

Everyday People

Can we improve our operational performance if we know more about the people on our planes?



OUR JOURNEY IN UNDERSTANDING “THE TURN”





We studied the

We explored the
improvement

We learned various

DISSECTING THE TURN TO IDENTIFY DATA NEEDS

IN SUMMARY

-  Leverage and integrate all data available to you
-  Create data where you don't have data
-  Let the data be your guide for improvement
-  Engage People to round out the story

TAXI-OUT TAKE-OFF


IMPROVEMENT

...cure crew changes is a critical
...um. Data told us we have
...to improve.

...s for closing a flight (last scan to
...is highly variable. This variation
...On Time Performance.

...ng our aircraft is important to ensure
...have what they want on each flight.
...king to eliminate transportation
...ified in this process.

available to you

e data

rovement

story

OF COURSE WE SHOULD INCLUDE PEOPLE DATA

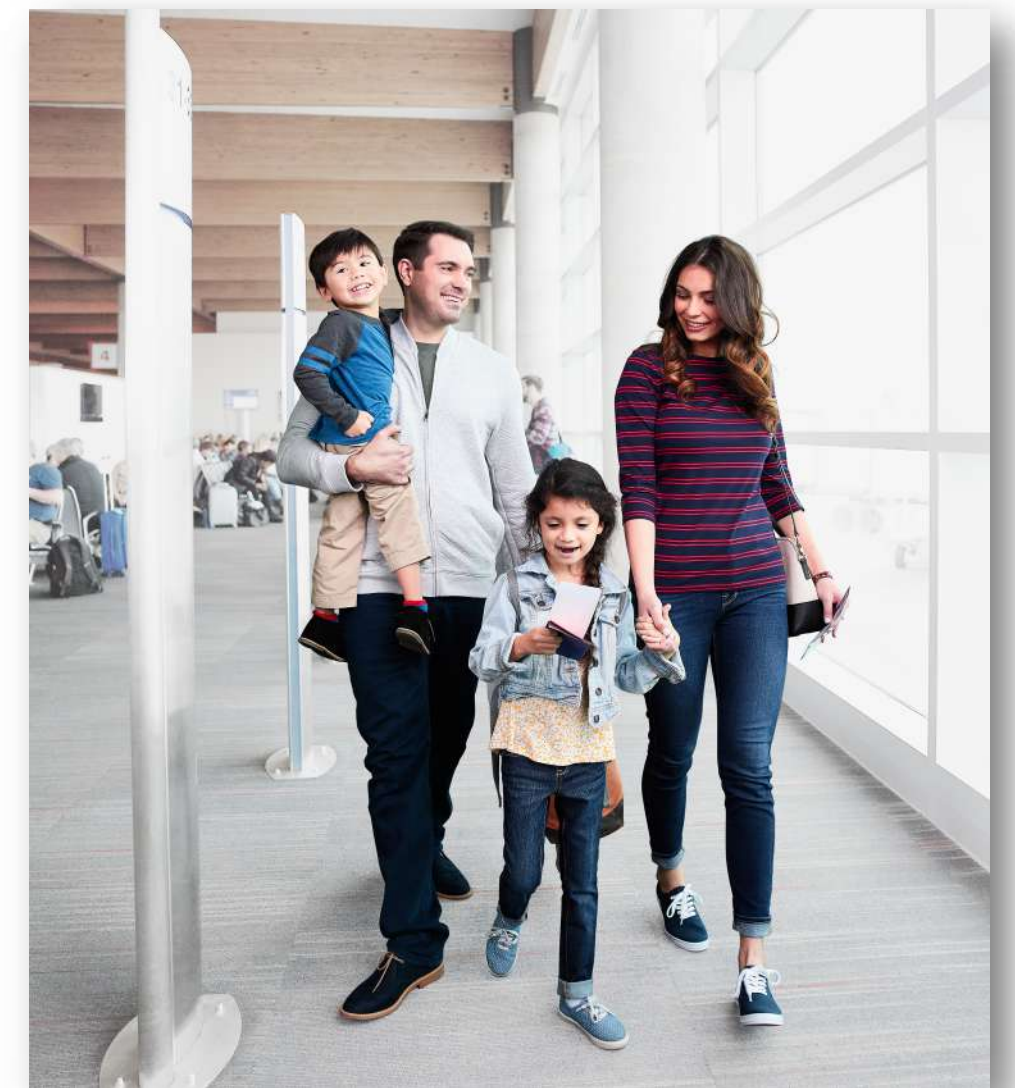


IS THERE MORE TO LEARN ABOUT THE TURN?

What is missing?



Everyday People!



ONE PLUS ONE EQUALS 3!



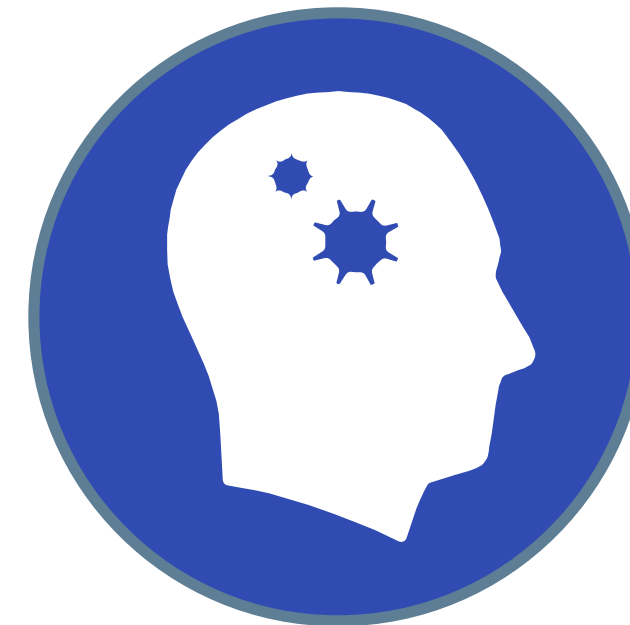
Operational Factors

Pax
Bags
Wheelchairs
Freight
Crew change
Time of day
Day of week



Human Factors

Checked bag %
Business Travel %
Flight Recency
Haul length
Avg Length of Stay













- On Time?
- How long?

HOW MUCH IMPACT DO PEOPLE REALLY HAVE?

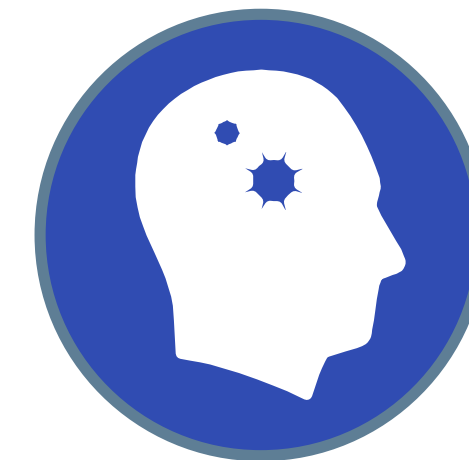
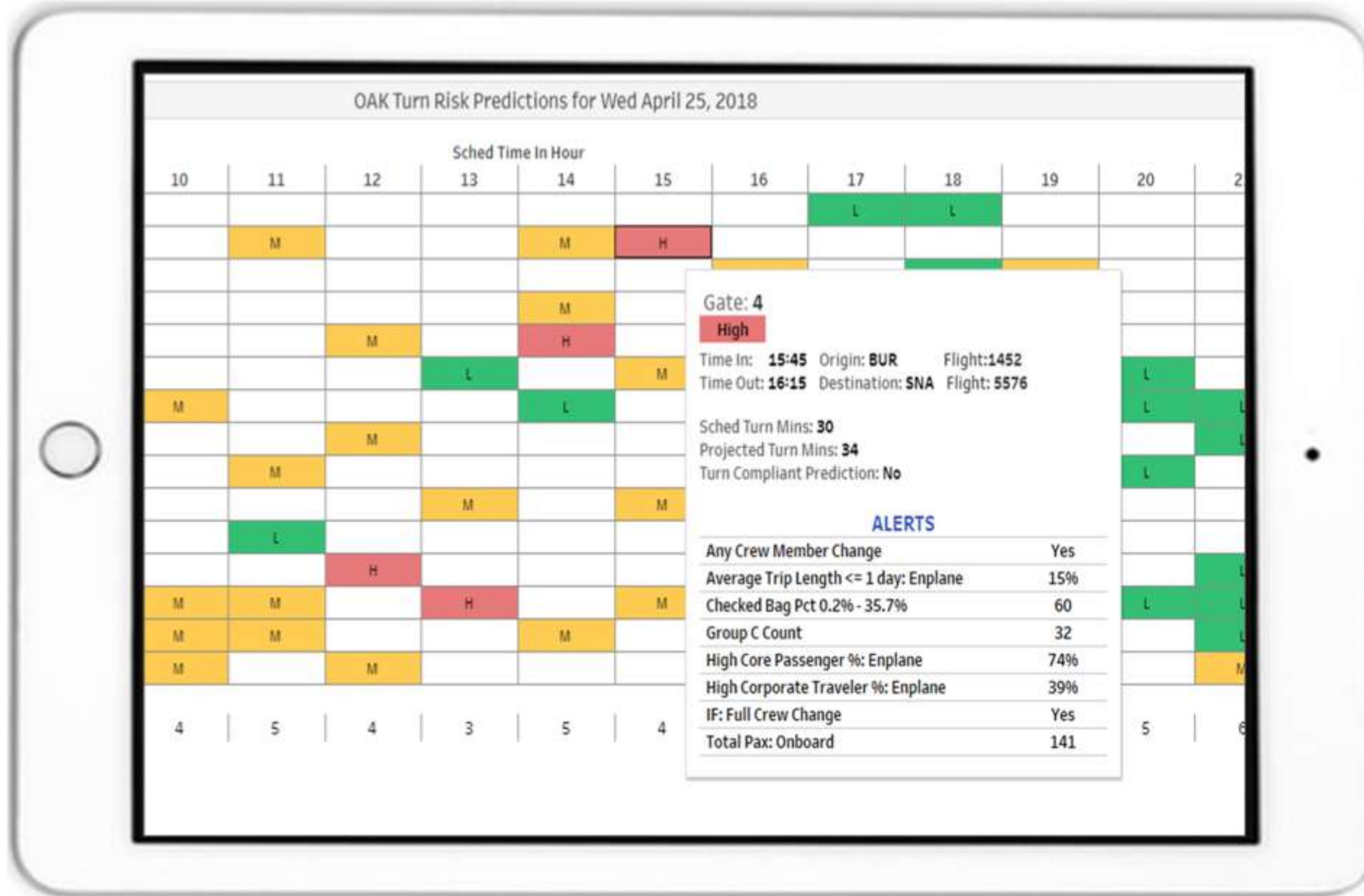


• On Time?

• How long?

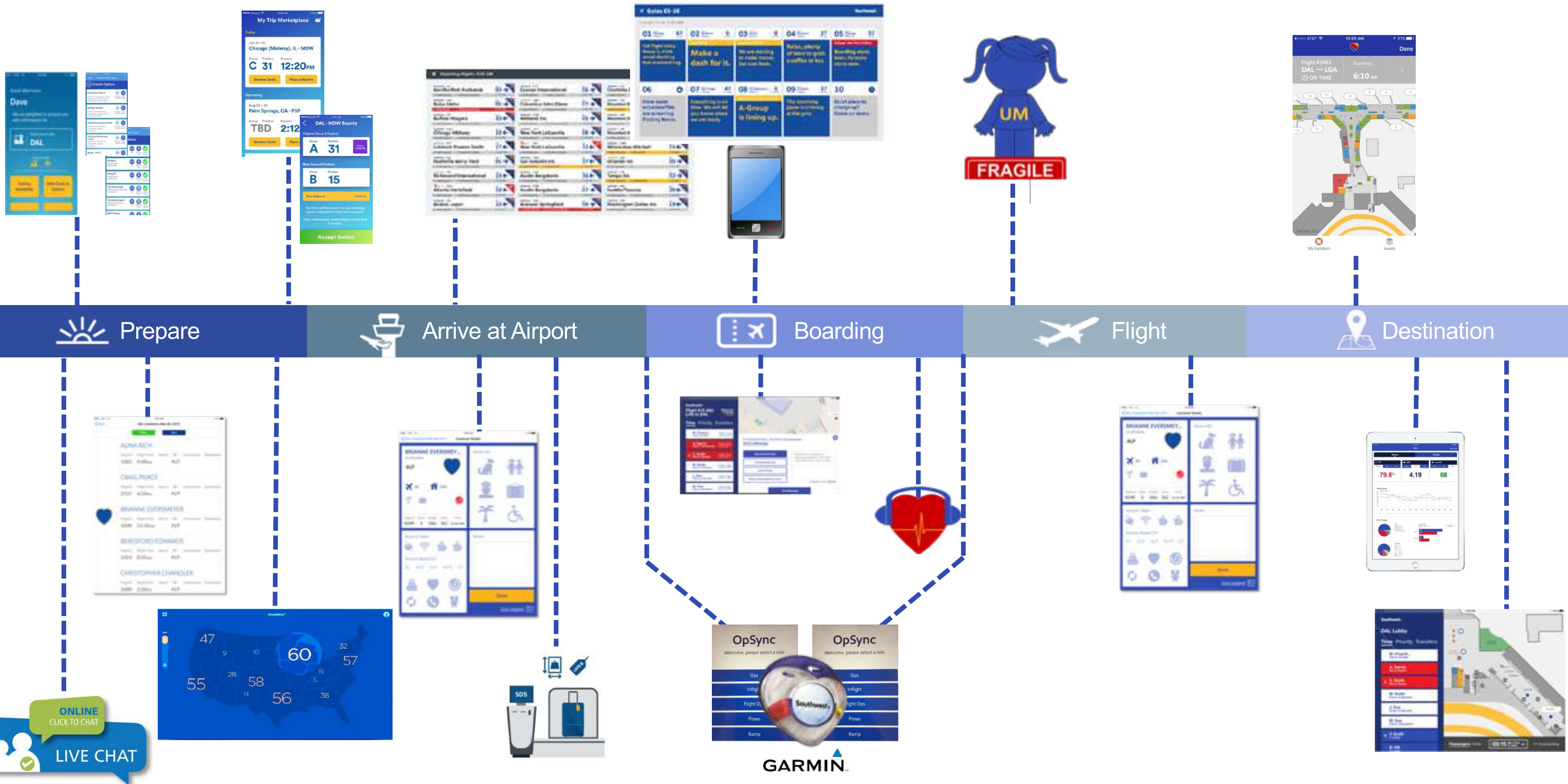
<p>TURN A Monday, June 13, 2016 Scheduled Turn Time: 35 minutes</p> <p>HOU → DAL → PHX 121 deplane 1 thru 142 enplane</p>	<p> 44% of deplaning PAX have a low holiday travel propensity</p> <p> 17% of enplaning PAX never check a bag</p> <p> 41% of enplaning PAX are core customers</p> <p> 42% of enplaning PAX travel for Business at least half of the time</p>	<p>MEDIUM RISK</p> <p></p> <p>Actual Turn: 35 MINS Predicted: Compliant Predicted: 36 MINS</p>
<p>TURN B Monday, November 21, 2016 Scheduled Turn Time: 35 minutes</p> <p>HOU → DAL → PHX 138 deplane 1 thru 138 enplane</p>	<p> 30% of deplaning PAX have a low holiday travel propensity</p> <p> 21% of enplaning PAX never check a bag</p> <p> 27% of enplaning PAX are core customers</p> <p> 14% of enplaning PAX travel for Business at least half of the time</p>	<p>HIGH RISK</p> <p></p> <p>Actual Turn: 44 MINS Predicted: Non-Compliant Predicted: 39 MINS</p>

INSIGHTS IN THE HANDS OF OUR PEOPLE



- On Time?
- How long?

THIS INSIGHT CAN BE LEVERAGED MANY WAYS





Everyday People

Can we improve our operational performance if we know more about the people on our planes?



A black and white photograph of the Wright Flyer biplane in flight, with a town visible in the background. The biplane is positioned in the upper half of the frame, flying towards the right. The town below is a mix of residential and commercial buildings, with a prominent church steeple in the center. The sky is clear and light-colored.

patsnap

From Idea to Innovation

How the airline industry can unlock
new innovation opportunities

About Me



Jordan Wray - PatSnap



Jordan Wray

Innovation Consultant, PatSnap

The PatSnap platform helps innovation leaders at 8,000+ companies, universities, and government bodies worldwide to transform their innovation strategy with big data.

Pressure from all angles

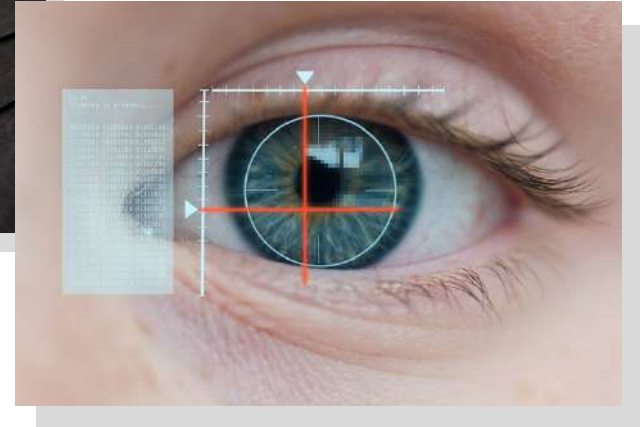
patsnap

- Increase in global travel
- Risk of pandemics
- Heightened digital and physical security risk
- Customer expectations of comfort and service
- Increased competition for airports and airlines
- Privatisation responsibility to shareholders



What is innovation for airports and airlines?

