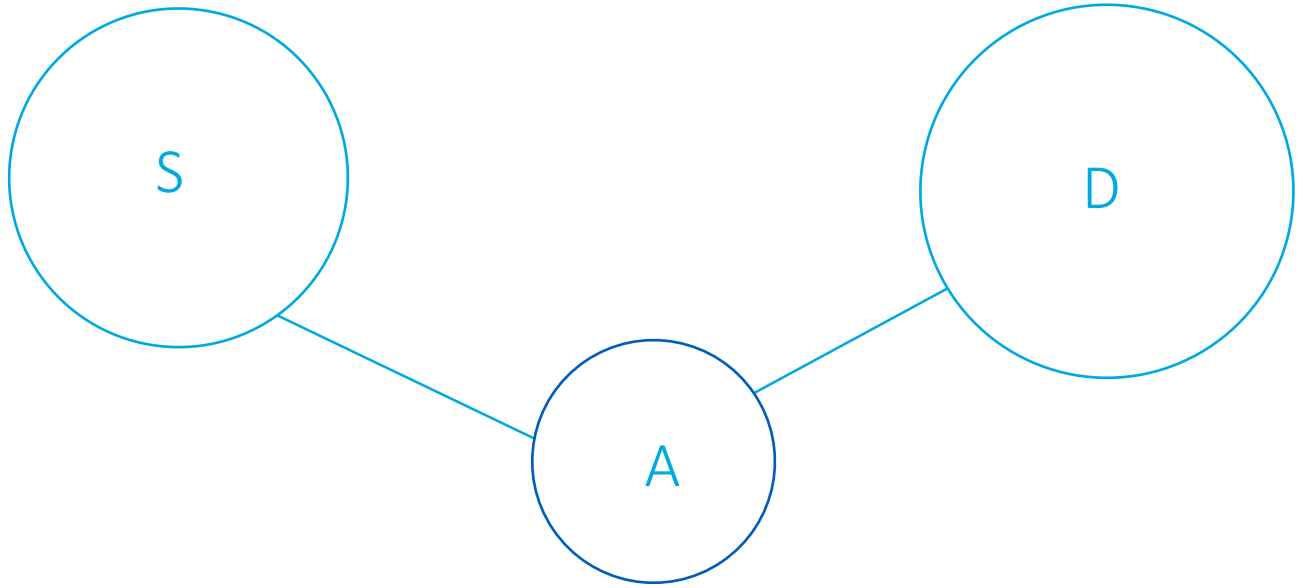

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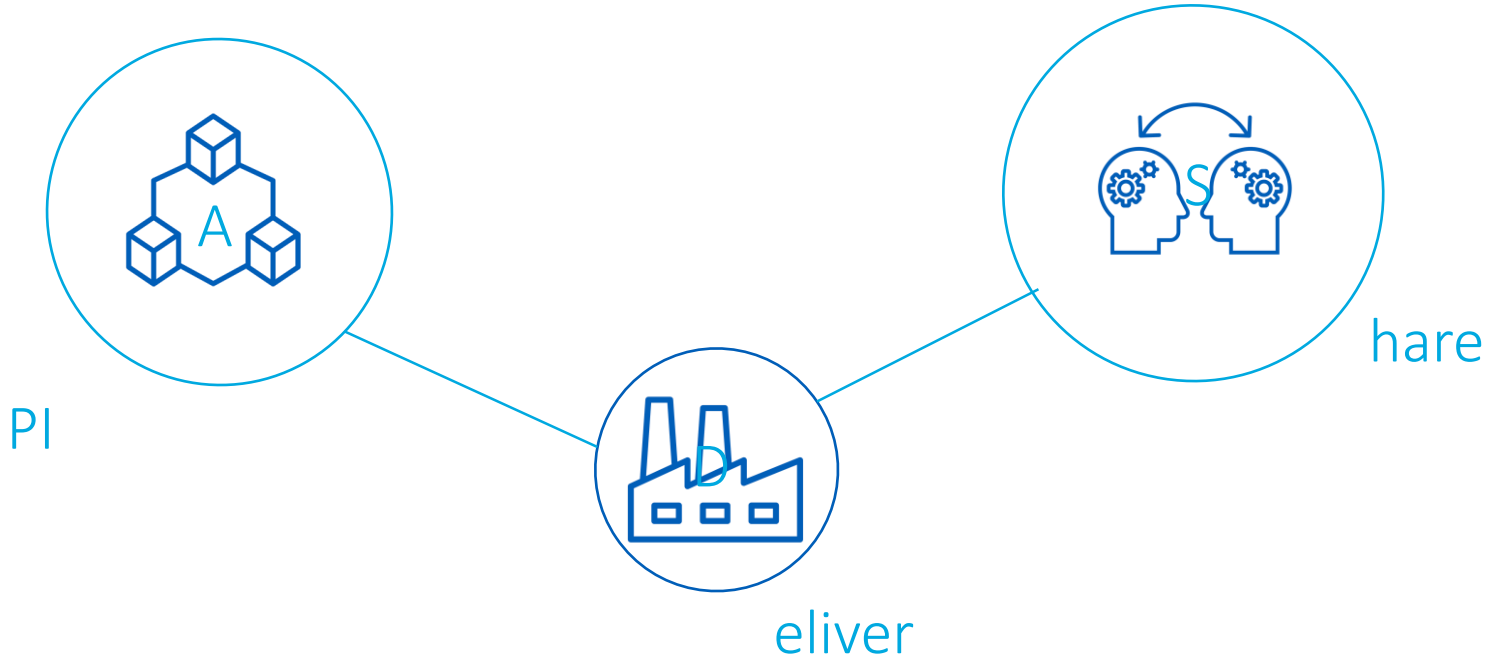
Key takeaways

AIDM : Airline Industry Data Model (SAD -> ADS)



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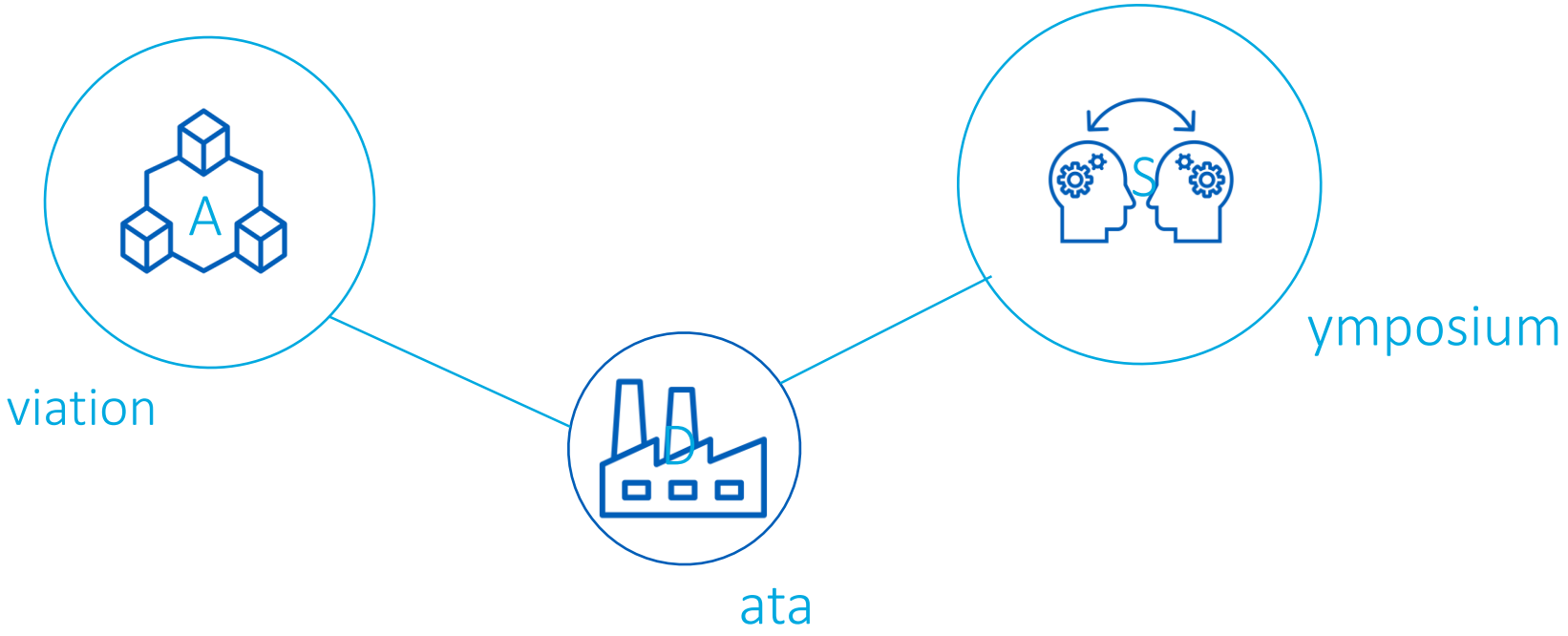
Aviation Data Symposium

Airline Industry Data Model -> Open API -> Developer toolkits



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Thank you!