- Uncovering novel technologies and ideas

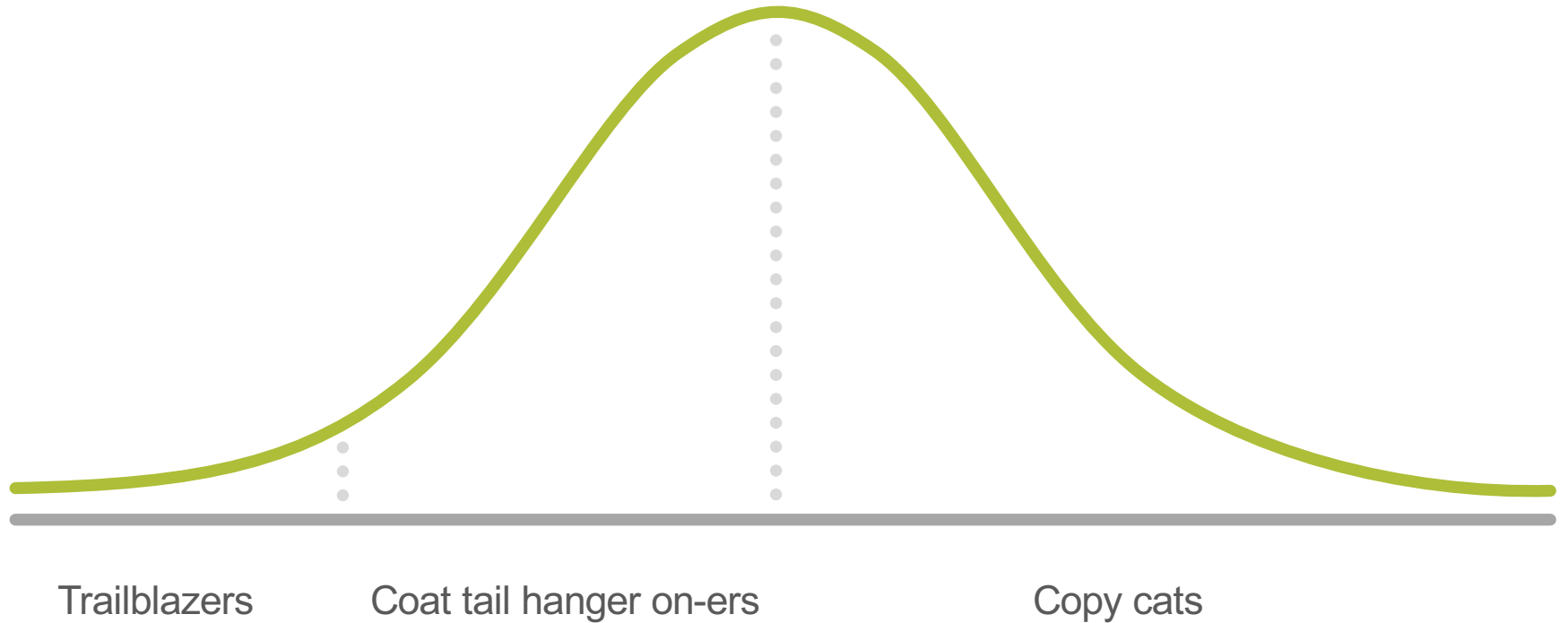


- Developing new ways of working

What kind of innovator are you?

patSnap

3 Types of Innovator



How airport innovation looks today



1. Networking events
2. Visiting other airports
3. Reading consulting reports
4. Technology scouting (a.k.a Google)
5. Asking internal Innovation / IT teams

You can't innovate in an echo chamber

“Me too” innovation



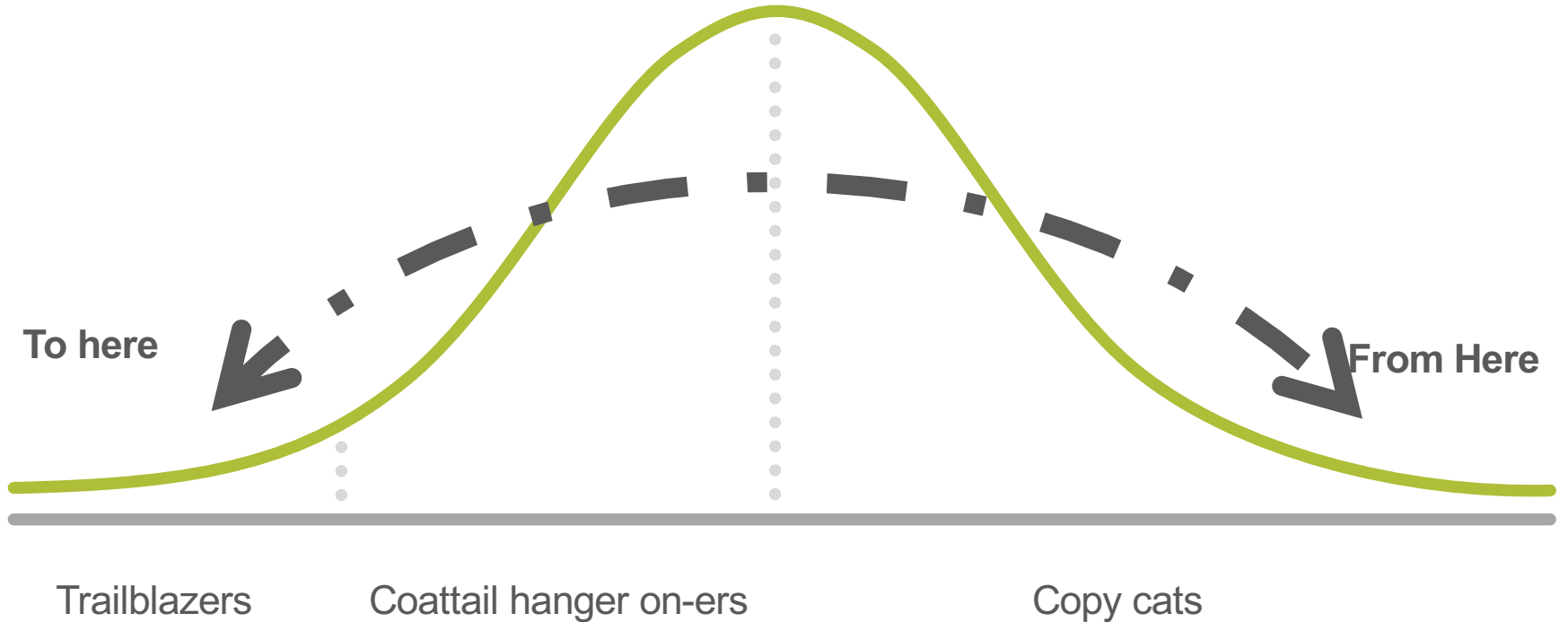
Separating the signal from the white noise

patsnap



What kind of innovator are you?

Technology Adoption Curve

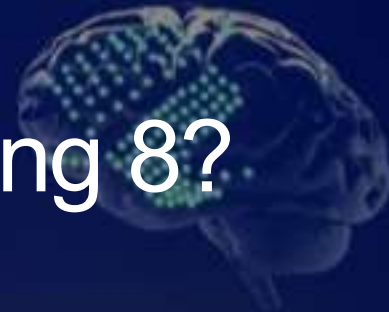


patsnap

Visit every airport in the world?



Recreate Facebook's Building 8?



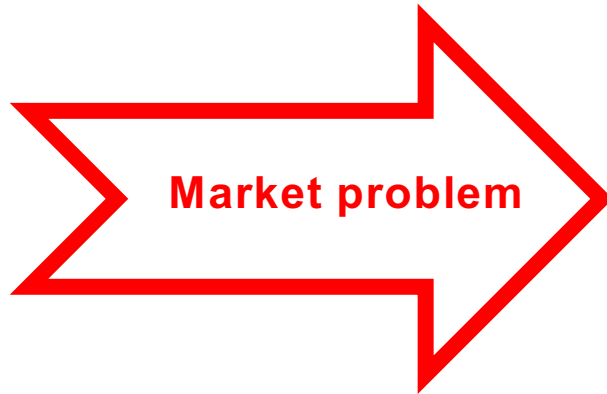
patsnap

HANGAR

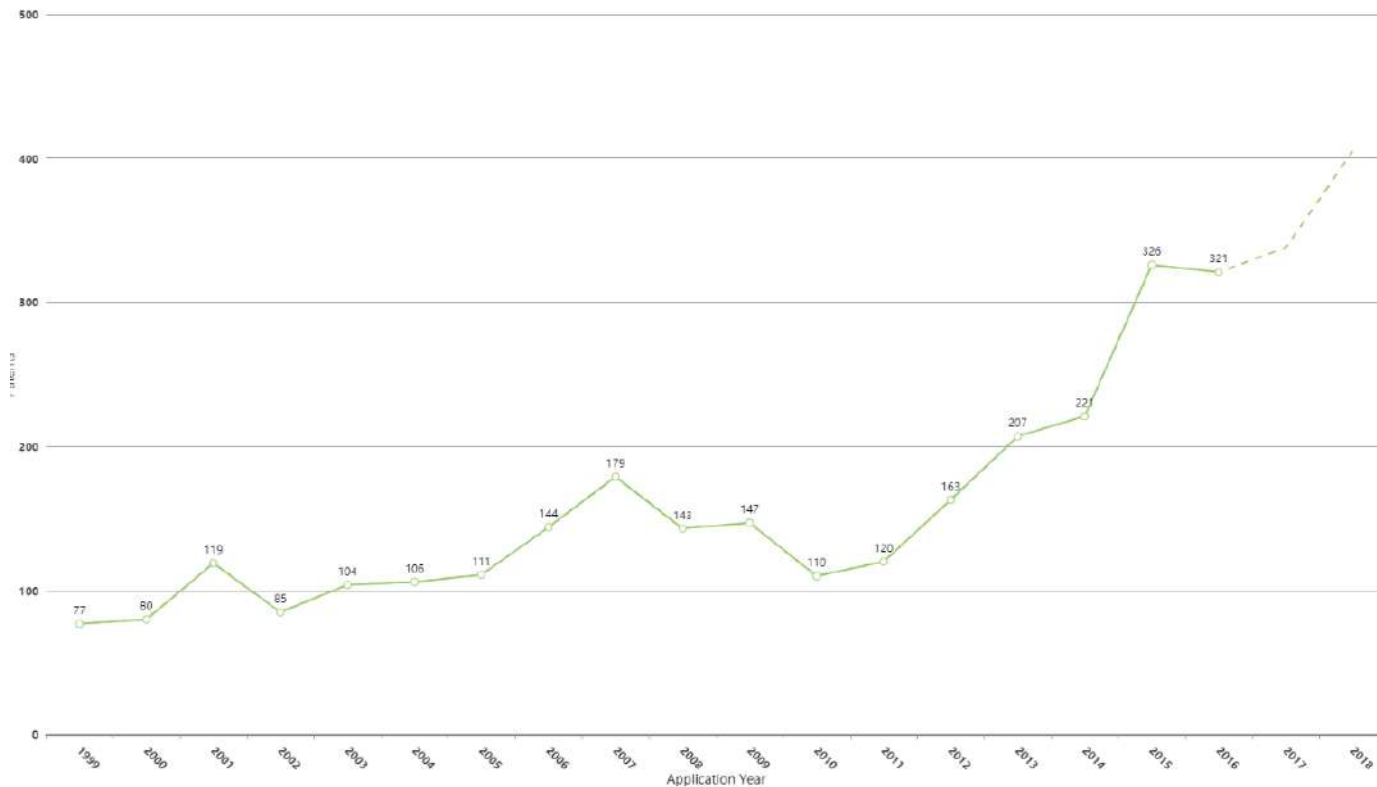


Why patents matter

Technical solutions to market problems



AI – is it really taking off?



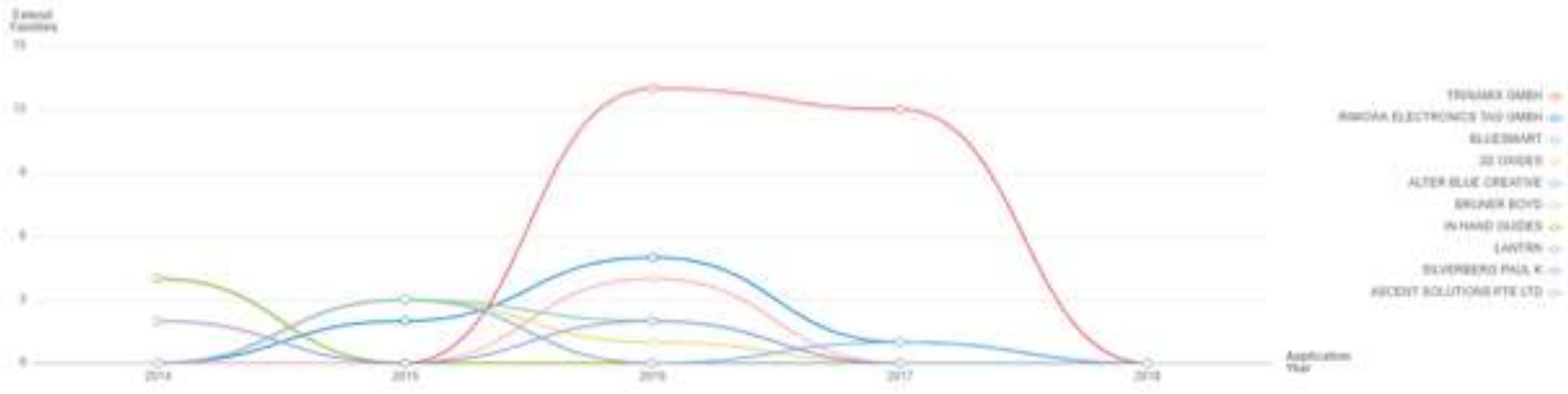
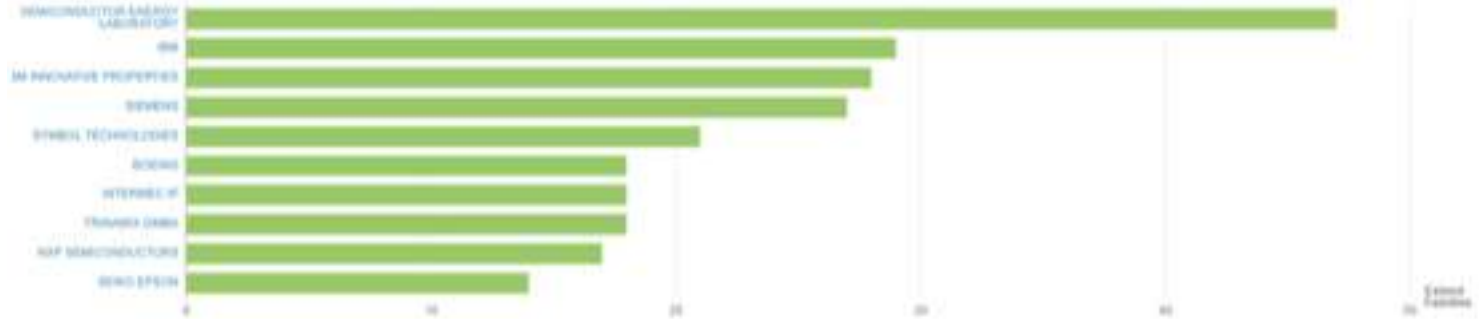
Where is innovation taking place?

patsnap



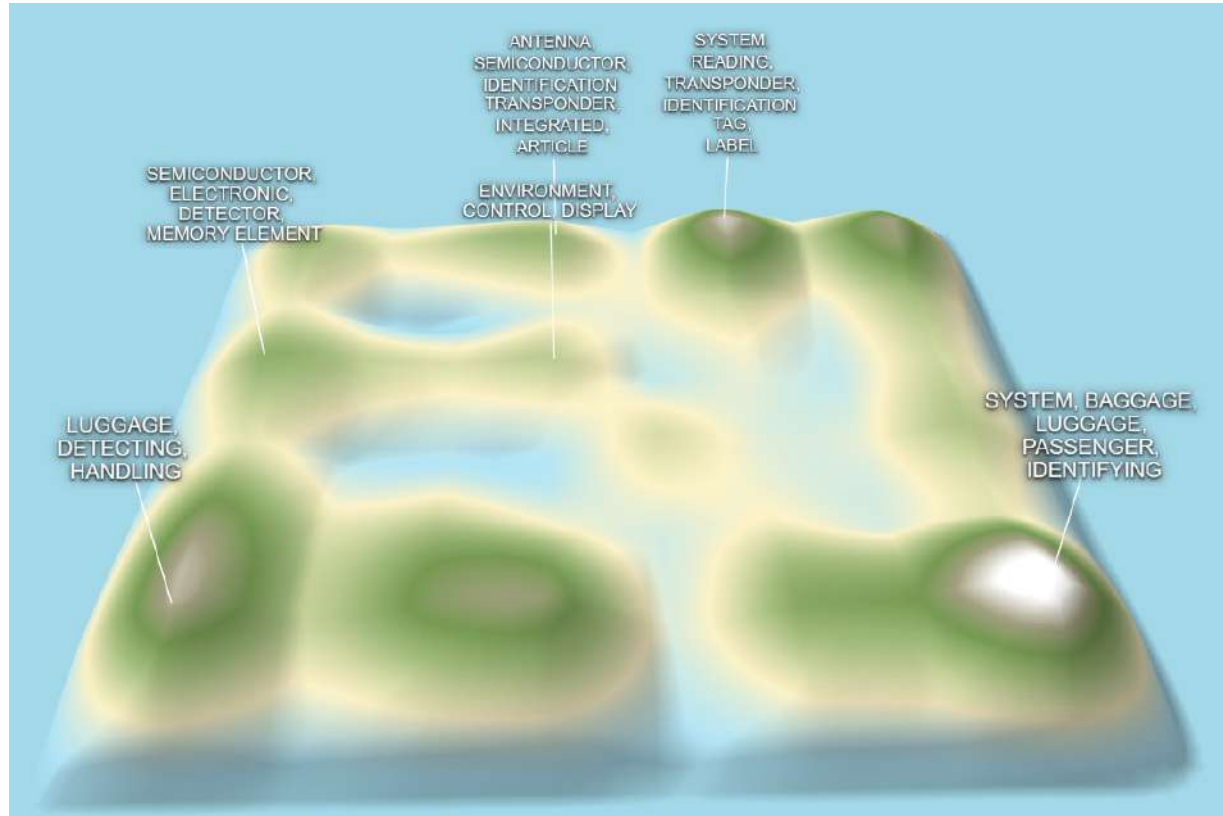
RFID – who should we work with?

patSnap



Where are the new opportunities?

patSnap



How innovative do you want to be?



Thank you!



UNIVERSITEIT VAN AMSTERDAM

AIRFRANCE KLM

EXPLORING DIGITAL DATA MARKETPLACES

**Researching data sharing principles in aviation context
An outline**

**IATA Aviation Data Symposium
June 19th 2018 – Berlin**

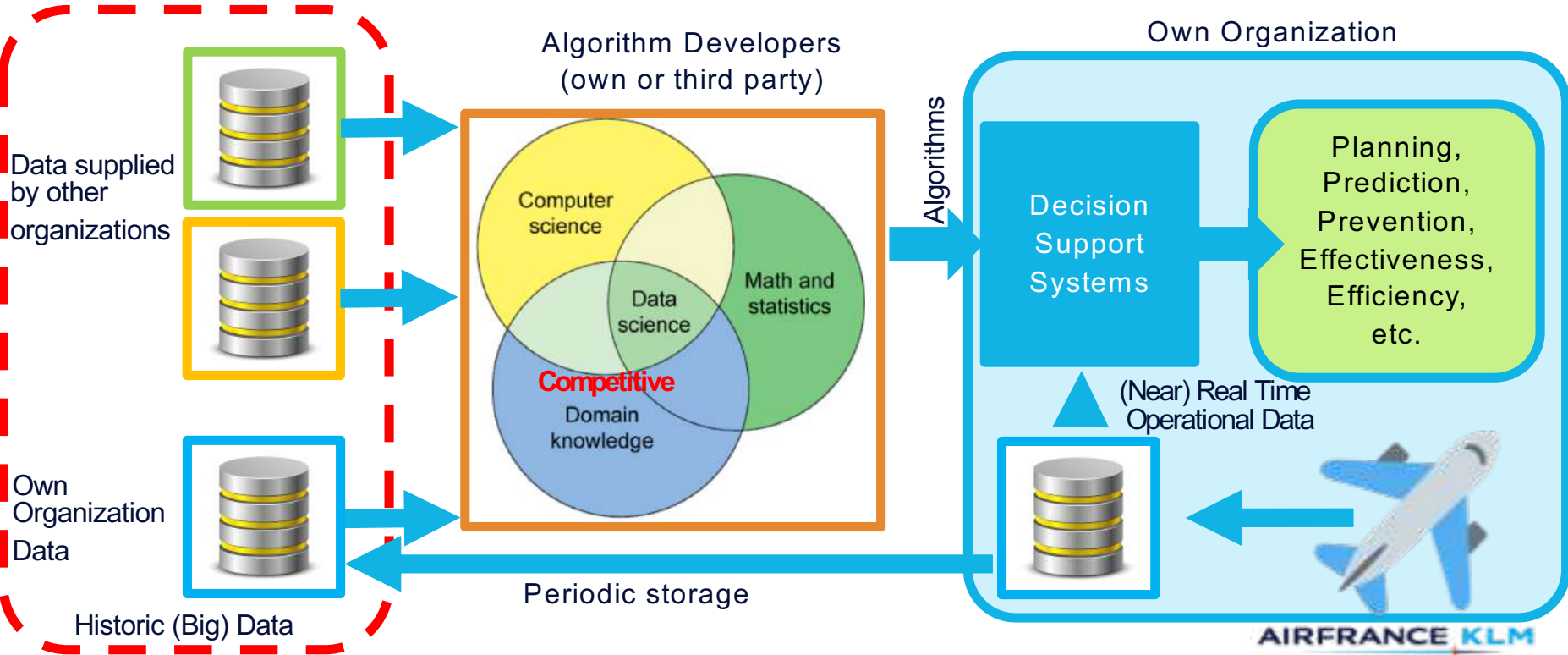
**Dr. ing. Leon Gommans,
Science Officer / Guest Researcher**

**IT Strategy & Technology Office - R&D / University of Amsterdam - Systems & Network Engineering Lab
Active in SAE HM-1 and DDSG**

RESEARCH CONTEXT

PROVIDING ADDITIONAL DATA TO IMPROVE DATA SCIENCE ALGORITHM DEVELOPMENT

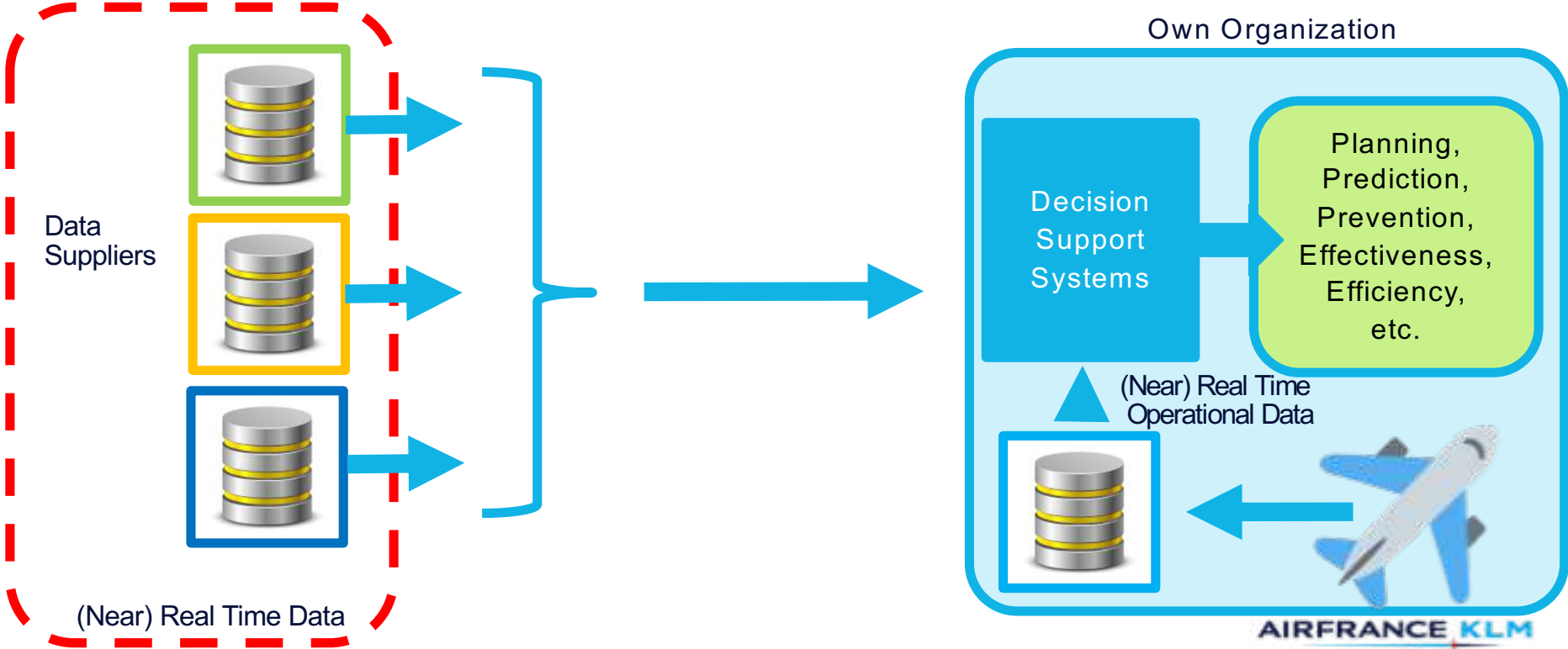
Primary Research Scope
Digital Data Marketplace



RESEARCH CONTEXT

PROVIDING ADDITIONAL DATA TO IMPROVE DECISION TAKING

Secondary Research Scope
Digital Data Marketplace

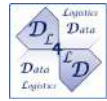


EXAMPLES OF DATA SHARING RELEVANT TO OUR INDUSTRY

Improve **passenger experience** at airports



Improve **efficiencies** across multi modal logistic chains



Increase **fleet availability** by improving maintenance scheduling by estimating maintenance credits from aircraft data.



Research efforts also consider use-cases in Healthcare, Agriculture, Smart Cities, Public Safety, Cybersecurity, ..

PRIMARY RESEARCH QUESTION

RECOGNIZING DATA IS AN ECONOMIC ASSET THAT CAN BE TRADED







Given a common benefit:
How can (big) data be shared amongst Data Suppliers and
Algorithm Developers in a 1) **FAIR** and **ECONOMIC** way,
whilst providing adequate 2) means to **REDUCE RISK**?

PROBLEM WITH MARKET DEVELOPMENT

1) FAIR AND ECONOMIC WAY: MONOPOLISM VS OPEN MARKET DEVELOPMENT

As in seen in the beginning of the oil industry: control of the transport platform enabled monopolism. Open marketplace mechanisms will enable trade, innovation and fair competition

Oil Economy	Concept	Data Economy
Crude Oil	Resource	Raw Data
Land / well owner	Ownership	Operator of data generator ?
Oil price	Value	Data price ?
Barrel, rail, pipeline, tanker ..	Transport	Future Internet ?
Oil market	Trade	Data Market ?
Petrochemical industry	Value Creation	Data science algorithms
Fuel, lubricants, plastics, detergents,..	Products	Efficiency, predictions, planning, recognition, behavior,..



DIGITAL DATA MARKETPLACE CONCEPTS

AREA CONSIDERED BY OUR RESEARCH EFFORT

Concept	Data Economy
Resource	Raw Data
Ownership	Operator of data generator ?
Value	Data price ?
Transport	Future Internet ?
Trade	Data Market ?
Value Creation	Data science algorithms
Products	Efficiency, predictions, planning, recognition, behavior,..

FLAGSHIP RESEARCH EFFORT

Amsterdam Economic Board and University of Amsterdam coordinate a multi-disciplinary research effort, involving multiple disciplines:

Law,
Computer Science,
Business School,
Economics,
Social Sciences

Amsterdam houses one of the largest Internet Exchanges (AMS-IX):

Can it house a Data Exchange that facilitates Data Marketplaces (AMS-DX)?

CONSEQUENCES OF MAINTAINING A MONOPOLY

SOCIETY WILL OBJECT DISPROPORTIONATE VALUE CREATION AND ENTANGLEMENT

Standard Oil got named ***The Octopus***, with many of its tentacles in society.

US government created antitrust law *to protect the public from the failure of the market where unfair conduct tends to destroy competition itself.*

(Sherman Act - 1890)



Source: Herman Viola, *Why We Remember: United States History*, Scott Foresman—Addison Wesley Publishing Co. (adapted)

MANAGING RISK AT DATA MARKETPLACE

2) MEANS TO REDUCE RISK: REQUIRES STEPS AT DIFFERENT LEVELS



COMMON BENEFIT

Define and agree common benefit no single organization can achieve on its own.



GROUP RULES

Define consortium rules considering data use, access and benefit sharing



ORGANIZE TRUST

Organize power and trust **as a means to reduce risk** for participating members

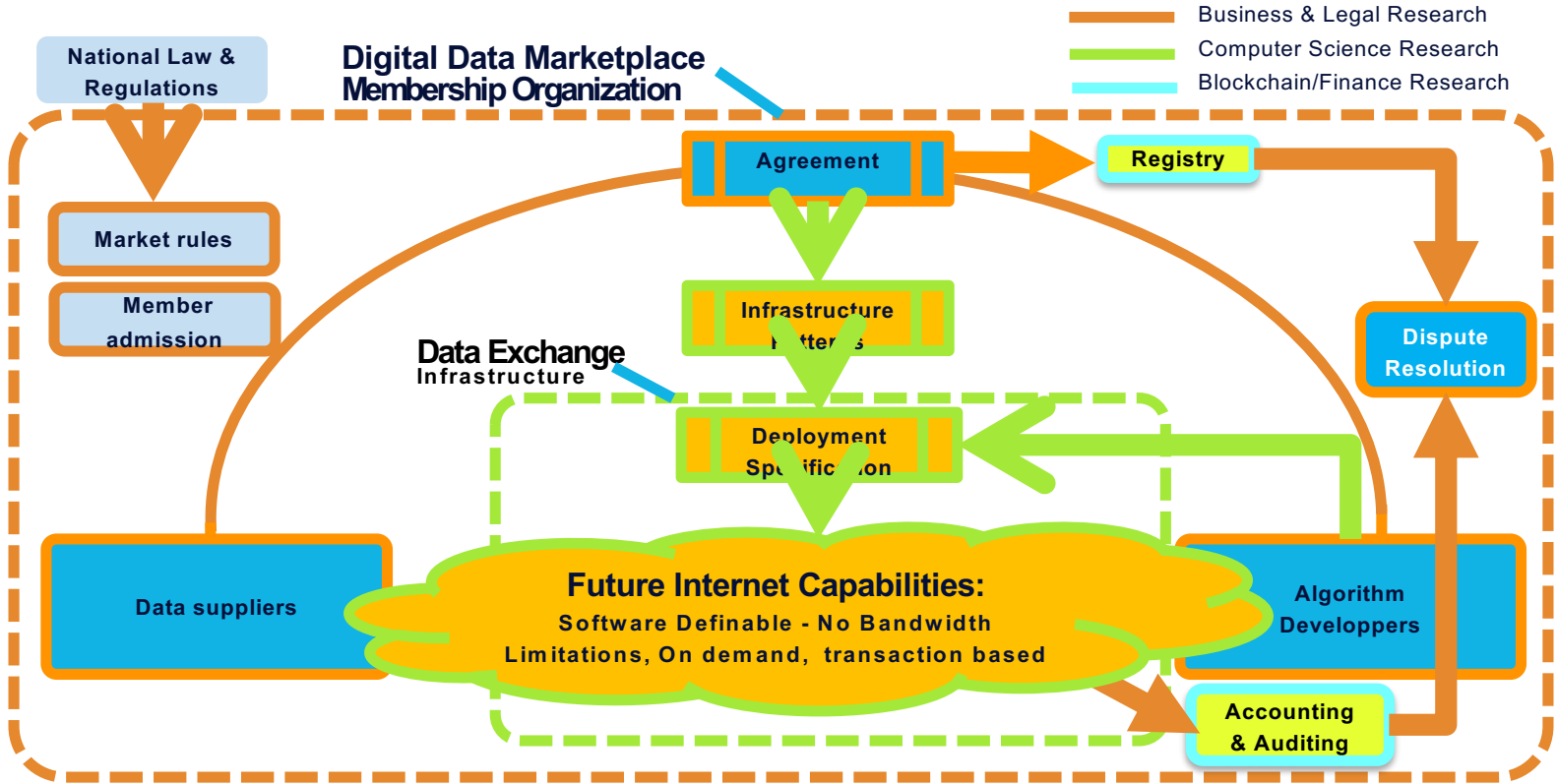


IMPLEMENT INFRASTRUCTURE

Research operationalization of **Digital Data Marketplace & Data Exchange** concepts

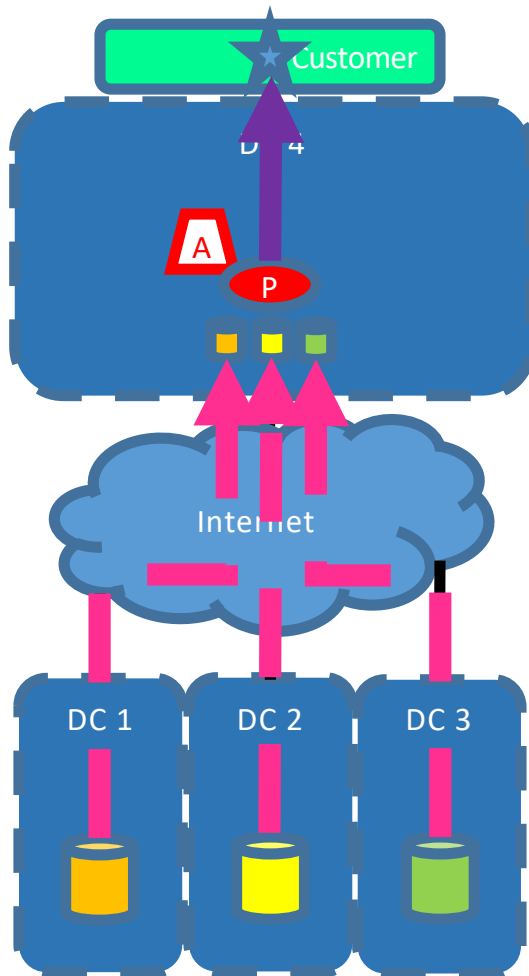
DIGITAL DATA MARKETPLACE ARCHITECTURE

ENABLING COMPETITIVE ALGORITHM DEVELOPMENT



INFRASTRUCTURE PATTERN RESEARCH

Traditional Model
(raising data owner concerns)



- Processing
- Algorithm
- Result
- Dataset
- Contract
- Filetransfer
- Result output
- Algorithm copy
- Remote filesystem mount
- Container
- Contract Driven Slice

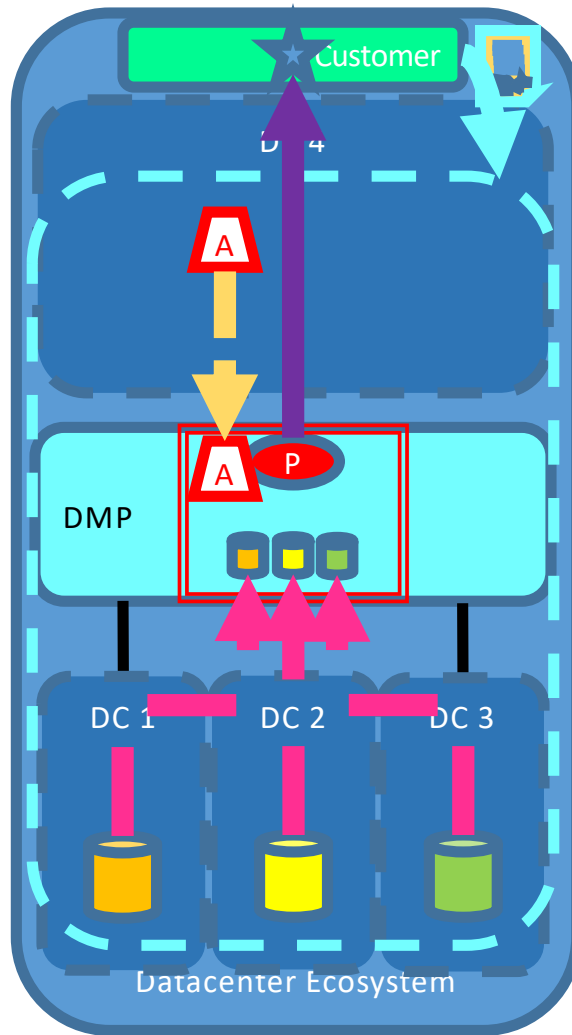
INFRASTRUCTURE PATTERN RESEARCH:












One of several examples

Digital Marketplace (DMP)

infrastructure supports creation of (temporary) slice across data centers, implementing a data science workflow based on a contract between customer and suppliers of data and algorithm.