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Fostering Innovation

Gianni Cataldo, Head of R&D, ATPCO

Open Data

Building Community through API

IATA

June 2019

What if I told you

STARTUPs

atpco + routehappy by atpco

BridgeLabs
atpco

Candidates Applied for membership 120

In Process 105

Graduates 17

atpco + routehappy by atpco

Data Incubation - Enablement

Calculated Content

- Total Price
- Carrier-Imposed Fees
- Baggage Fees
- Fare Rule Merge

Metadata

- Fare Rule Tags
- Historic Data

Derived Data

- Journey Engine
- Routings Engine
- Efficient Trips
- RBD Validation

Sandbox

- Full ATPCO Data Set – 1 week old
- No Private data
- Fare History for 18 months (growing)
- 24/7

Open Data Generating

- Innovation
- Time to Market
- Product Quality
- Engagement

Open Data Generating

- **Innovation**
- Time to Market
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Open Data Generating

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Open Data Generating

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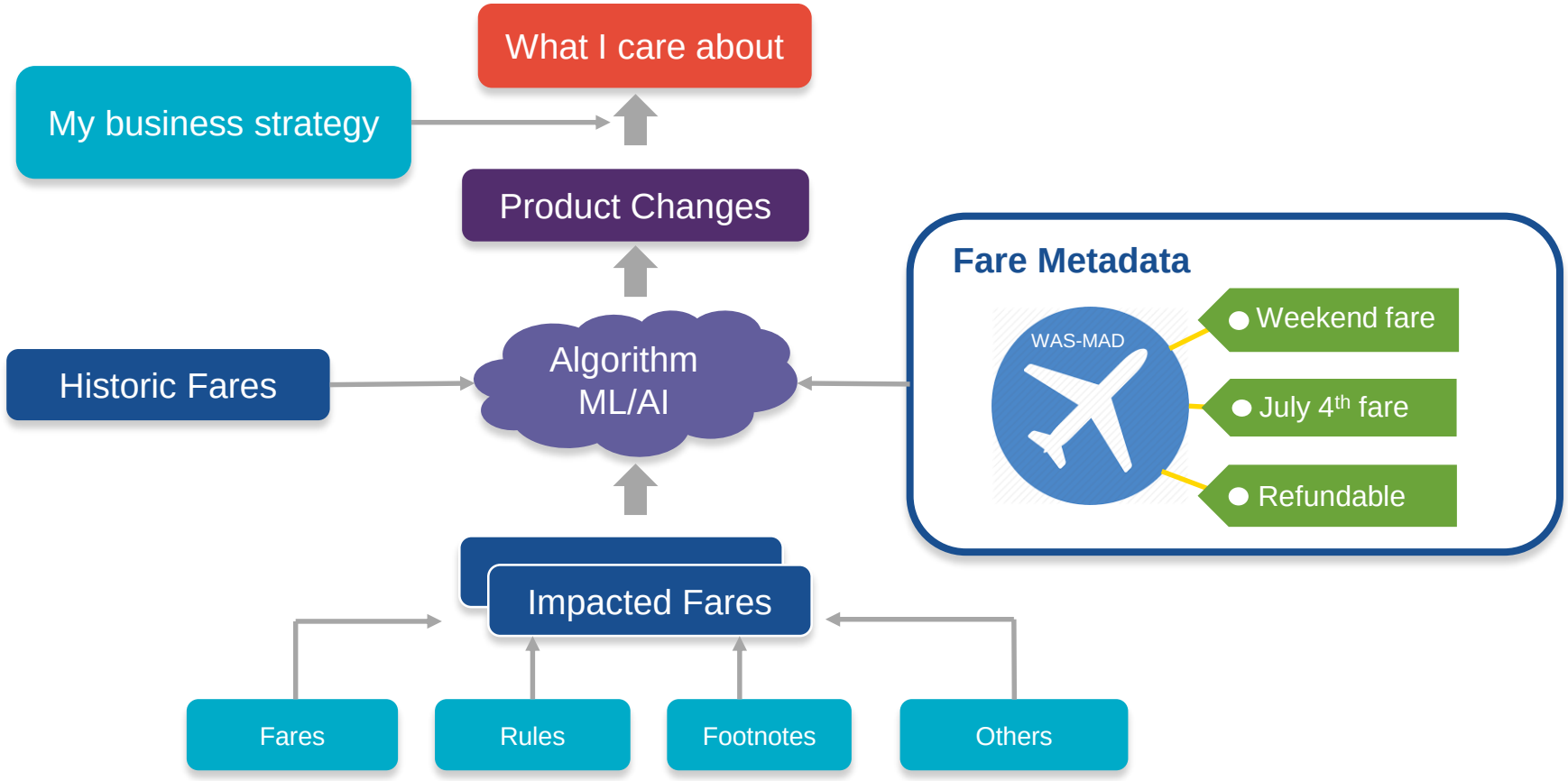
Open Data Generating

- Innovation
- Time to Market
- Product Quality
- **Engagement**

Designed by the community through open data

Common Data Pattern → What product was purchased



What success looks like

- Provide rebooking and re-accommodation solutions for airlines
- Machine learning algorithm needs to understand market price, from time of purchase versus today's price
- Decipher Fare levels at current price points to ensure new bids do not cannibalize revenue

Using

- Total Price
- Total Price + History
- RBD Validation to equate to next price point

Data Incubation - Industry

Calculated Content

- Tota
- Car
- Bag
- Far

Metadata

Bridge Labs Data Hub

ARC

atpco

routehappy by atpco

+ More

- Jou
- Rou
- Effi
- RBD Validation

k old

(growing)

- 24/7

atpco + routehappy by atpco

Ready for your travel idea to take off?
Let's innovate together
atpco.net/bridge-labs

atpco.net

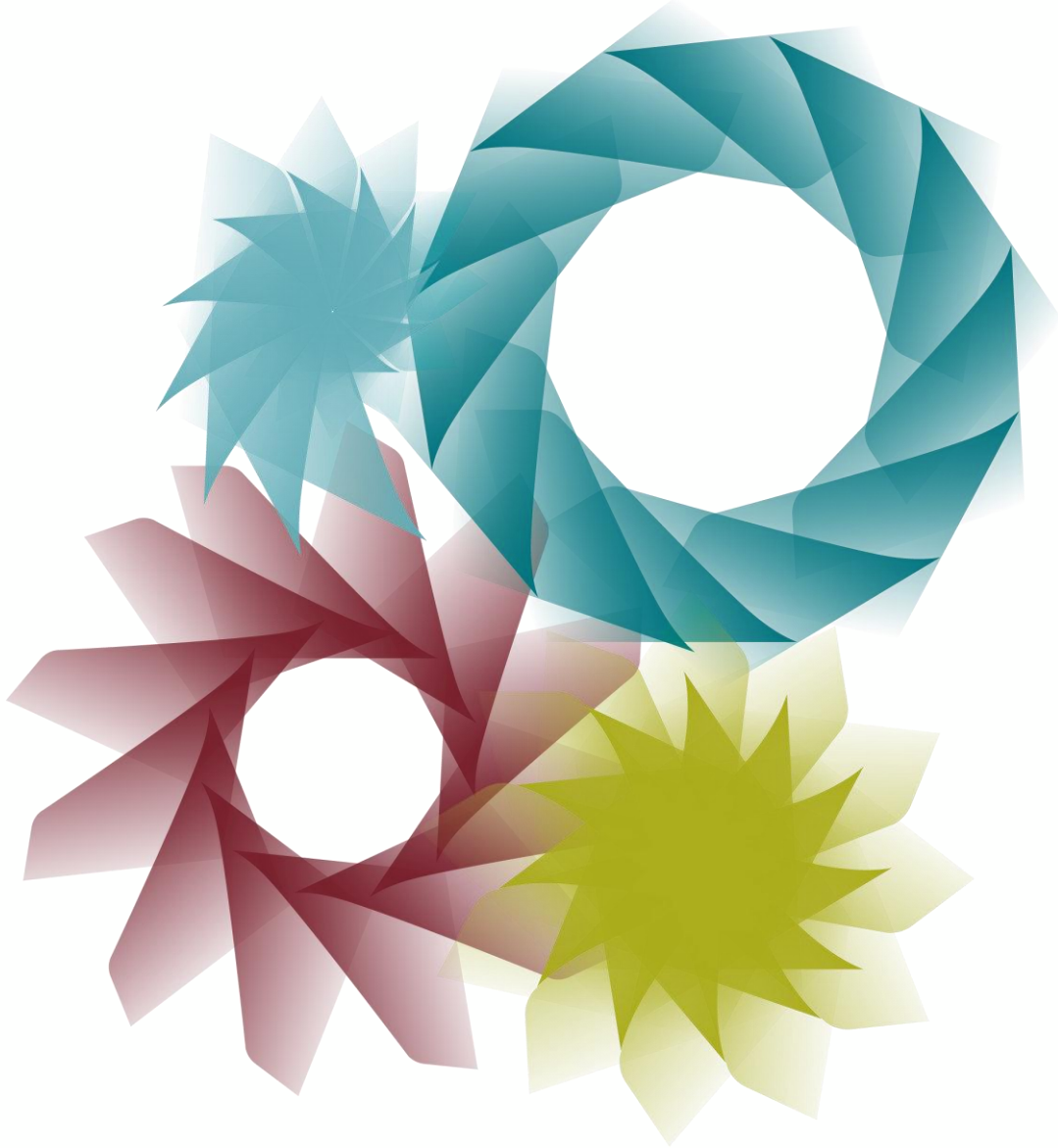
IAG and the data ecosystem

Matthew Keiller, Senior Architect, IAG

IAG GBS
Global Business Services

IAG and the data ecosystem

Benefits of Open APIs and AIDM



26 June 2019

IAG API Vision

Business Innovation through APIs

- Ability to grow and fail iteratively
- Being prepared for the unknown
- Enable new channels, new revenue streams
- De-couple monolith architectures, give IT agility and flexibility
- Business strategy to become Digital first