Generic Infrastructure is supported by a **Data Exchange**



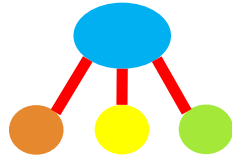
-  Processing
-  Algorithm
-  Result
-  Dataset
-  Contract
-  Filetransfer
-  Result output
-  Algorithm copy
-  Remote filesystem mount
-  Container
-  Contract Driven Slice

RESEARCH INFRASTRUCTURE

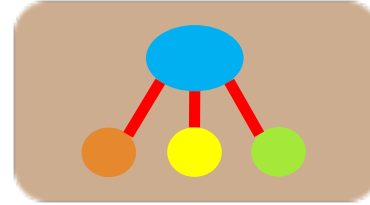
INTERNATIONAL RESEARCH WORKING ALONGSIDE IT INDUSTRY

NETWORK RESEARCH INFRASTRUCTURES

Data Sharing Infrastructure
Model Research using Future Internet capabilities



COMMERCIAL DATACENTER INFRASTRUCTURE AS NEUTRAL GROUND

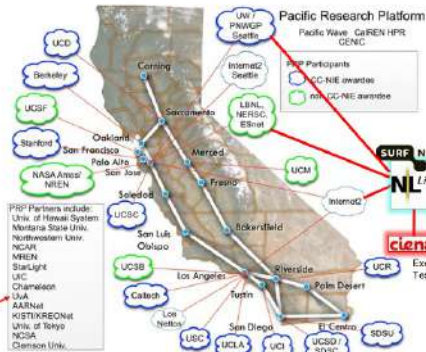


Goal: How to create a Digital Marketplace Ecosystem



prp.ucsd.edu

As foundation of the National Research Platform



Data Transfer Node at KLM fieldlab with 100 gb/s link to enable SDMP research thanks to UvA, SURFnet and Ciena



AM3 and AM4 Datacenters
Science Park Amsterdam
SV10 Datacenter
Silicon Valley



CONCLUSION

A DIGITAL MARKET PLACE:

- **Is created and governed by an industry membership organization as a means to reduce risk.**
- **Serves a common benefit no single organization can achieve on its own.**
- **Connects data suppliers and algorithm developers via a software definable, membership organization owned, infrastructure.**
- **Arranges processing as an on-demand infrastructure transactions, where the infrastructure is guaranteed to be cleaned up after execution.**
- **Infrastructure itself is delivered by neutral Data Exchanges across the world, in the same way neutral Internet Exchanges interconnect Internet Service Providers.**

THANK YOU



UNIVERSITEIT VAN AMSTERDAM



Email me:
leon.commans@klm.com



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 790288



AIRFRANCE KLM

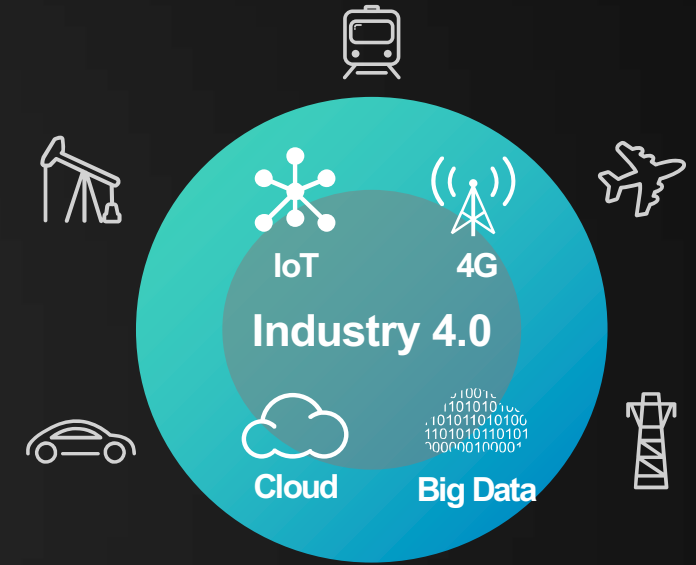
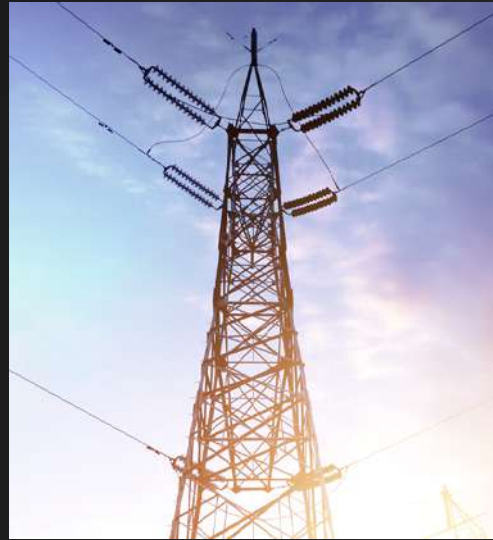


Leading New ICT, The Road to Smart Aviation

Rachad NASSAR
Business Development Manager
Enterprise Transport Sector

LEADING NEW ICT

The Fourth Industrial Revolution is Coming



Mechanization >>>

Mechanical production,
Railroads,
Steam Power

Electrification >>>

Electrical Power,
Mass production,
Telegraph

Automation >>>

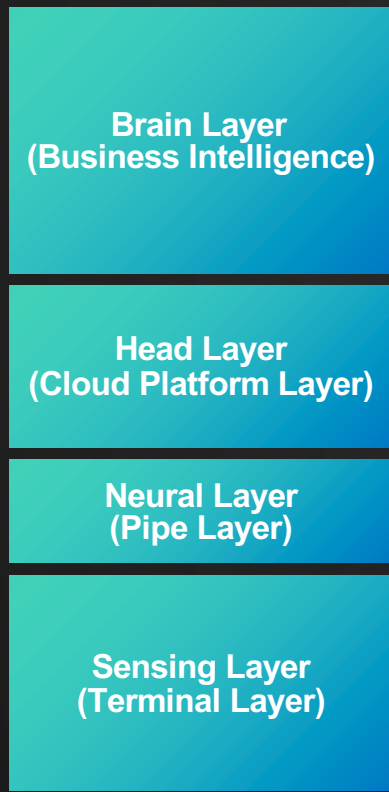
Automated Production,
Electronics,
Computer

Smart Digital Transformation

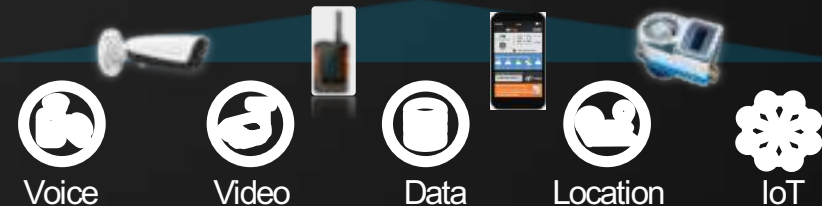
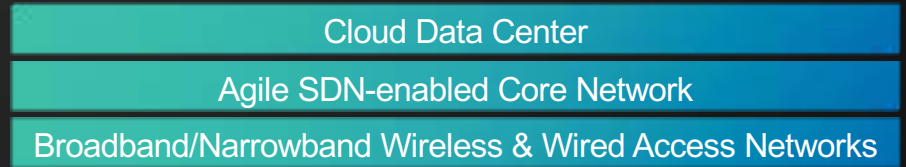
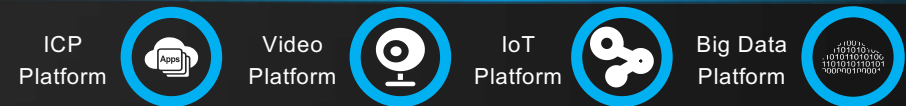
Intelligent Collaborative Industries,
Augmented Reality,
Artificial Intelligence

ICT Enables the Fourth Industrial Revolution

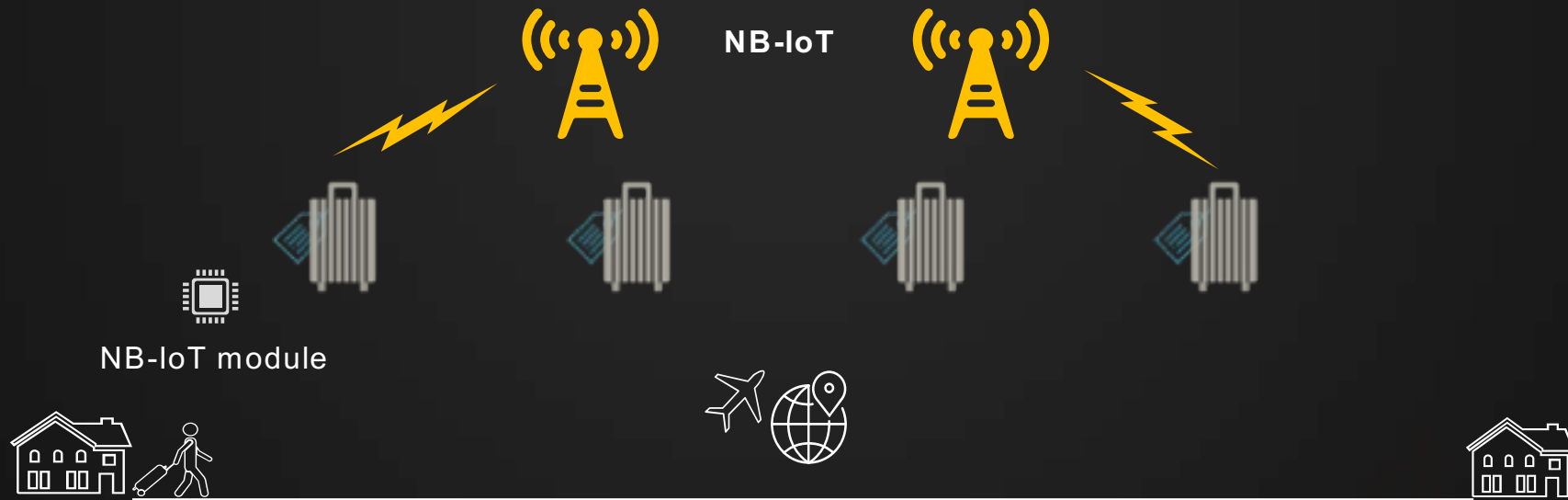
ICT: Nervous System of the Smart Aviation Digital Transformation



Ground handling monitoring Visualized Operations Airside/Landside Safety Visualized Safety Passenger Experience Visualized Services



IoT Door-to-Door Baggage Tracking



In 2017, 30+ NB-IoT networks were deployed in 20 countries

Enhanced Air Passenger Experience



Personalized services
(fast track, Advertisement, etc.)



Boarding Guidance

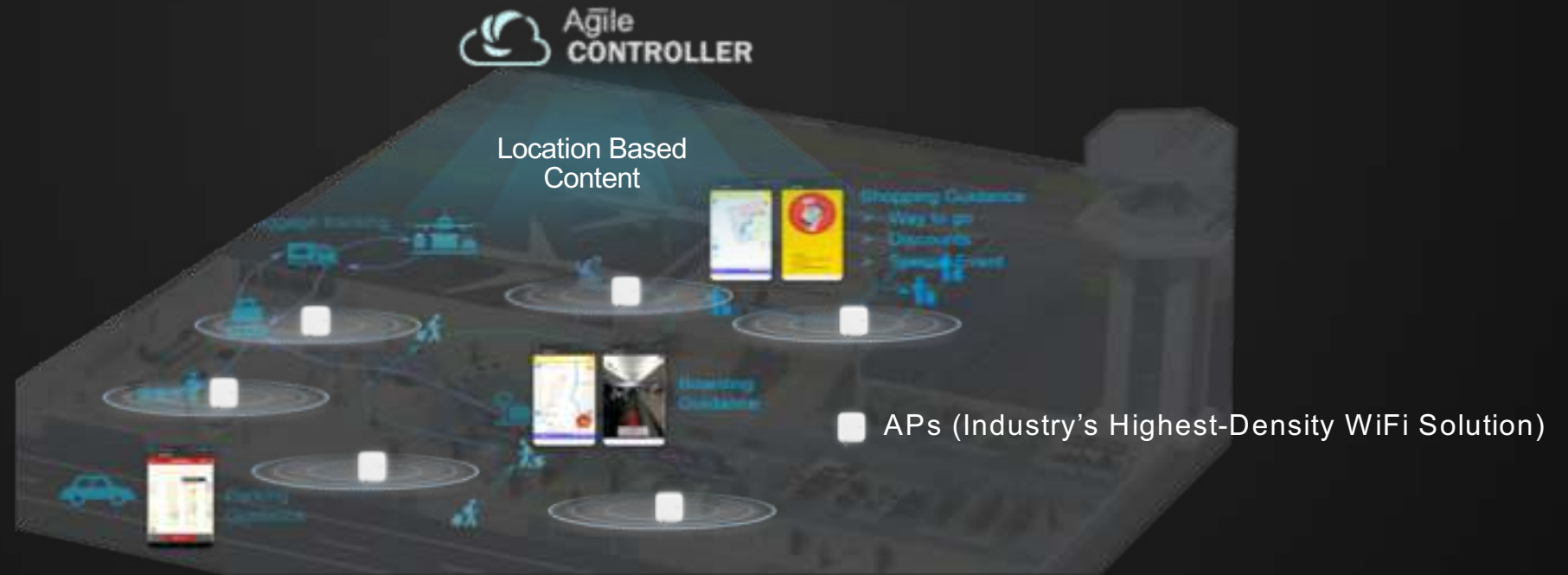
Huawei Big Data Platform



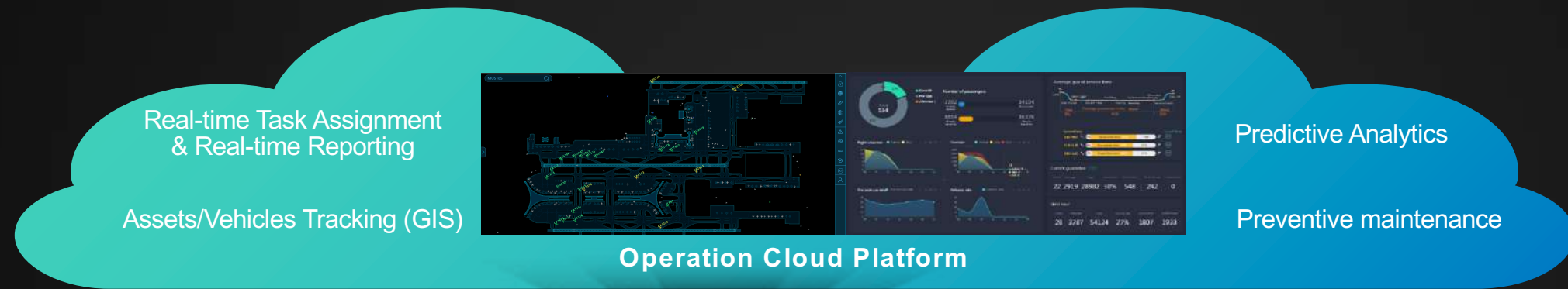
Real-time passenger
flow Heatmap



Passengers Behavior
analysis



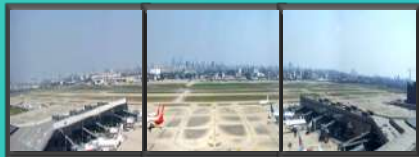
Efficient Visualized Airport Operations



Intelligent Visualized Safety: from Passive to Preventive



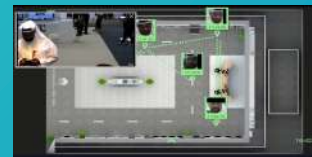
Video Wall, IVS,
Video Dispatching



4K Panoramic video



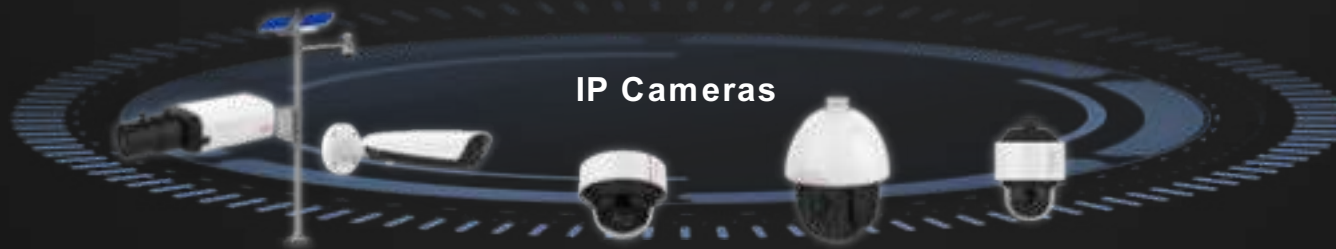
Video Cloud Platform



Face recognition
Boarding, Customs clearance, ...



Agile POL



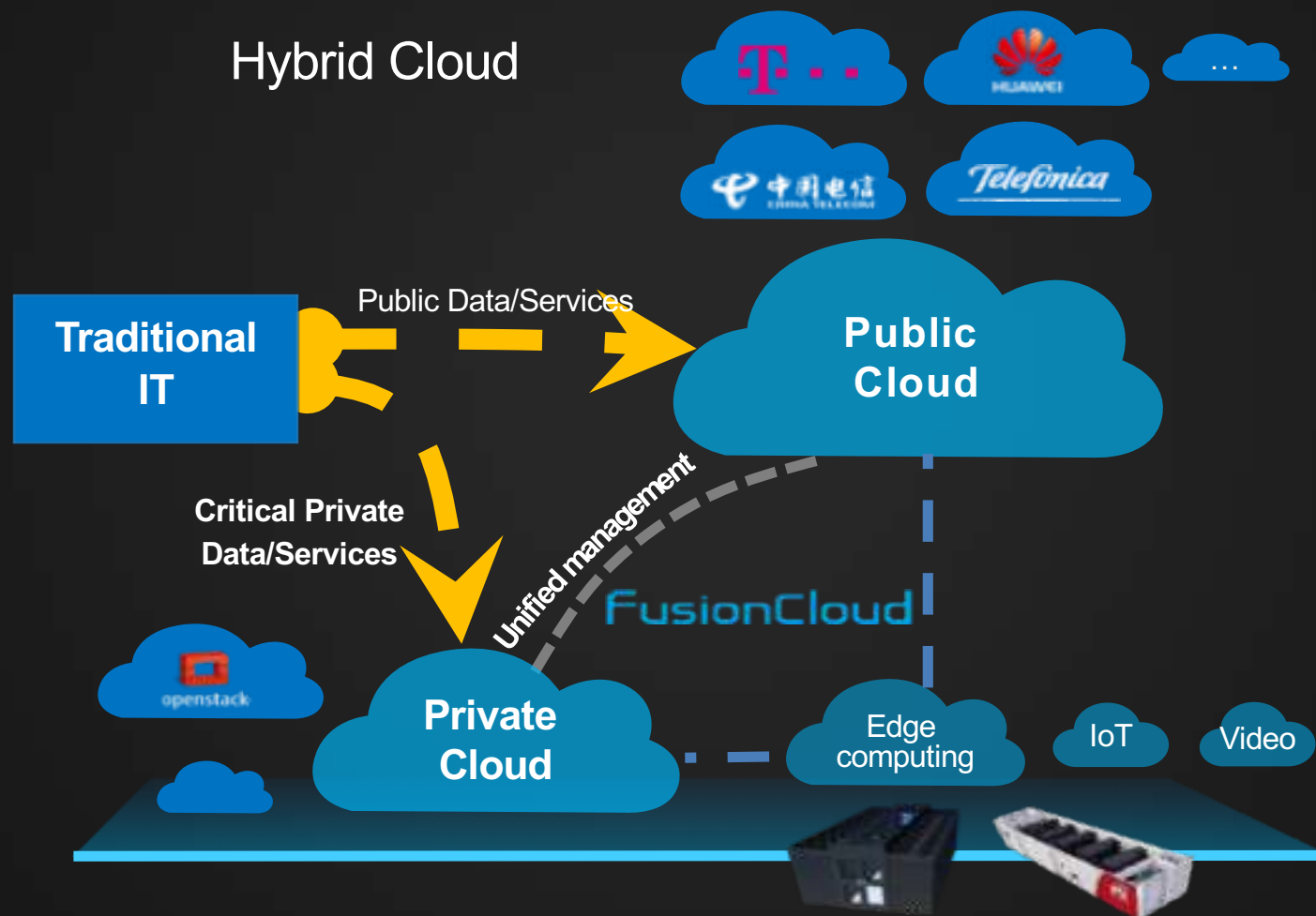
IP Cameras

Hybrid Cloud: on-demand scalable provisioning

Scalability & Modularity

Time & Space Efficiency

Low CAPEX



Green

Reliability

Open Standards

Huawei in Aviation



50+
Airports Worldwide

15+
with Annual Capacity \geq 30M

10+
China Busiest Airports

15+
International Airlines

10+
Solution Partners

Expanding the Global Network of OpenLabs



USD **200M** investment
in **3** years

The background is black with several thin, curved lines in yellow, cyan, and red that sweep across the right side of the frame. The text 'THANK YOU' is centered in a large, white, bold, sans-serif font.