Enable ‘plug & play’ model

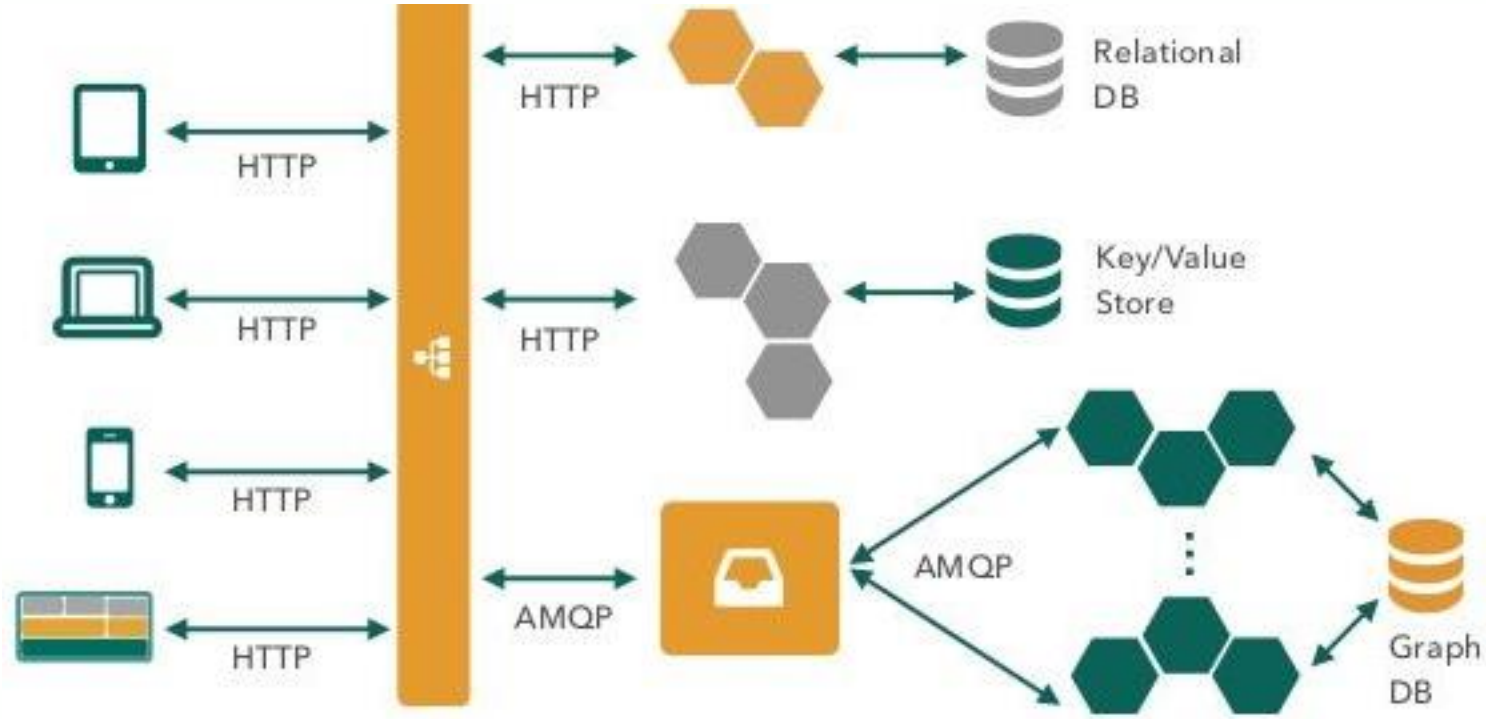
IAG structure enables organic and inorganic growth.

- Digital Platform to grow revenue streams, enhance customer loyalty and drive cost-efficiencies
    - AIDM gives independent standard across the brands
    - Avoids being seen as dominance of one brand/culture

Focus on value creation

Domain models for microservices

- Use AIDM as base for shared, uncontroversial entities
  - Focus on extensions which give competitive advantage
  - Enables speed to market



Integration between Standards

Existing IATA standards developed in a siloed world

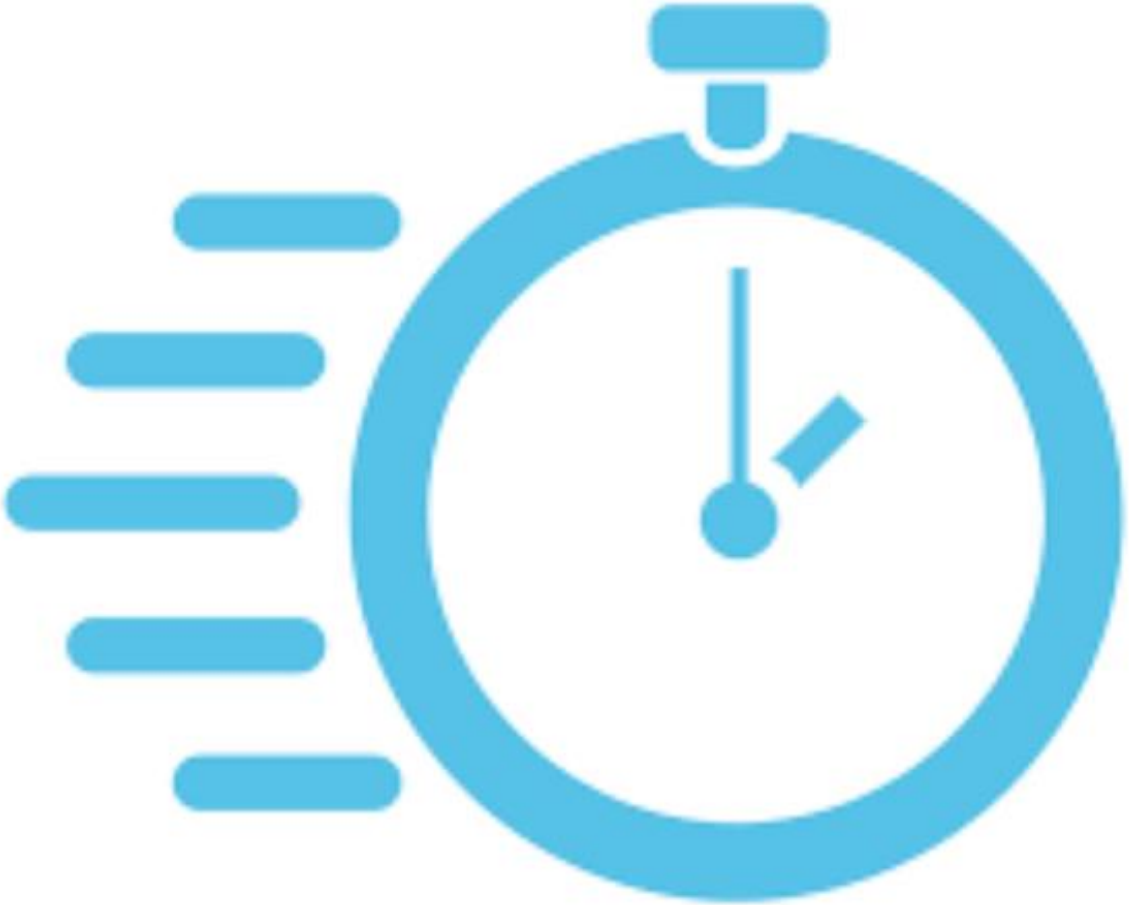
- Combining AIDX with SIDX
- Definition of a ‘passenger’

- That was fine until we needed to integrate data from various sources
- Can now bring those standards together, keep what works in it’s own domain, but know that underneath is a defined and governed understanding

Speed to market of compliant APIs

Ability to deliver APIs in an agile manner

- Compliant with IATA standards
- Deploy now, ratify later
- Enables early adopters



IAG GBS

Reality check and future prospects

Marcus Wagner, API Manager, Lufthansa

IATA ADS 2019
Reality Check & Future Prospects

June 2019, Athens

Marcus Wagner, API Manager

How did we get here and what is ahead of us

The airline industry has come a long way

Airline industry in its beginnings

Flights, passengers and ticket stock

The recent years

Changes throughout the decades

Austrian Lufthansa SWISS LUFTHANSA GROUP

What are we doing now

Airlines in control and IT is part of the product

Airline’s IT goals

Support the business.
Create seamless customer experience

Airline's IT Challenges - 1/4

Open and accessible providing high quality data and distribution capabilities *while* retaining strong control

Airline's IT Challenges - 2/4

Personal and aware *while* respecting customer's privacy

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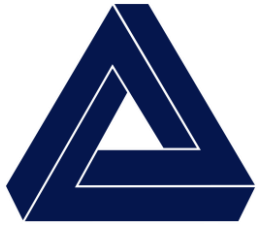
Airline's IT Challenges - 3/4

Integrate at scale *while* having trusted partnerships

Airline's IT Challenges - 4/4

Easy and fast processes *while* creating and following industry standards

Cutting the Gordian Knot



Use technology and an open mind

Open and in Control

Establish API Management with best practices from IATA Open Air Group

Integrating at Scale and Trust in Partners

Identity Management – Trust Models, centralized and distributed within Technology and Architecture Groups

Personalized with Privacy applied

Put customers in control with API technologies such as OAuth2 and OpenIDConnect

Easy, fast Processes with Standards baked in

Support airlines' development toolchains with open information, guidance and tooling

The way ahead

We create the foundation for the next iterations

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The Takeaway

Technology helps, but people do solve problems

IATA Members are invited to look into and participate to challenge, cooperate and co-create

Architecture and Technology

IATA Open Air

IATA AIDM

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IATA

Discussion on Open API framework

Moderator: **Matthew Mckinley**, Senior Manager, Technology Standards, IATA

Matthew Keiller, Senior Architect, IAG

Gianni Cataldo, Head of R&D, ATPCO

Patrick Brosse, Senior Expert, API Design & Data model Governance, Amadeus

Marcus Wagner, API Manager, Lufthansa

Networking Break

GROUPE AZUR

Turning Trip Friction into an Opportunity

Scott Gillespie, Head of Analytics, ARC

Traveler Friction

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Source: scott@tclara.com

What does traveler friction look like?

10% of All Travelers*

35 Trips

138 Time Zones Crossed

88 Nights Away (4 Work-Months)

267 Flight Hours, Nearly 7 Work-Weeks

88% of Flight Hours in Economy Class

62% of Flight Hours, or ~4 Work-Weeks, on Personal Time

*Averaged across 10,564 travelers who each were at or above the 75th percentile for each metric shown above as measured by the ARC 2015 Trip Friction® Benchmark Database, covering 110,000 travelers in 2015

The business case for Business Class

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Must focus on road warriors

Road warriors are those who travel at least 35 nights a year.

of all
Business
Travelers

of all
Travel
Spend

of all
Travel
Value-Add

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Source: ARC Data, tClara analysis; value-add is Scott Gillespie's estimate

Trip Success Rate

63%

Share of trips taken in the last 12 months rated mostly or very worthwhile

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Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

Estimated Road Warrior Attrition Rate*

14%

Share of 2016 road warriors who did not travel under the same ARC ID in 2017
N = 1.2 million travelers who took at least eight trips in 2016

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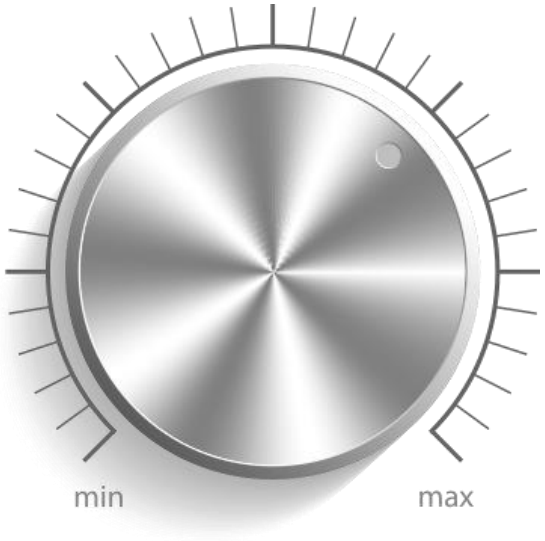
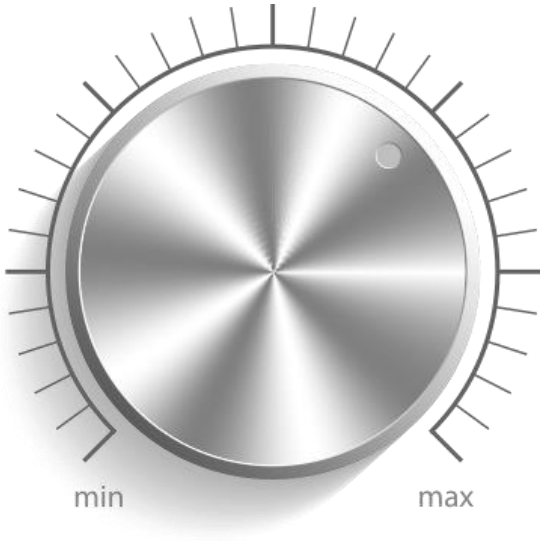
* Includes travelers who are still employed but have stopped traveling. Source: ARC

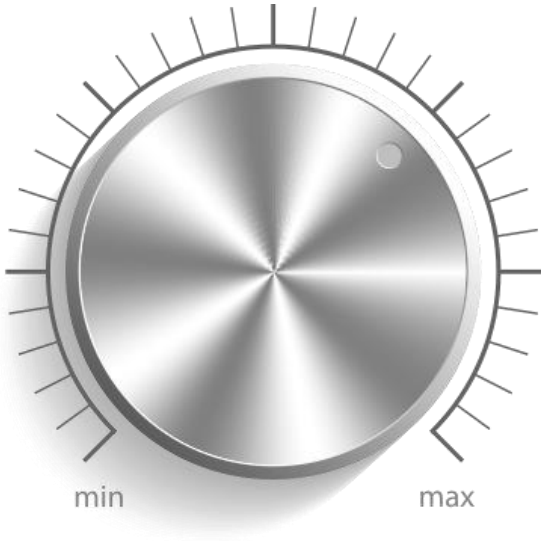
Can we improve any of these outcomes?



Trip Success



Retention



Wellness

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Do travel policies affect outcomes?

We compared results from 742 U.S.-based road warriors managed by different types of travel policies.

Cost-Focused Policies

Traveler-Focused Policies

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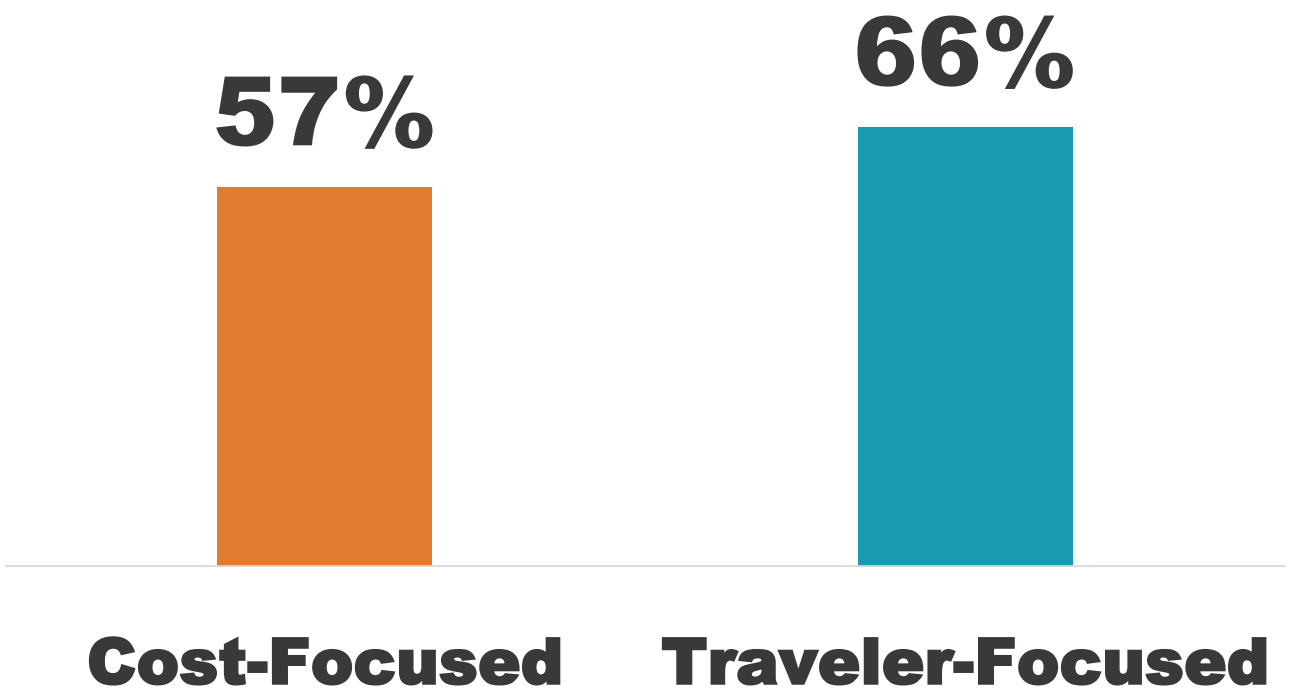
Want higher trip success rates? Traveler-focused policies are better.



Share of trips rated as mostly or very worthwhile

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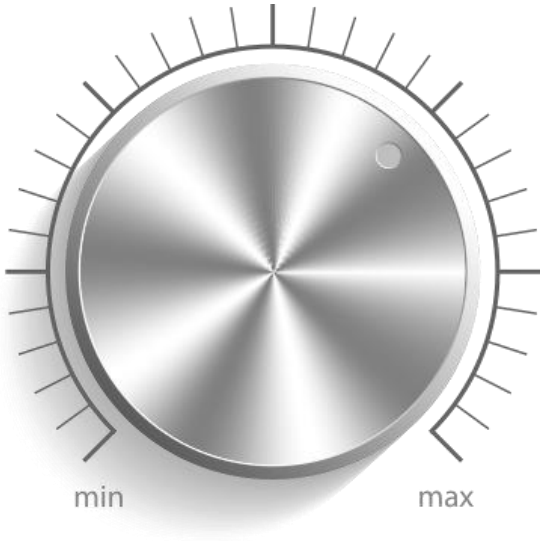
Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

What is most important for



Trip Success?

Overall

Better Sleep

Business Class 6+ Hours

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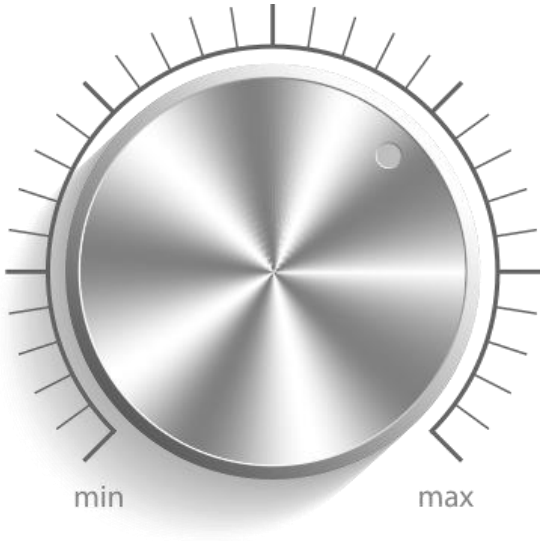
Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

What is most important for



Trip Success?