THANK YOU

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WIDEN YOUR
WORLD

TURKISH
AIRLINES 

Financial Engineering



CÜNEYT BAHADIR

REVENUE ACCOUNTING & REPORTING MANAGER

Michio Kaku;

1960s: Electricity is everywhere and nowhere at the same time

2000s: Internet is everywhere and nowhere at the same time

We say;

2010s: For Airline industry (or service industry), IT is everywhere and nowhere at the same time

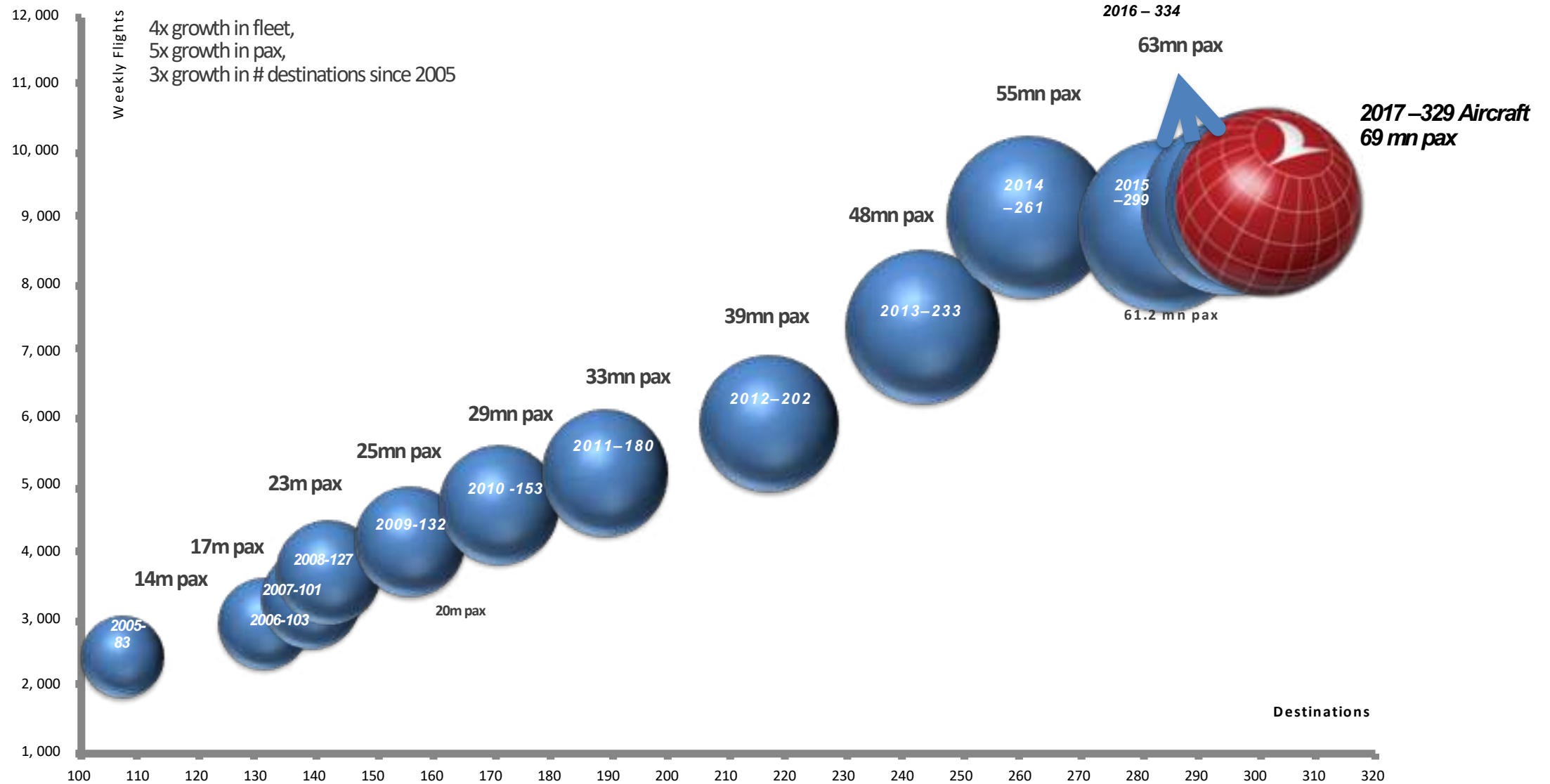
Dunkin' Donuts;

America runs on Dunkin

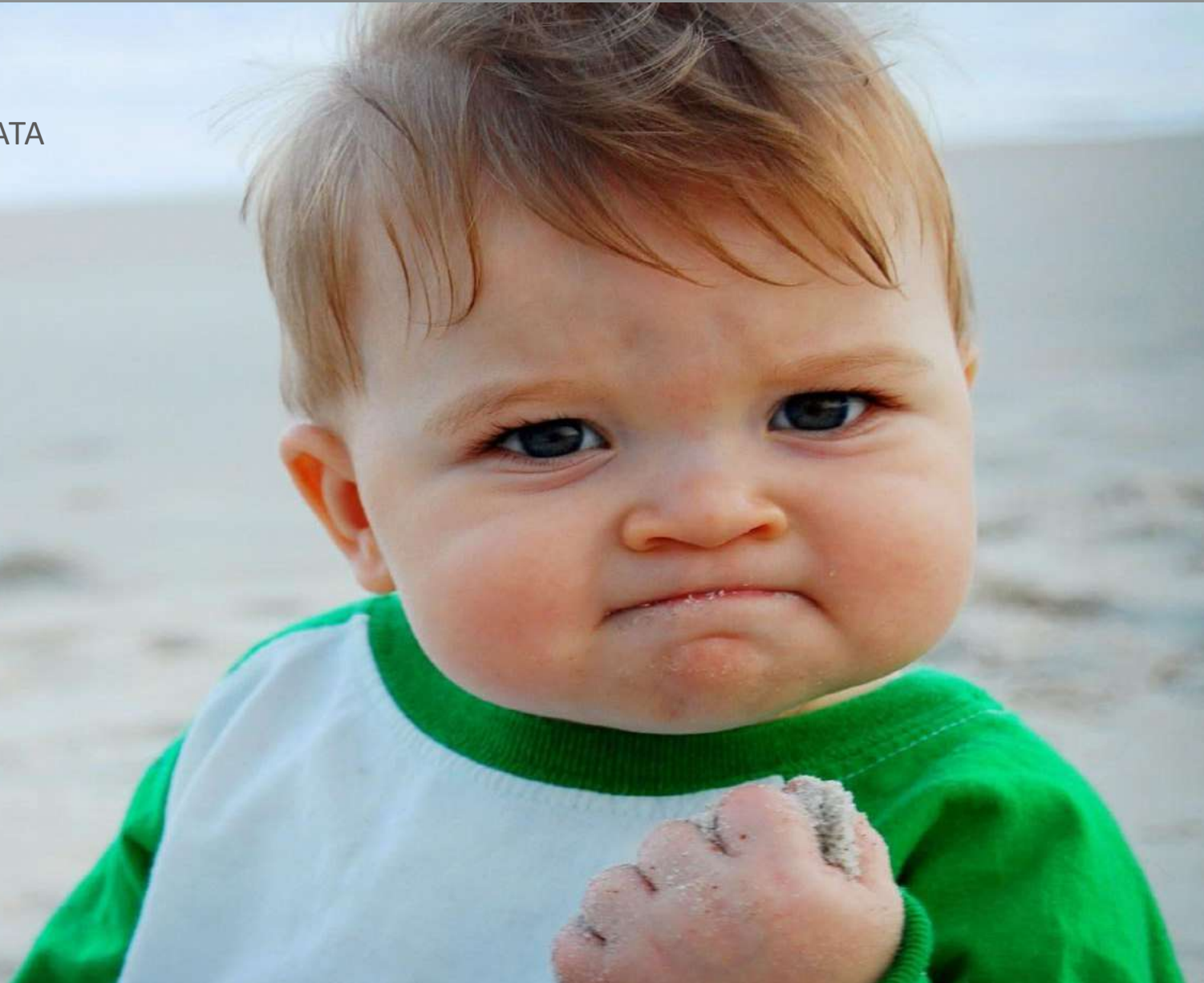
We say;

Service sector (especially Airline) runs on IT

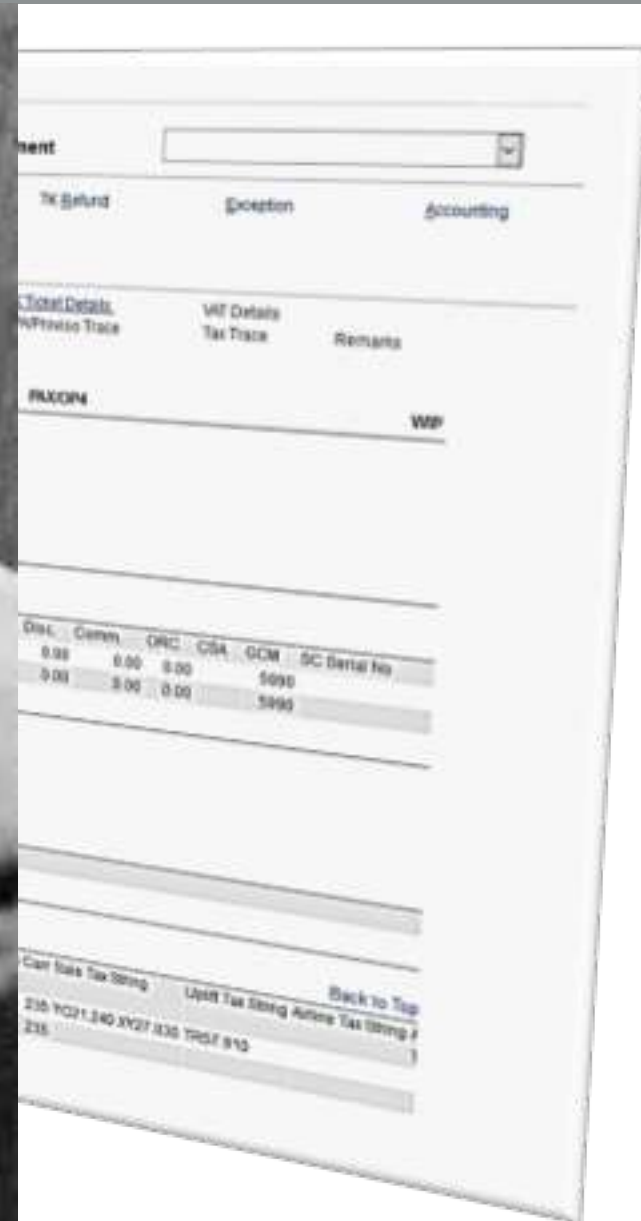
TK at a glance



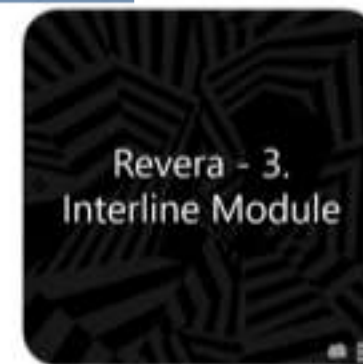
CREATING ADDED VALUE WITH BIG DATA



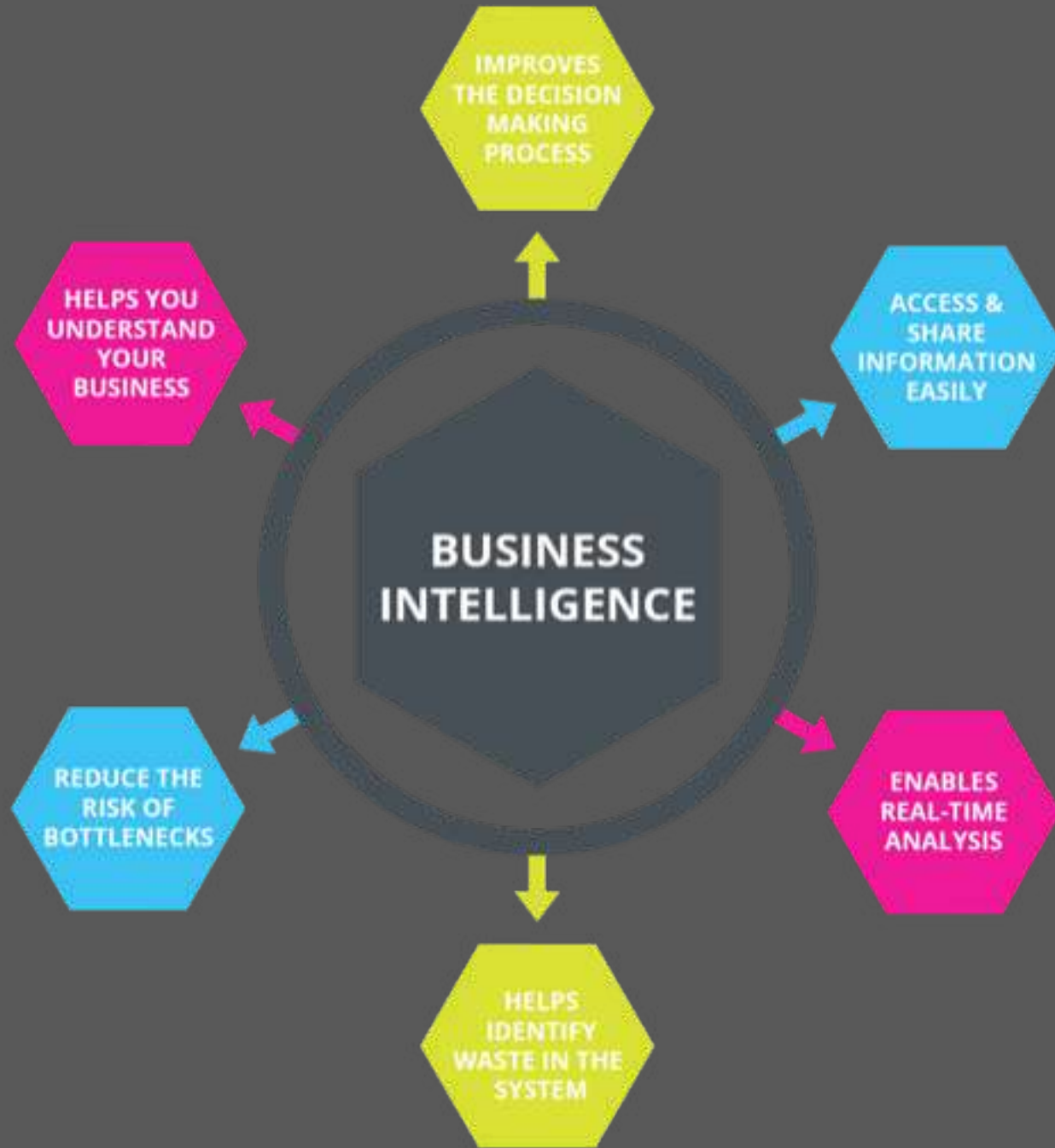
Digital Transformation



Introduction of BI to our Financial Function



BI



BUSINESS INTELLIGENCE

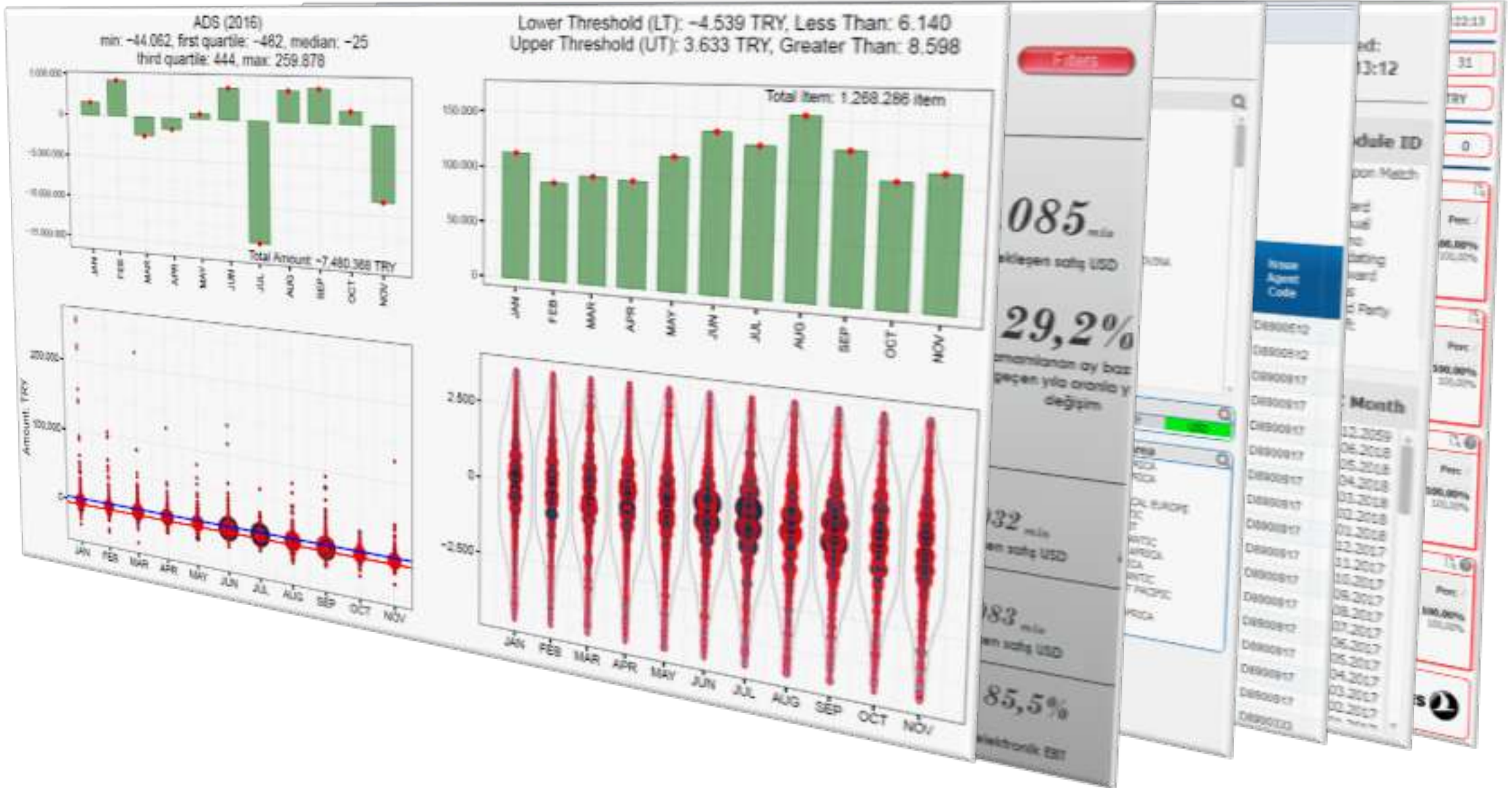
AWARENESS OF BUSINESS ENVIRONMENT BY MANAGING AND
REFINING DATA

MANAGERIAL
APPROACH

TECHNICAL
APPROACH

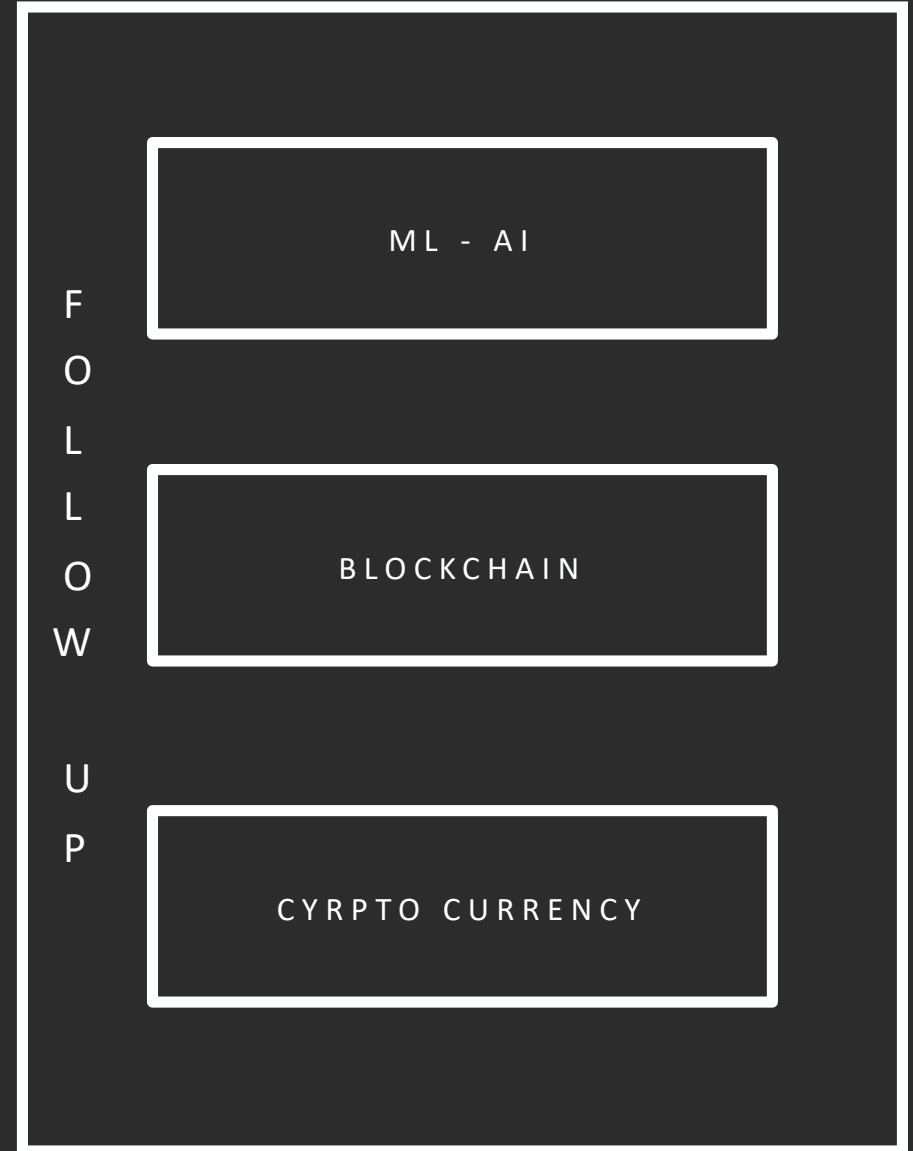
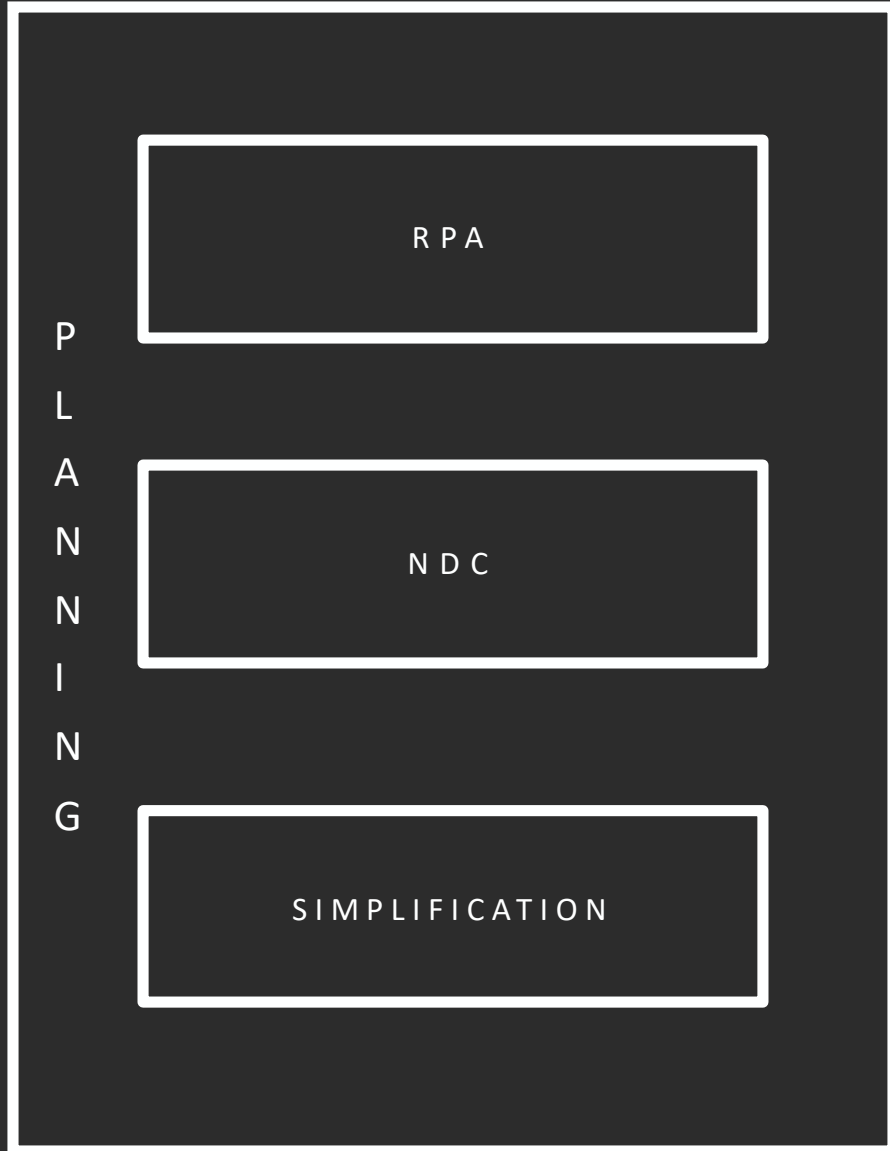
ENABLER
APPROACH

Business Value of BI for TK



- Fast decision
- Better decision
- Identify new business opportunities
- Identify business risks
- Identify inefficient business processes and simplify business processes
- Productivity and accuracy
- Improvement in collaboration and overall business effectiveness
- Better revenue

FUTURE



“Take the road less traveled.”

CUNEYT BAHADIR

REVENUE ACCOUNTING & REPORTING MANAGER

**WIDEN YOUR
WORLD**

**TURKISH
AIRLINES**





skywise. The beating
heart of aviation

Frederic Sutter, Digital Transformation Leader
Airbus

IATA ADS 2018
Berlin, Jun 19th 2018

CIO Track

**Can data help operating and
maintaining your aircraft?**



At Airbus, we've discovered the value of integrating disparate data sources



**SUPPLIER
DATA**



**MANUFACTURING
DATA**

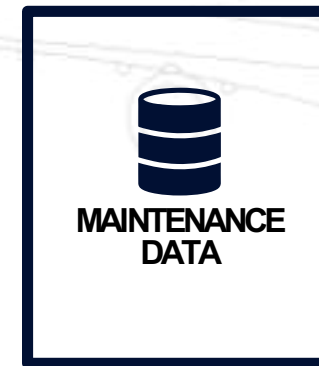


**ENGINEERING
DATA**



**IN SERVICE
DATA**

We believe this challenge extends throughout the industry






MANUFACTURING
DATA


PRODUCTION
DATA


ENGINEERING
DATA


MAINTENANCE
DATA

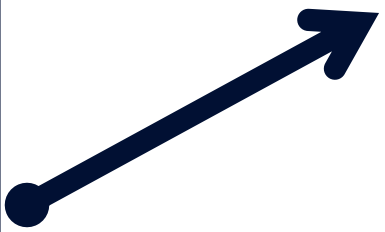
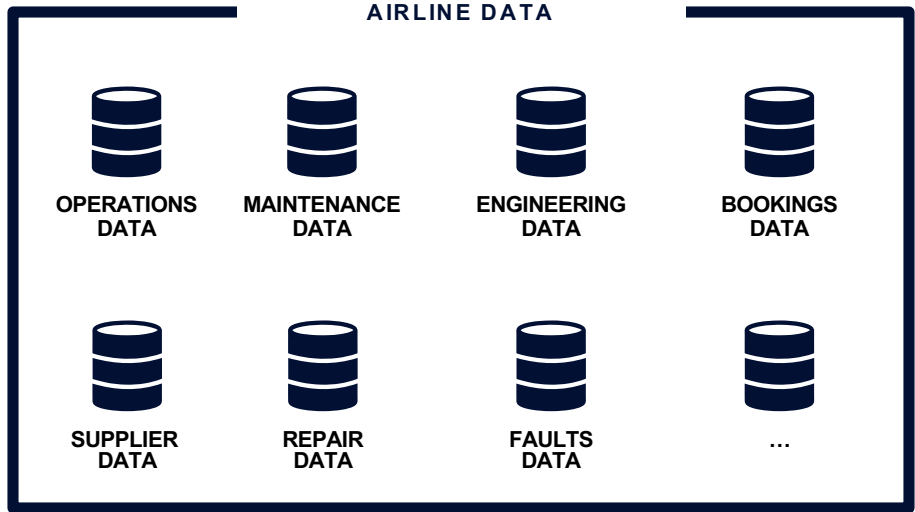
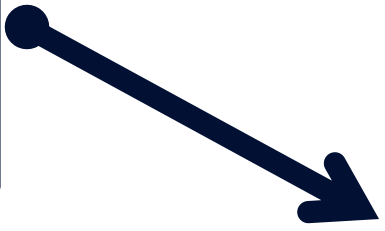

SUPPLIER
DATA


REPAIR
DATA


IN SERVICE
DATA


OPERATIONAL
DATA

Skywise is an integrated data platform designed to break down data silos



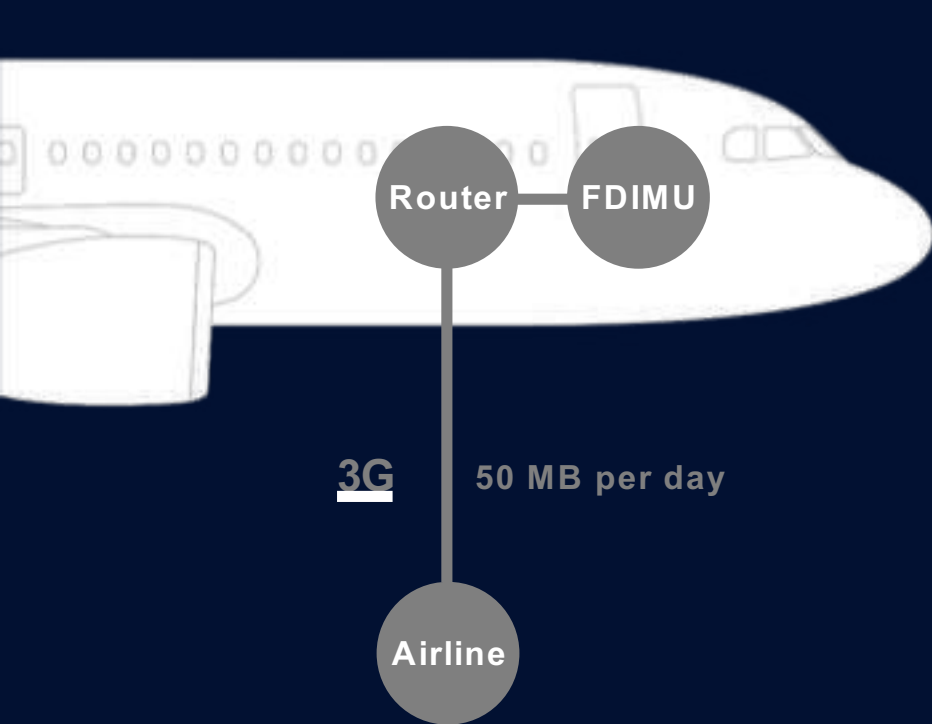
For operators, data from the aircraft can be combined with data from operational systems on the ground

Capturing x60 more aircraft sensor data thanks to FOMAX

Current data available

A320: 400 parameters

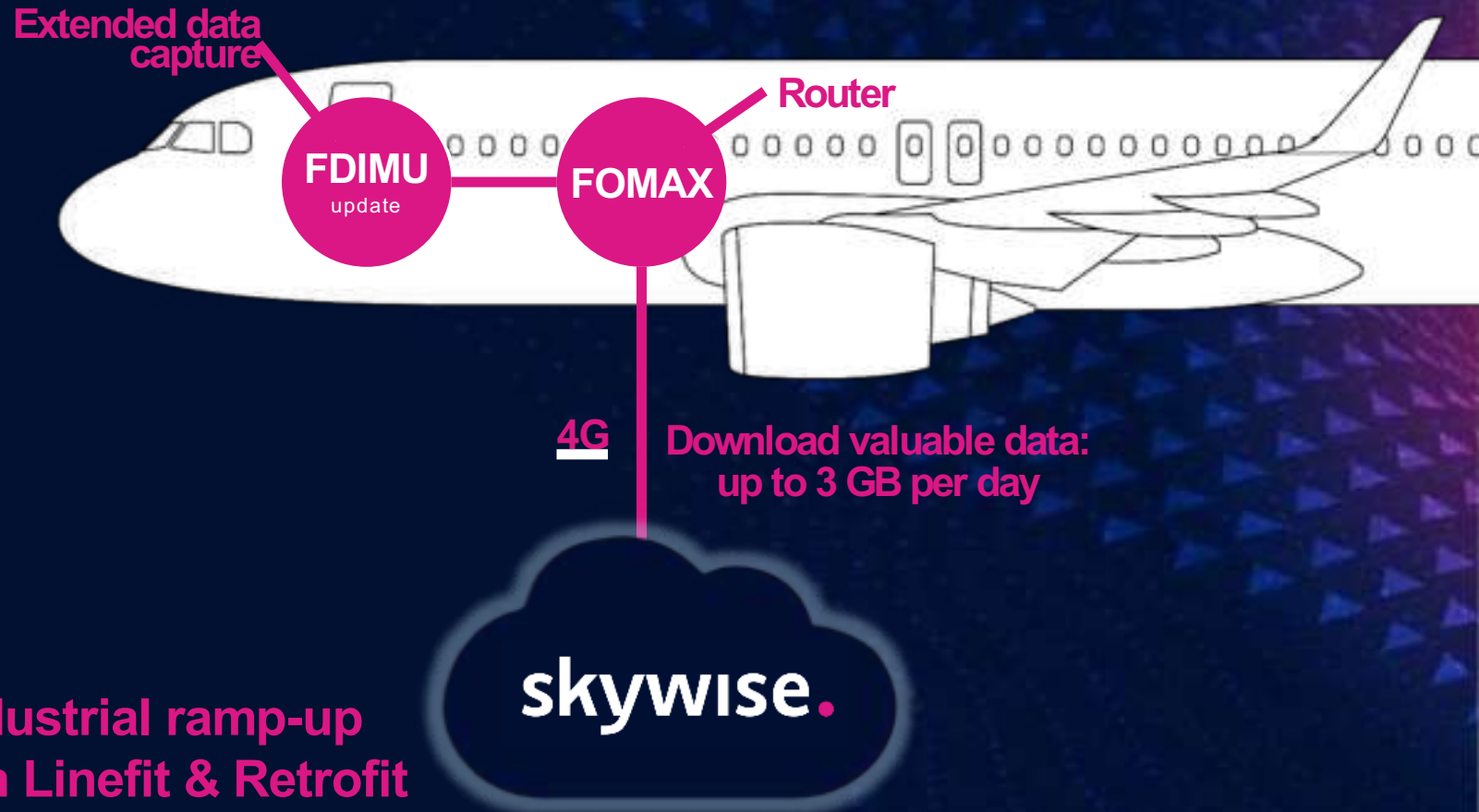
A330: 1500 parameters



Potential data available

A320: 23,000 parameters

A330: 40,000 parameters



Steep industrial ramp-up
Available in Linefit & Retrofit

skywise.

skywise. CONNECT

A320 & A330 FOMAX

Easing the A350 e-Operations experience



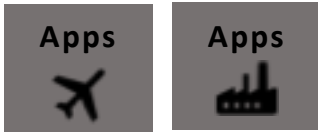
An integrated & secured data pathway from the aircraft to **skywise.**

* Aircraft data for Aircraft not equipped with FOMAX

**WACS: Wireless Airport Communication System

**IMACS: Information Management Aircraft-ground Communication System

Airbus E2E
Monitoring Platform



Airbus API Platform

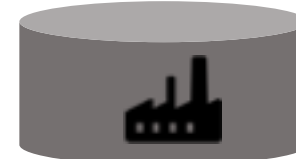
Airbus Public Cloud

Powered by Amazon Web Services, augmented to ensure security by design

Airbus Data Platform

Powered by Palantir Technologies, augmented to ensure Data Governance, DevOps, Data ingestion, Security, Stability, Performance, Airbus extensions, etc.