Airlines

On-Time Arrivals

Priority Boarding, Preferred Seat

Non-Stop Flights

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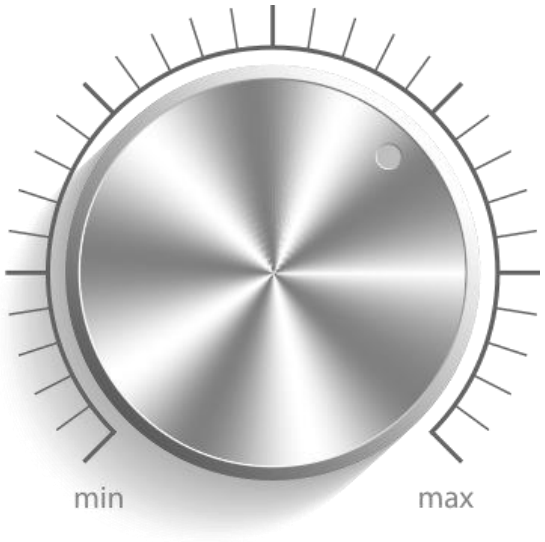
What is most important for



Trip Success?

Airports

Short Wait at Security

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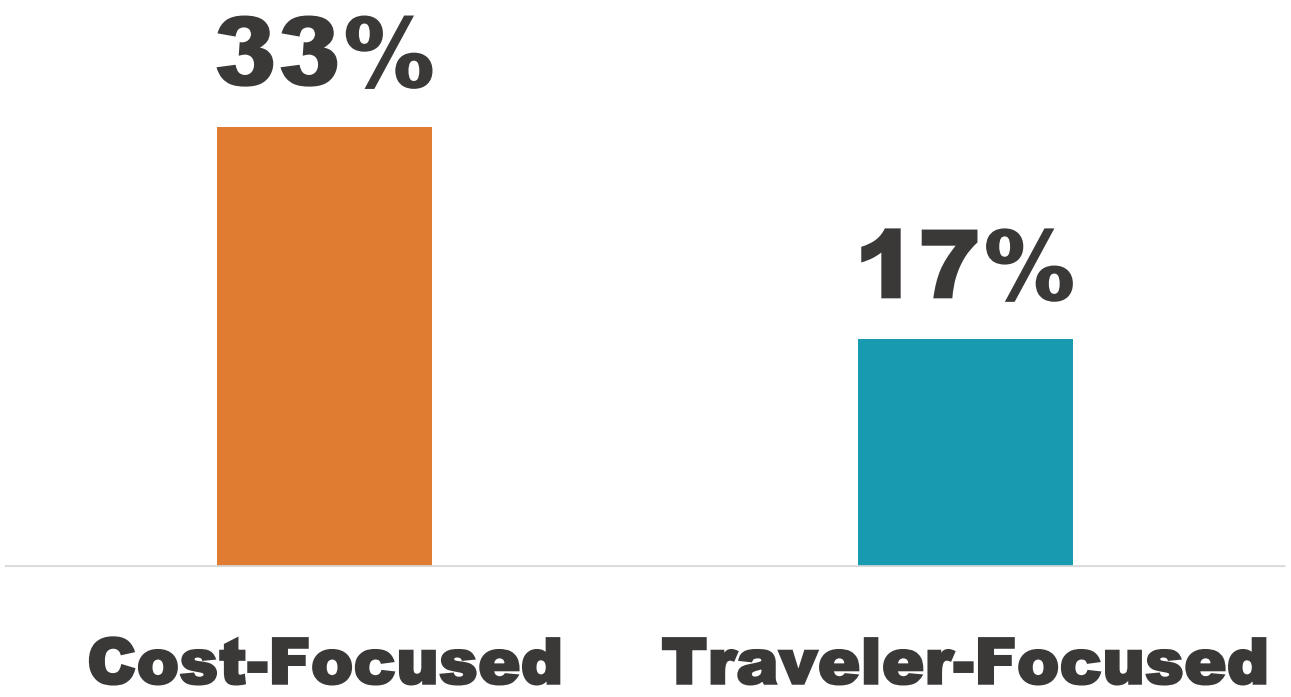
Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

Want lower attrition risk? Traveler-focused policies are better.



Average self-estimated probability of leaving within the next two years

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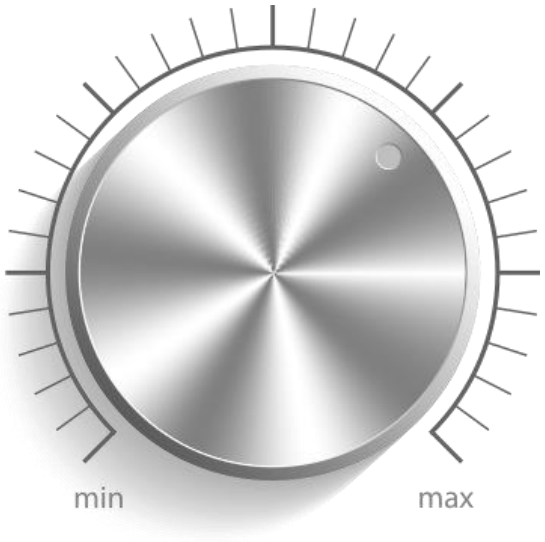
Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

What is most important for



Business Class

Use Less Personal Time

Better Hotels

Retention?

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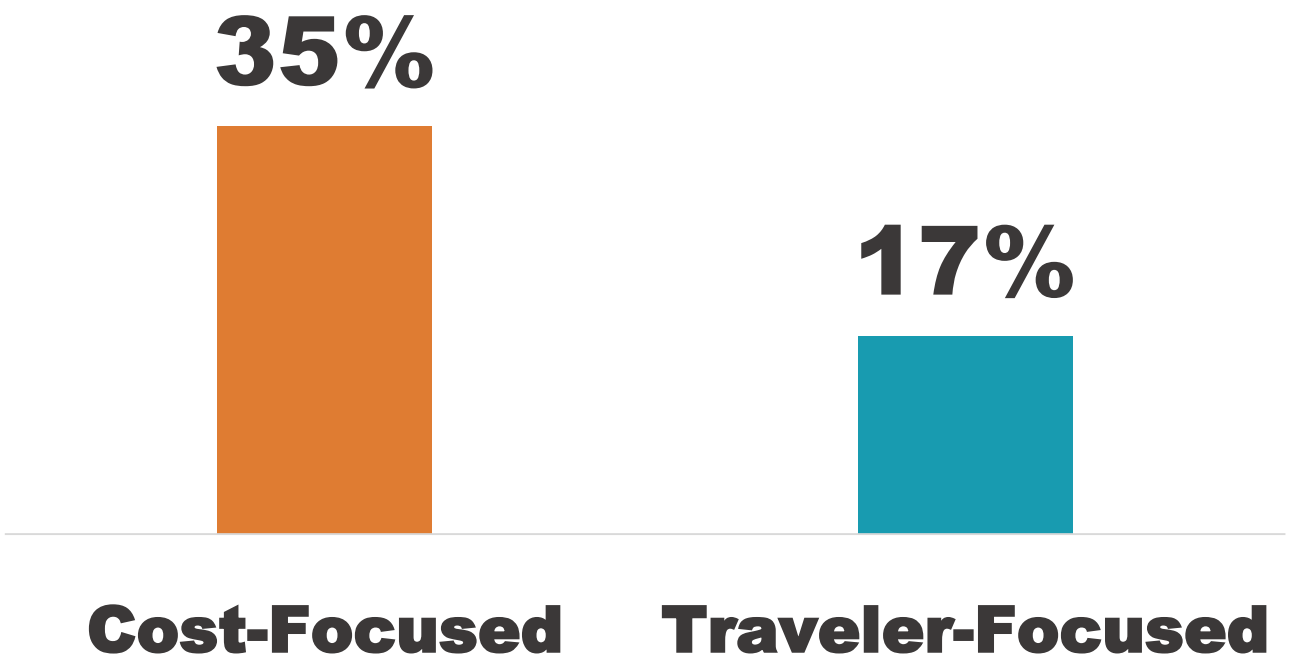
Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

Want fewer negative health impacts? Traveler-focused policies are better.



Share of travelers who say travel has negatively impacted their health

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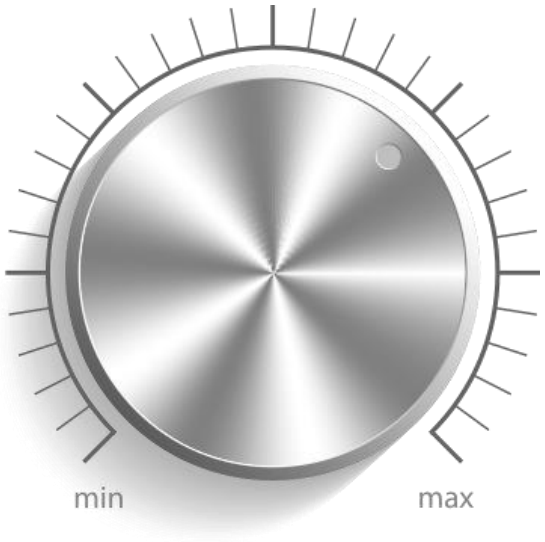
Source: “Achieving Better Business Travel Results” 2018 by ARC, Delta, FlightGlobal, tClara

What is most important for



Better Sleep

Healthier Meals

More Time to Exercise or Relax

Wellness?