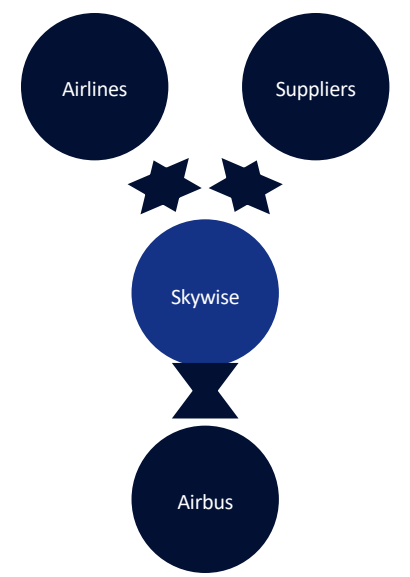
5PB of data – 60k Datasets





Towards a complete aviation ecosystem

A digital platform for Airbus applications and services.

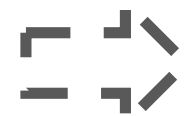


STATUS QUO

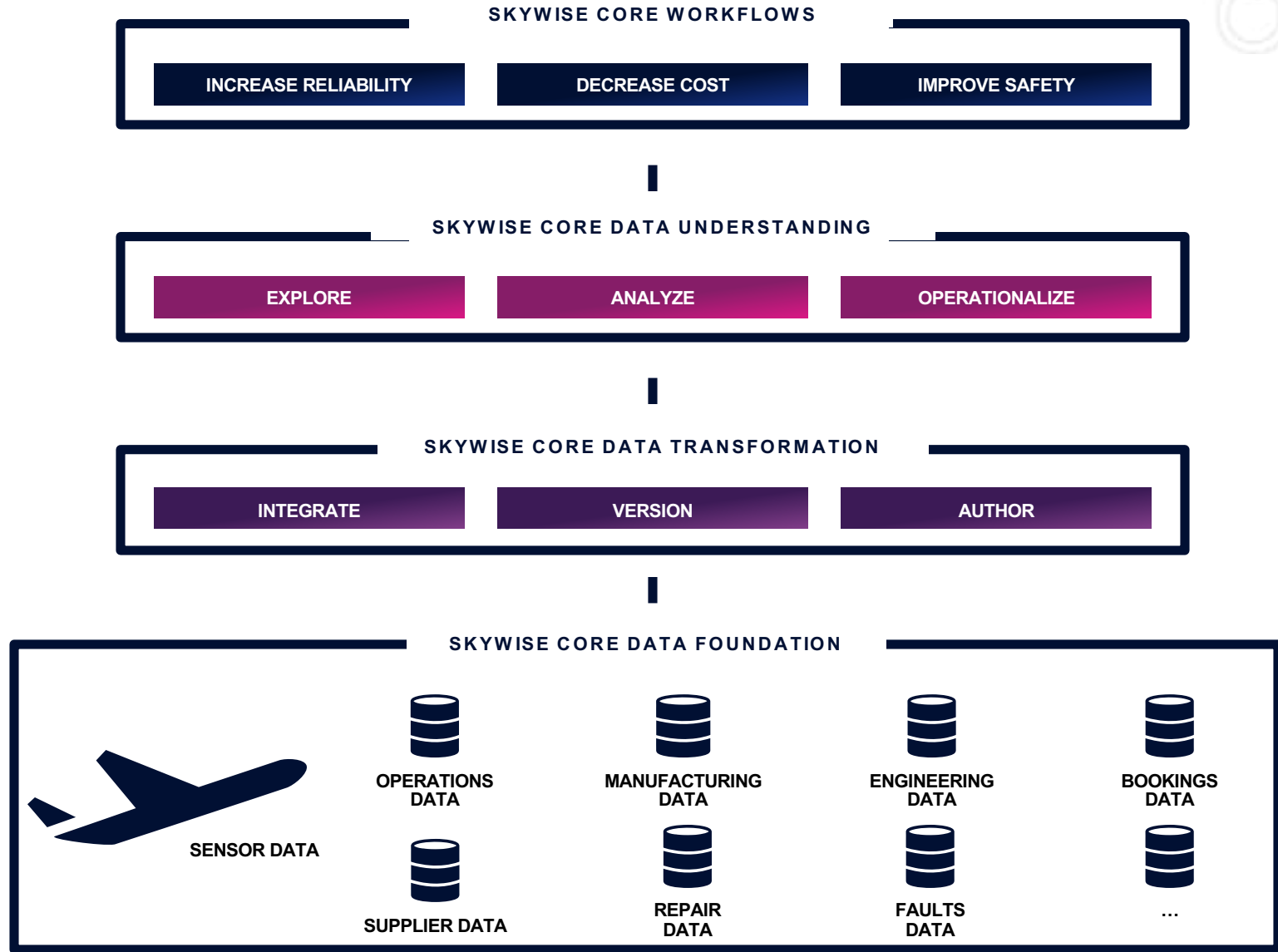
A digital platform for the entire aviation industry's applications and services.



SKYWISE ECOSYSTEM



Data integration capabilities in the Core Platform help transform and operationalize information from different systems



A shared offer for the whole aviation industry

skywise.

Drive fleet performance and operational efficiency

skywise.
DIGITAL
SERVICES

SERVICES
powered by skywise.

Start the data journey on Skywise

skywise Core

Get to the next connectivity level

skywise. Connect

AIRBUS

Skywise Reliability Services

RELIABILITY ANALYSIS



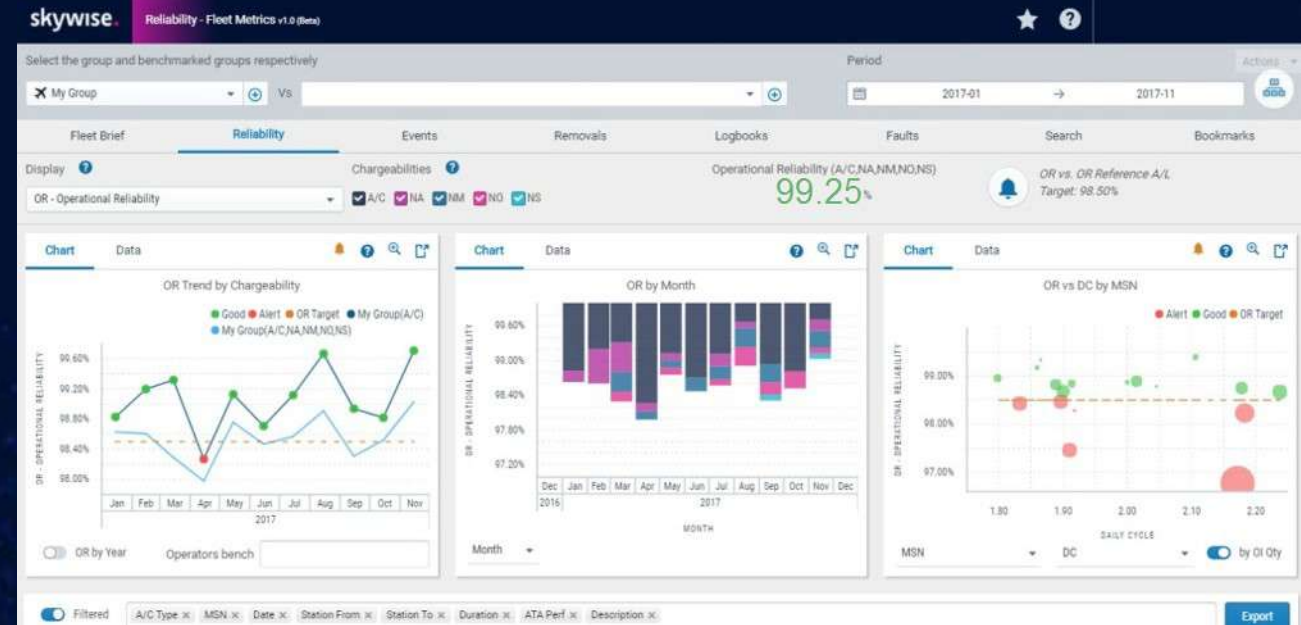
Measure in-service fleet performance

Explore operational data

Benchmark your fleet with other operators and Airbus worldwide fleet.

Pre-analysing & detect issues

Give priorities and assess solutions



Skywise Reliability Services replaces and moves well beyond IDOLS scope.

Skywise Predictive Maintenance

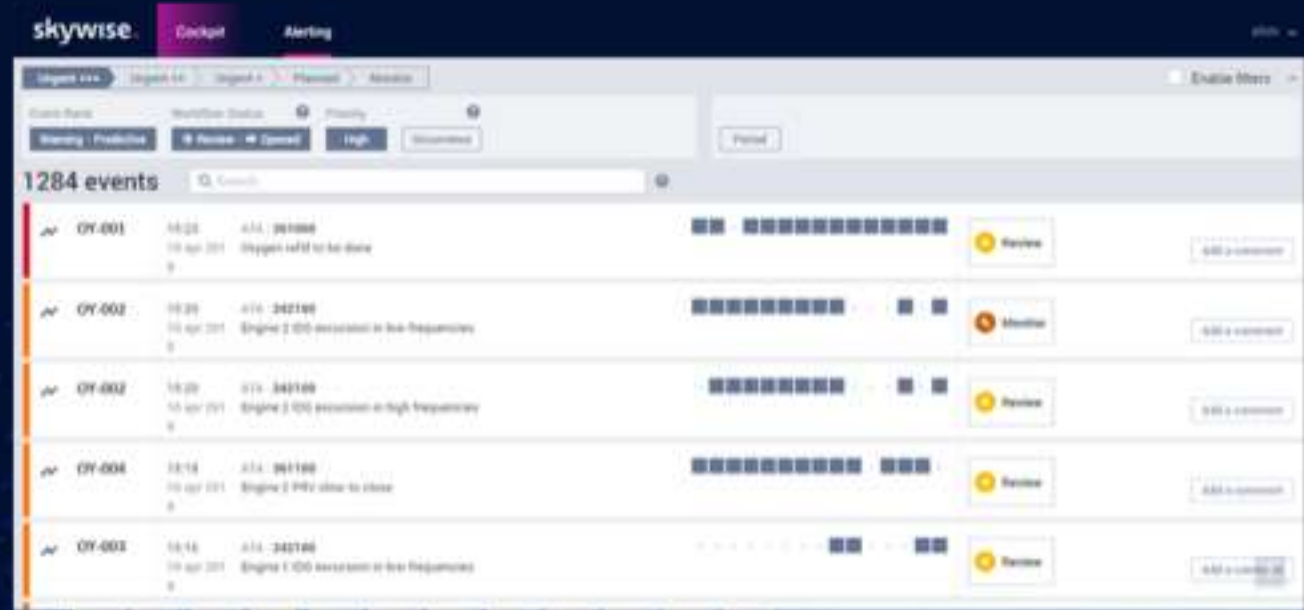
FAILURES ANTICIPATION



Explore unequalled amounts of aircraft data

Use performant analytics to anticipate failures of parts and servicing activities

Reduce significantly operational interruptions



Field proven experience with a dozen flagship operators

With more than 3 petabytes of data already integrated, Skywise is the aviation platform with the richest, most complete data asset: one ecosystem for all stakeholders

As of May 1st, 2018:

- 12 AIRLINES Connected
- 7+ Airlines Signed

Where are we today with data sources

2,000+

Aircraft

12M+

Flights

24M+

Tech Logs

70+

Systems

5,000+

Users

3+ petabytes

DATA ALREADY INTEGRATED
IN SKYWISE



Skywise Predictive Maintenance

Skywise Core



ASIANA AIRLINES 

+1 undisclosed



+4 undisclosed

FHS powered by Skywise

Where we are today in terms of signed contracts

DATA INTEGRATED
IN SKYWISE

800Gb+

per year

298

Aircraft

24,000

Parameters
FOMAX

easyJet

ESTIMATED

SAVINGS* :

108+

Flights

per year⁽¹⁾

15,400+

Passengers

per year⁽²⁾

(1) Number of flights where Skywise could avoid delays or cancellations

(2) Number of passengers that could be no more impacted by flight delays or cancellations

'Our investment in the Skywise platform can really make a tangible difference for thousands of passengers by harnessing the power of big data to reduce delays'

Johan Lundgren, CEO of easyJet

* Extrapolated from proven findings on a subset of easyJet fleet (85 aircraft)

skywise.

Conclusion

- A **unique analytics platform for aviation**, driven by your needs
- Skywise is **open** to the **entire aviation ecosystem**
- Increased performance and lower costs thanks to **data driven decisions**
- Skywise Core **ready now** for your organization **in few days or weeks**
- Predictive Maintenance and Reliability as first **game changing applications**
- Skywise Connect to **ease connectivity experience**



On route to Enhanced Performance

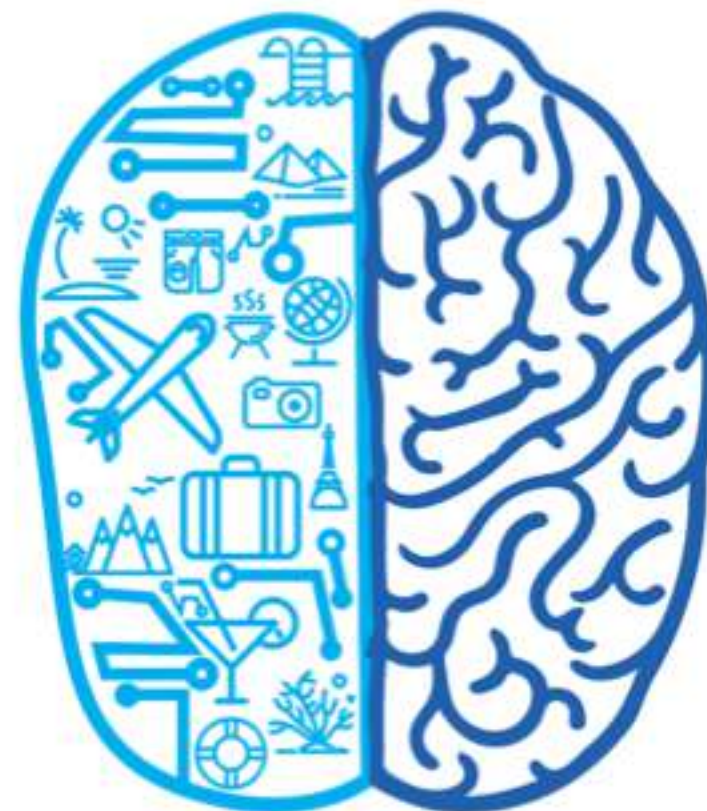
The background features a dense, repeating pattern of small triangles in shades of blue and purple, creating a textured, geometric effect. The colors transition from a deep blue on the left to a vibrant purple on the right.

skywise.The beating
heart of aviation

Imagining the impact of Artificial Intelligence on travel

Rodrigo ACUNA AGOST
Head of AI Research
Amadeus

IATA, Aviation Data Symposium & AI Lab
Berlin, June 19-21, 2018



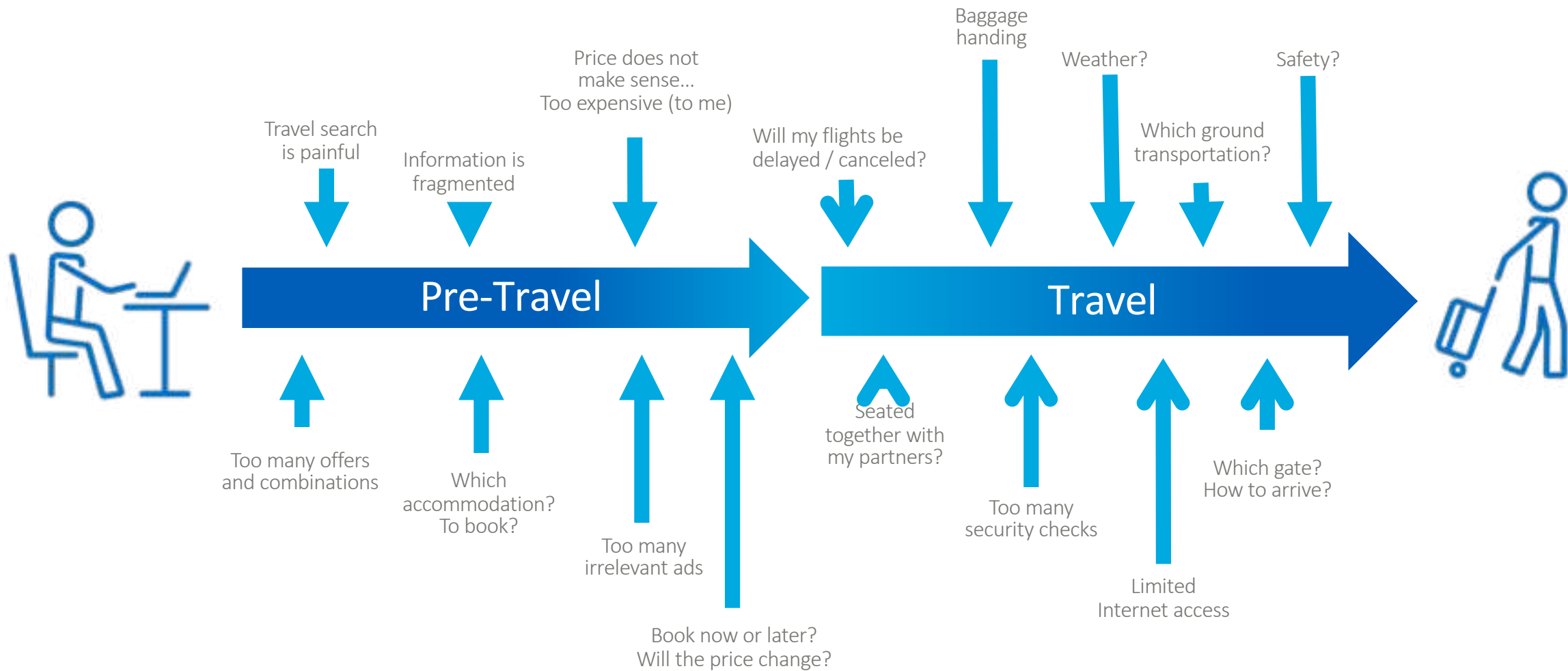
AIResearch



People will spend much less time arranging travel and much more time enjoying the travel experience