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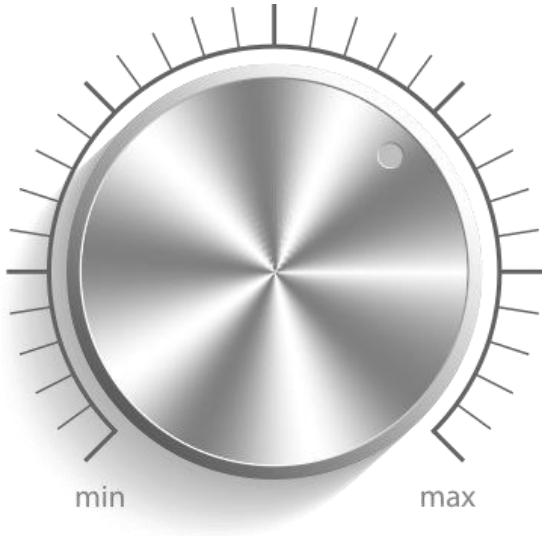
Leading companies are re-designing their travel programs



Trip Success
Retention
Wellness

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To get a positive business impact!

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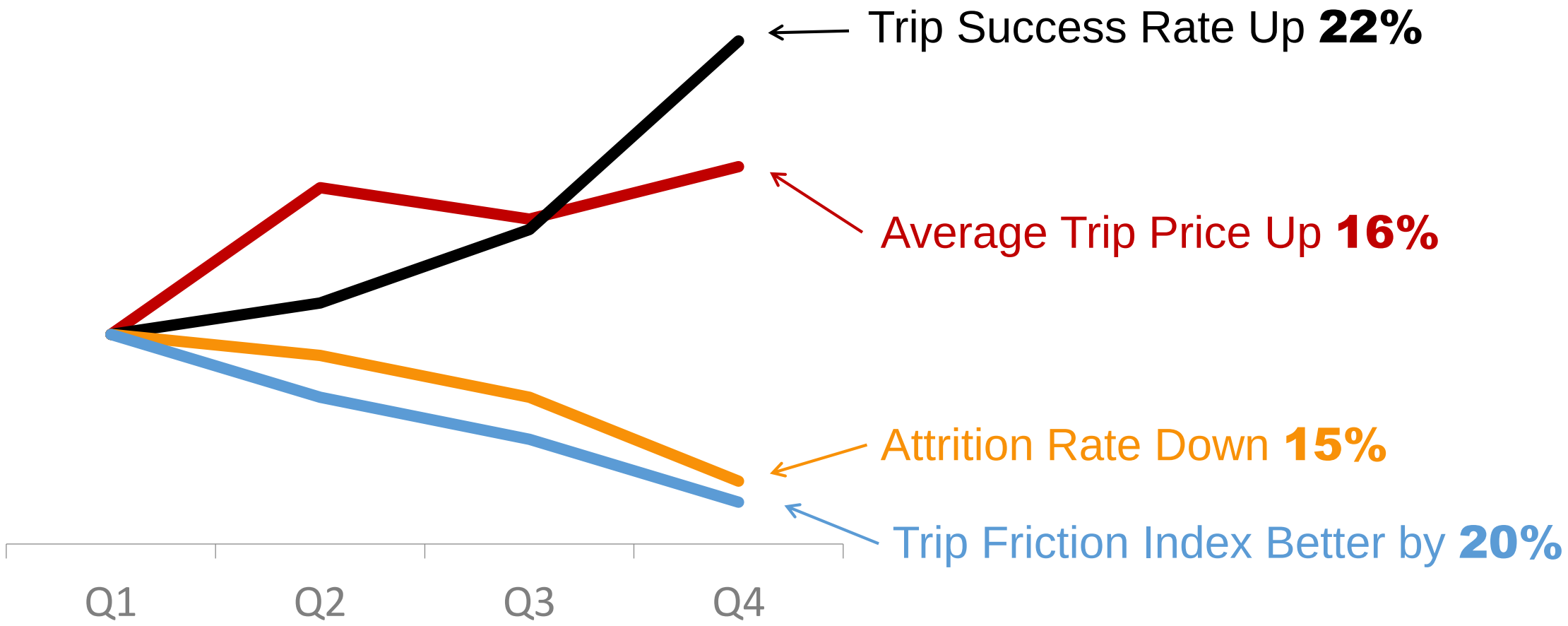
New KPIs will show strategic value.



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Intelligent Irregular Operations Data & New Processing Capabilities

Uschi Schulte-Sasse, SVP Aviation, Inform

Intelligent Irregular Operations

New Data & New Processing Capabilities

Uschi Schulte-Sasse
SVP Aviation INFORM

ADS2019, Athens, June 26th, 2019

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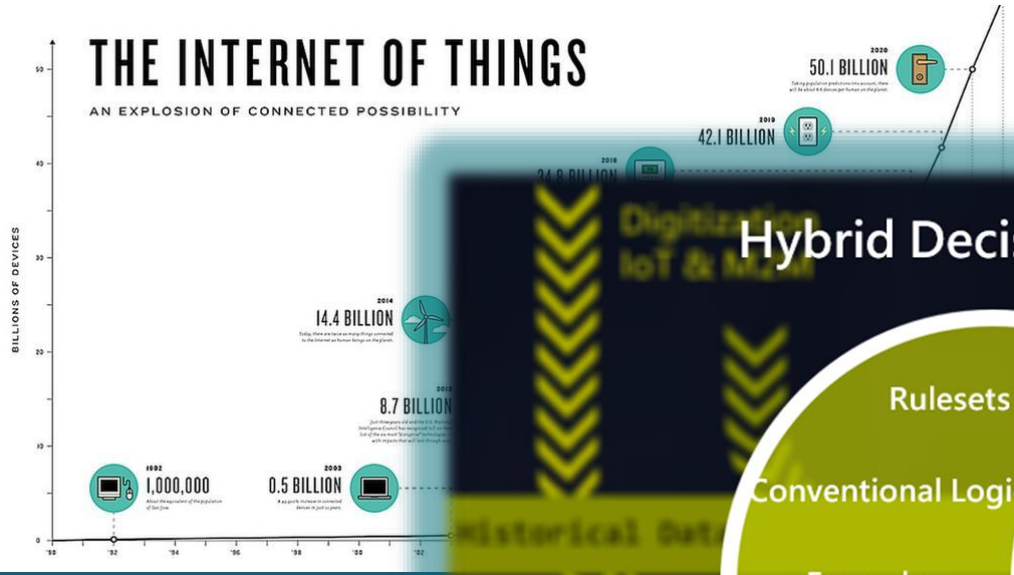
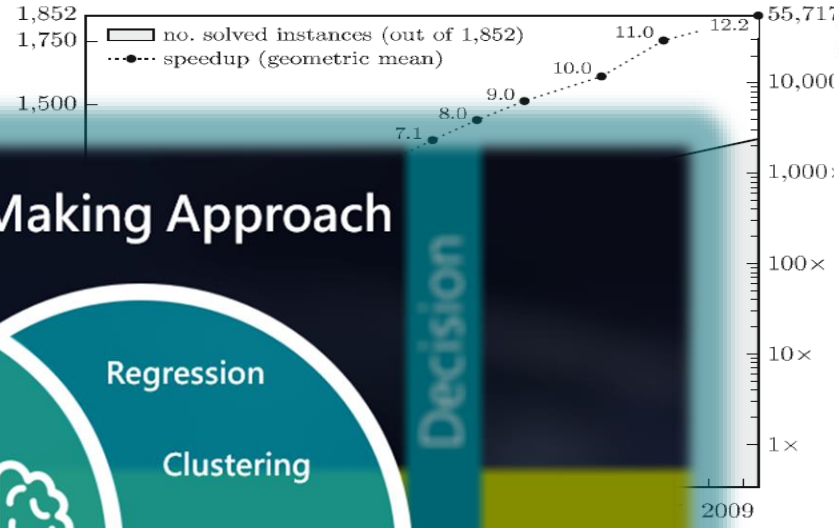
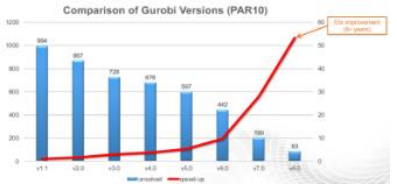
DELAYED

New Data and new Processing Capabilities







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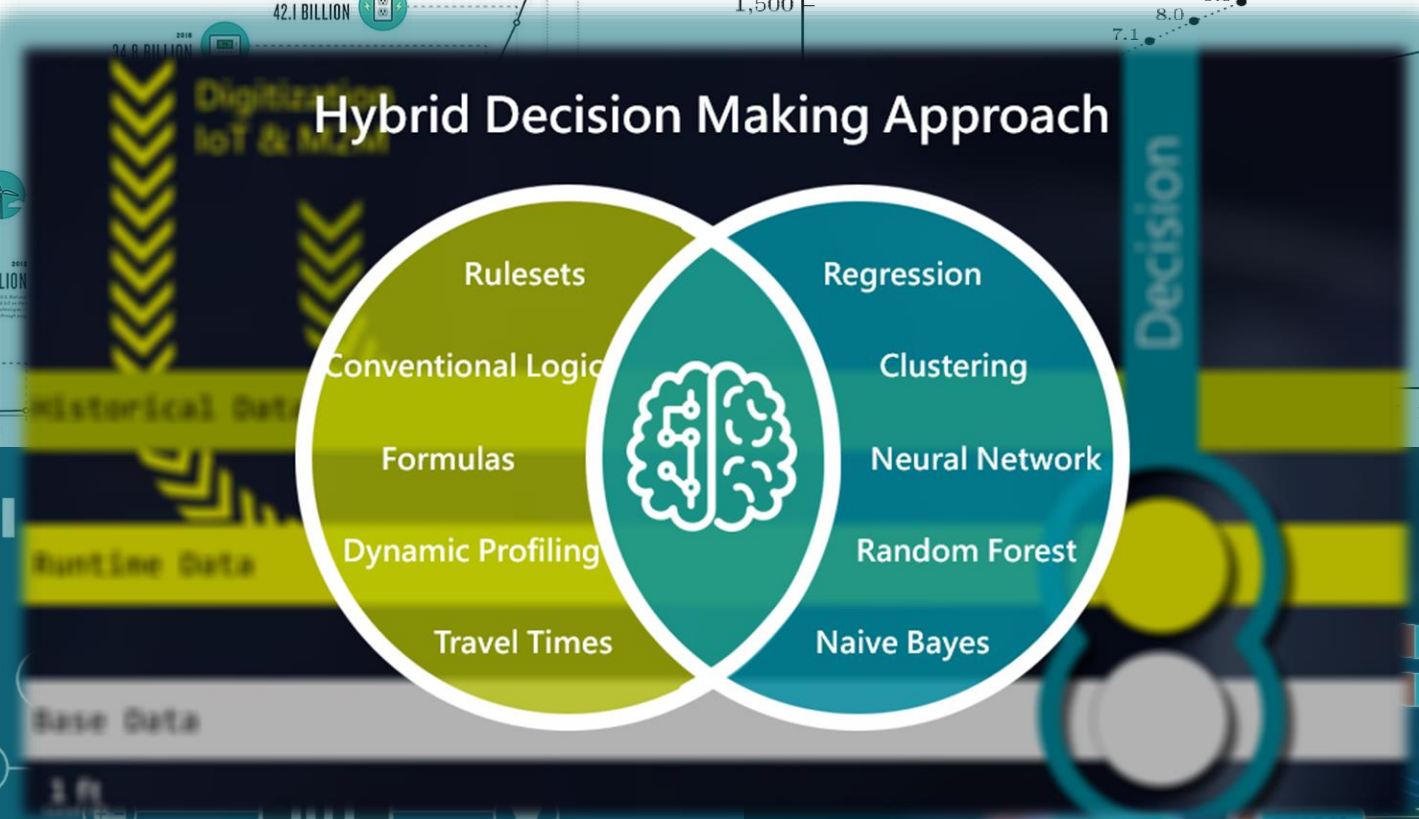

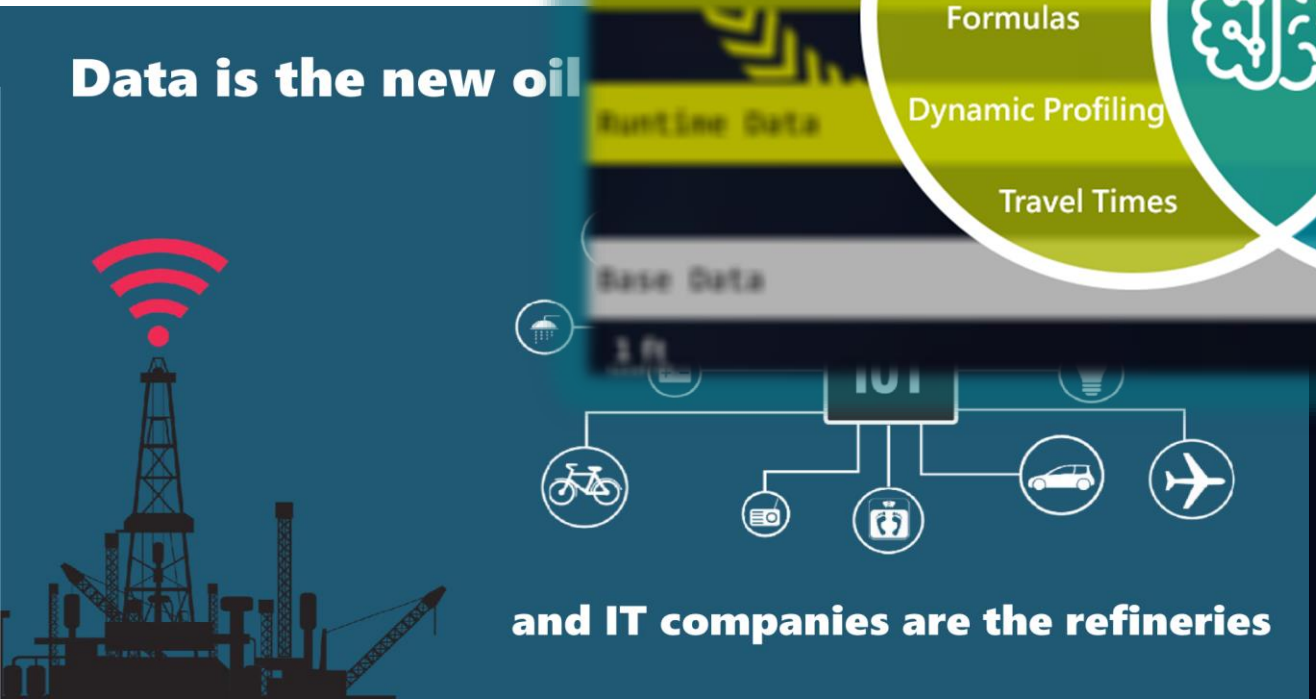

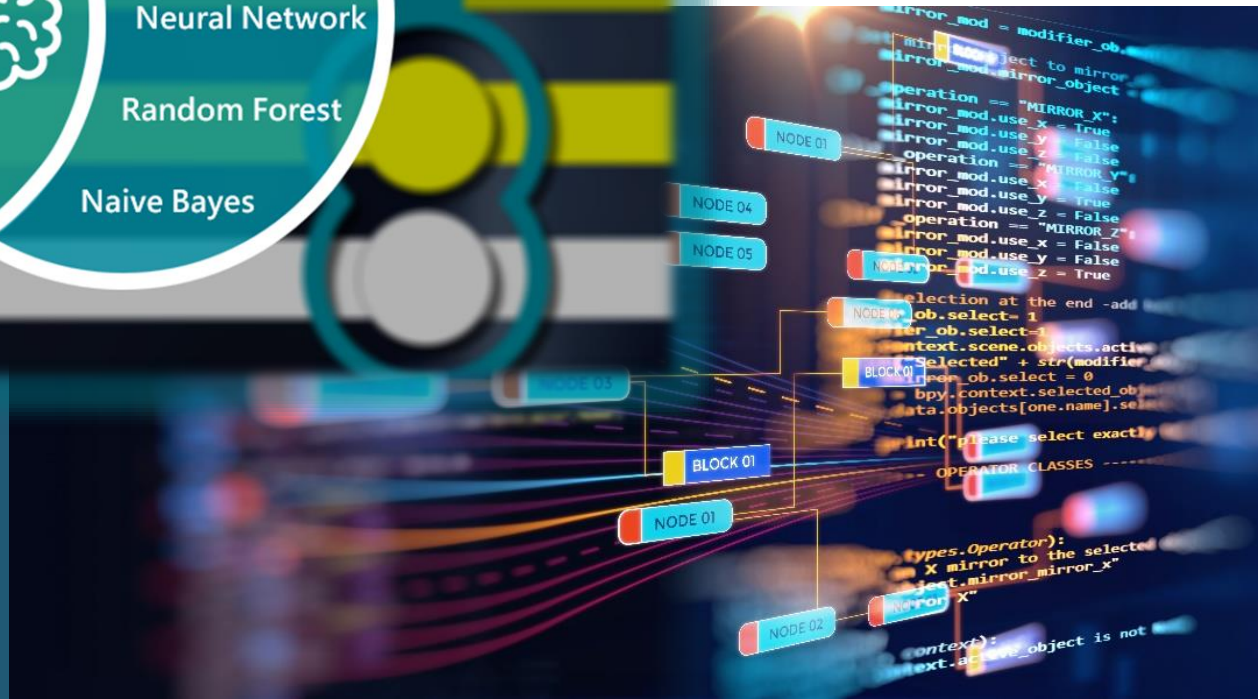

Regular Challenges

Will passenger/baggage/cargo connections be disrupted?

When will the transfer passengers board?

Should a flight be delayed to wait for connections?

Can a disruption be resolved without taking a delay?

Who is responsible for an irregularity of a turnaround?

To which flight should passengers be rebooked?

Who and where are the high-value passengers?

Will there be terminal congestions?

Which connections are regularly disrupted?

How to stay on top of operations in case of flight disruptions?

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Benefits of existing Solutions, like GroundStar Connect

- Detect misconnected passengers and bags proactively
- Decision support for disruption handling
- Reduce number of passengers at the transfer desks
- Focus on most critical/high-priority flights
- Cost-based decision of delay vs. rebooking
- Improve passenger satisfaction by avoiding unnecessary disruptions
- Provide passengers with information and assistance for short/missed connections
- Increasing staff productivity (management by exception)
- Reduce knock-on effects

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Transfer Disruption Handling - Challenges & new Approaches

Connection monitoring crucial for successful airlines

- High transfer passenger numbers in hub airports
  - 36% (LHR) to ~80% (DXB)
- Growing passenger numbers and tighter schedules
  - 5% passenger growth (rpk) (IATA 2019)
  - 4,58 billion passengers flying in 2019 to 8,2 billion in 2037 (IATA 2018/2019)

Still we aim to

- Improve **passenger experience** while
- **reducing work load**
- and **increasing revenue**

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Transfer Disruption Handling – Decision Support Network-wide

Overall Optimization

- Network-wide decisions
- Decide to delay flights
- Aircraft changes
- Rerouting rebooking options

Cost based

- Fuel cost
- Crew rotation cost
- Knock-on effects

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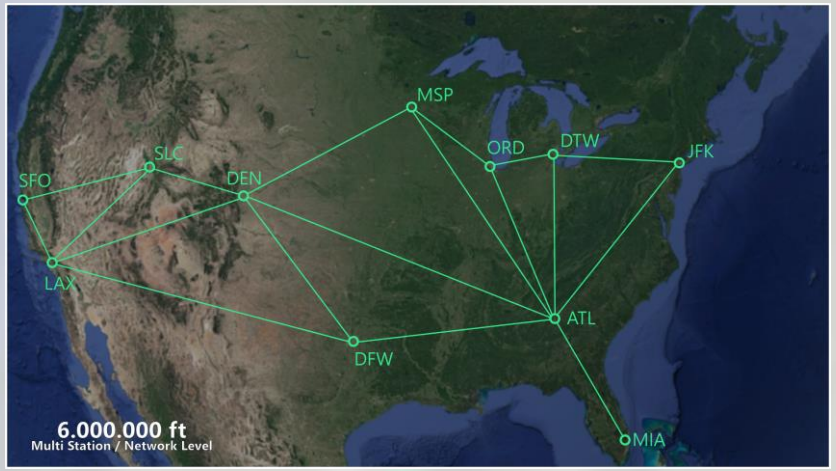
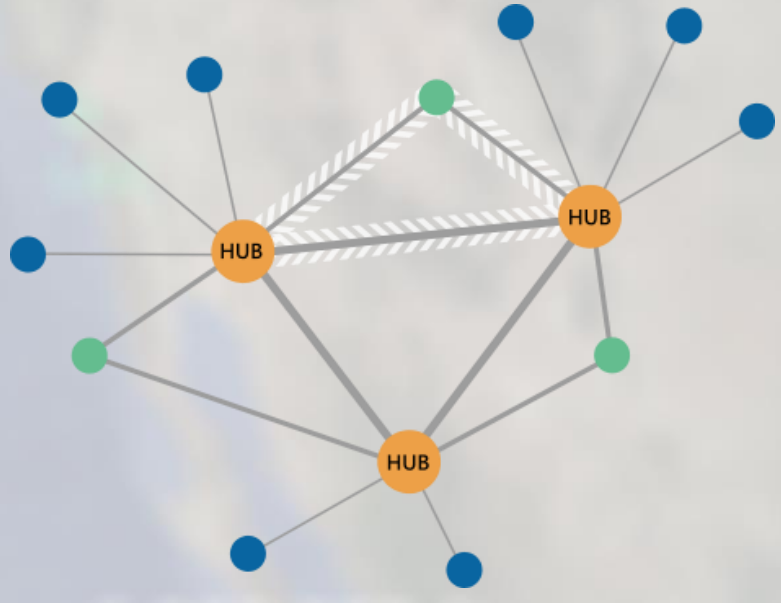
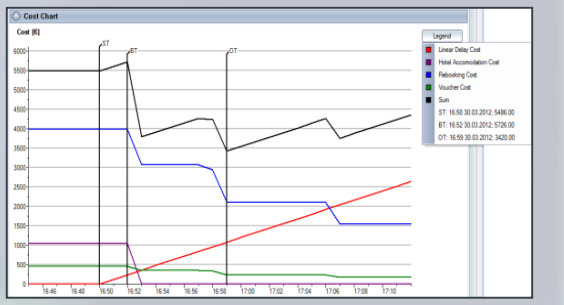


Network-wide Resource Optimization



- Network-wide transparency
- Delay propagation
- Proactive network balancing
- Multiple MRO stations
- Network-wide cost model



Transfer Disruption Handling - Passenger Experience

Optimizing Passenger Experience can be tricky…

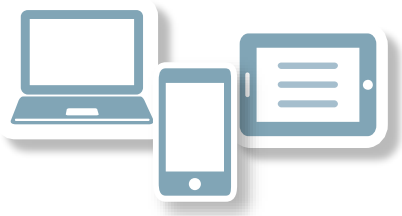
Example: Improving the speed of train travel

Engineers: Build new high-speed rail line

- Reduces 30 min off an 80-minute trip
- Would cost over $30bn

Behavioral economics: Install free Wi-Fi

- Trip is perceived more comfortable
- Would cost only a fraction



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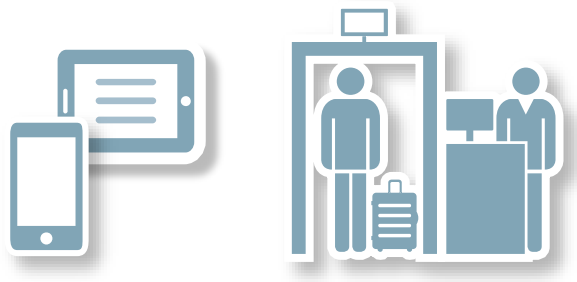
Transfer Disruption Handling - Passenger Experience? Social Rebooking!

Keep in touch

- Push new tickets/vouchers to mobile devices
- Track passengers



Get Feedback

- Define Experience KPIs
- Arrival Time, Travel Agony

Get Passenger preferences

- Some may not care about punctuality
- Let passengers trade flights, Vote/bid for decisions
- Sell favored rebooking rights

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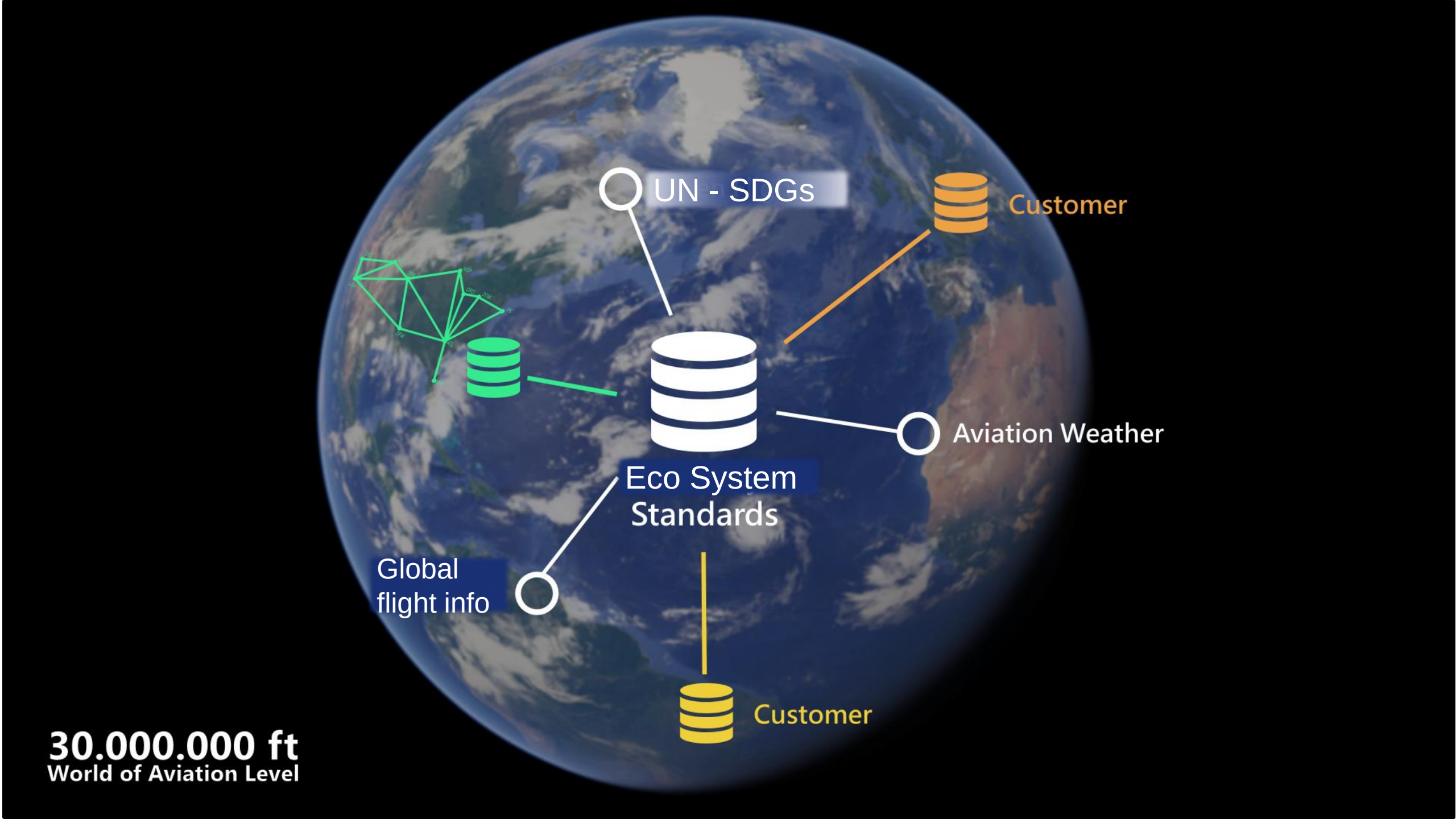
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Uschi Schulte-Sasse
SVP Aviation
uschi.schulte-sasse@inform-software.com
Mob. +49 (0)175 7208 411

Intelligent irregular operations how do we get there?

Moderator: **Henry Coles**, Head of Airline Distribution Standards, IATA

David Kershaw, Portfolio Director Airport Passenger Processing, SITA

Uschi Schulte-Sasse, SVP, Aviation Division, Inform GmnH

Uschi Schulte-Sasse, SVP Aviation, Inform

Al Tredinnick, , Head of Business Development, 15below

Networking Lunch

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