Today

Many pain points



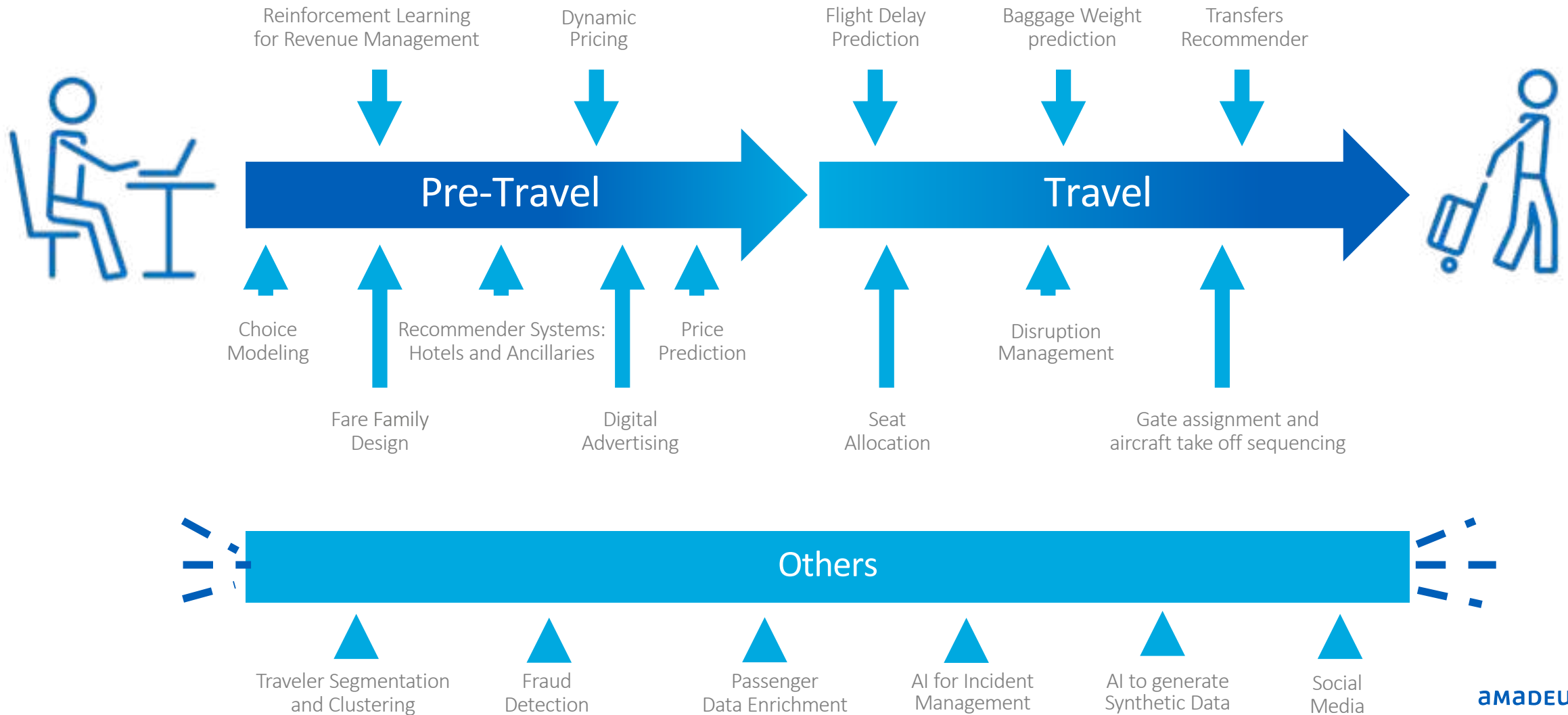
Tomorrow

Booking will be made easy as the system will propose exactly what I want / need

No stress travel: Travel abroad as you would walk in your neighborhood

Some AI use cases

On-going research



1.

Airline Itinerary Choice Modelling



The Problem

I want to travel to Santiago

Nice (France) to Santiago (Chile): December 3 - 5



The Problem

The itinerary choice

Which one?
Cheapest?
Fastest?

✈️

We found 166 flights

Stops ▾ Duration ▾ Price ▾ Departure time ▾ Airlines ▾ Sort by: Price ▾

	Sunday, Oct 9th	20:40	NCE	>	09:00	-1	SCL	17h20	1 stop	2344 €
	Sunday, Oct 10th	13:35	SCL	>	13:40	-1	NCE	19h05	1 stop	
<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>	<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>					
	Sunday, Oct 9th	17:10	NCE	>	08:55	-2	SCL	44h45	2 stops	705 €
	Sunday, Oct 10th	20:40	SCL	>	08:45	-2	NCE	21h05	2 stops	
<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>	<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>					
	Sunday, Oct 9th	07:15	NCE	>	08:03	-4	SCL	29h40	2 stops	1041 €
	Sunday, Oct 10th	21:15	SCL	>	12:15	-4	NCE	34h00	2 stops	
<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>	<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>					
	Sunday, Oct 9th	11:50	NCE	>	08:10	-4	SCL	29h20	2 stops	1336 €
	Sunday, Oct 10th	11:45	SCL	>	11:00	-4	NCE	30h15	1 stop	
<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>	<input type="button" value="Flight details"/>	<input type="button" value="Add to plan"/>	<input type="button" value="Select"/>					

I am not sure,
so how can Airlines
be?

Ingredients

Itinerary Quality

Geographic information

Date / Time Preference

Price elements

Airline/Aircraft Preference

Fare Families

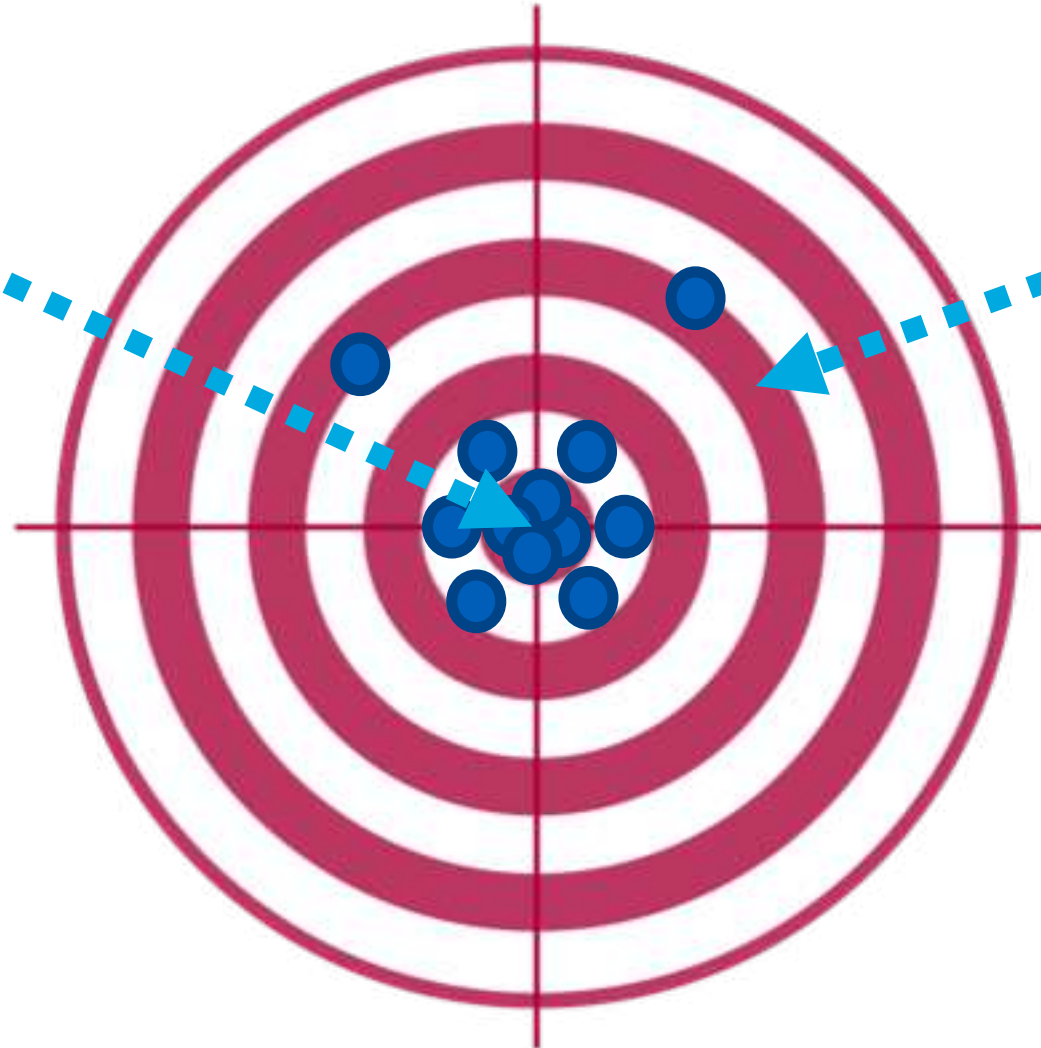
Models

- > Discrete choice models
- > RNN / Pointer Networks
- > Random Forest

The Results

amadeus

20%
of **exact**
choice prediction
(among 50 alternatives)

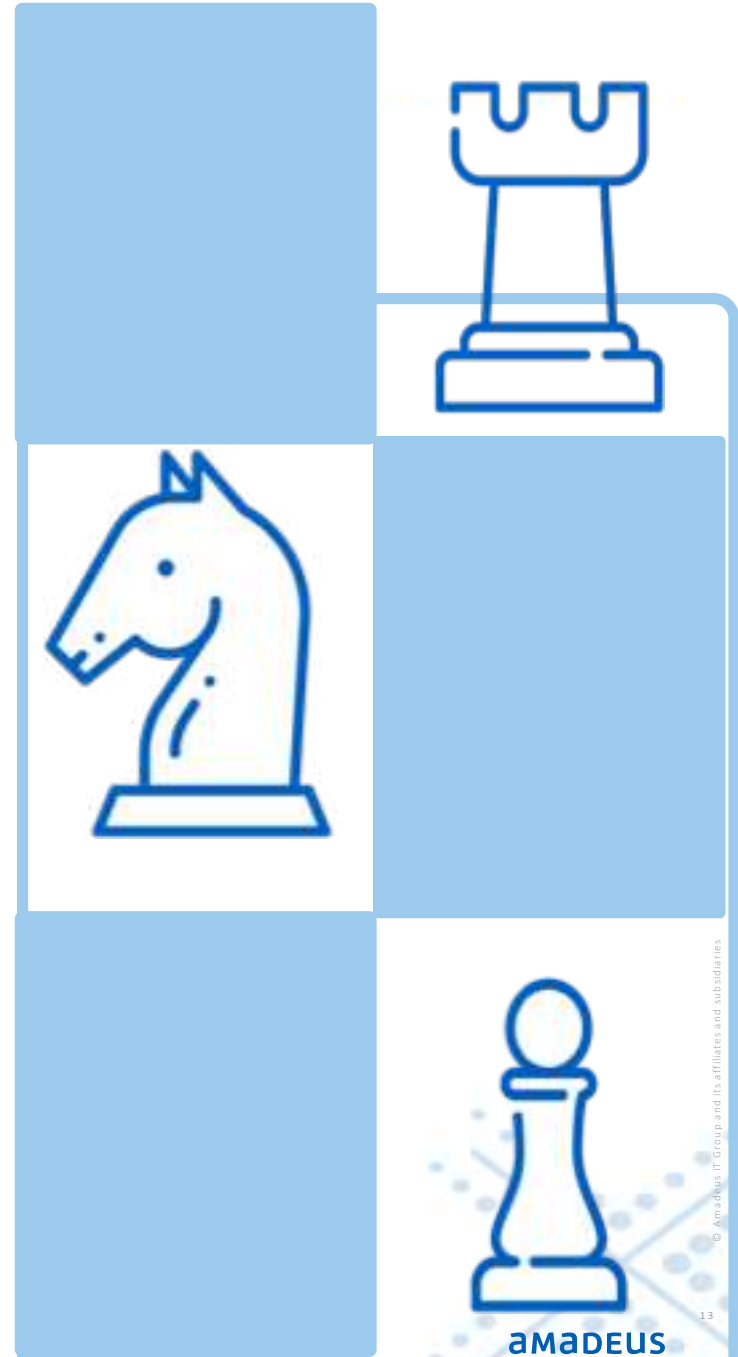


60%
of predictions
on **Top 5** alternatives
(among 50 alternatives)

2.

Deep Reinforcement Learning for Revenue Management

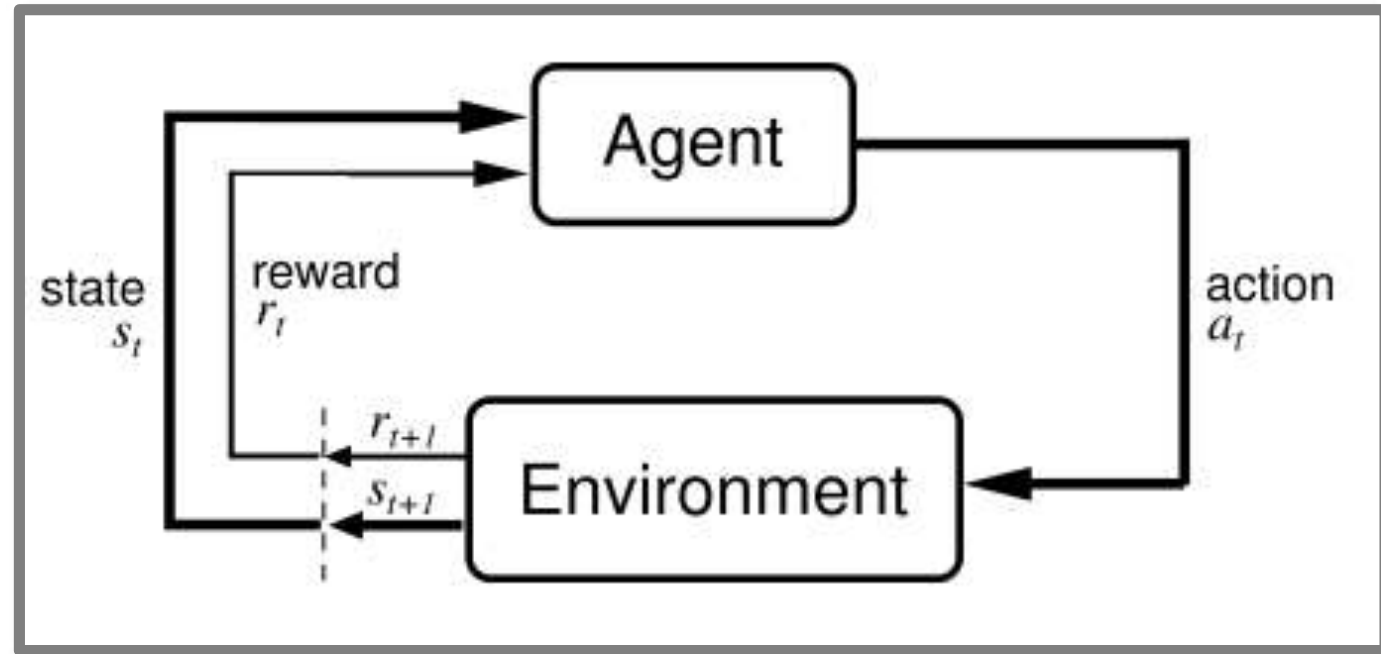
Reinforcement Learning



Reinforcement Learning

The main elements

- (1) Actions
- (2) State
- (3) Reward

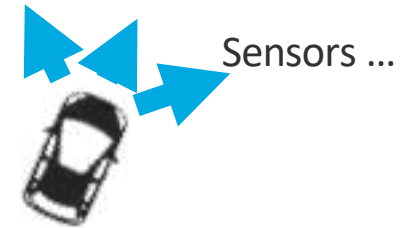


START LEARNING

Actions: { Left, no-change, Right }

State: { Information of Sensors }

Reward: Stay alive as long as possible (alive = no crash)



Our Research & Experimentation

Revenue Management scenario

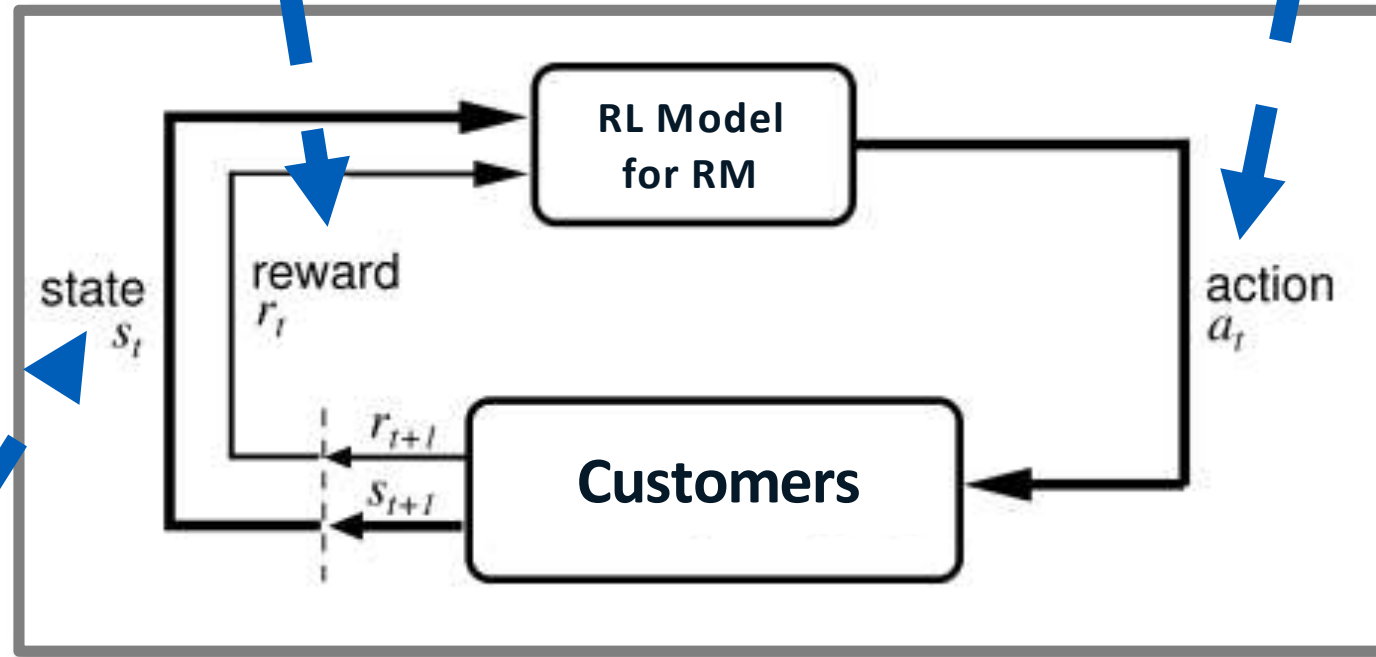


Reward = revenue received from the customer

Actions = {RL sets price}

“Simple” scenario:

- One flight leg
- 200 seats
- One product
- 10 fares
- Monopoly
- WTP may change

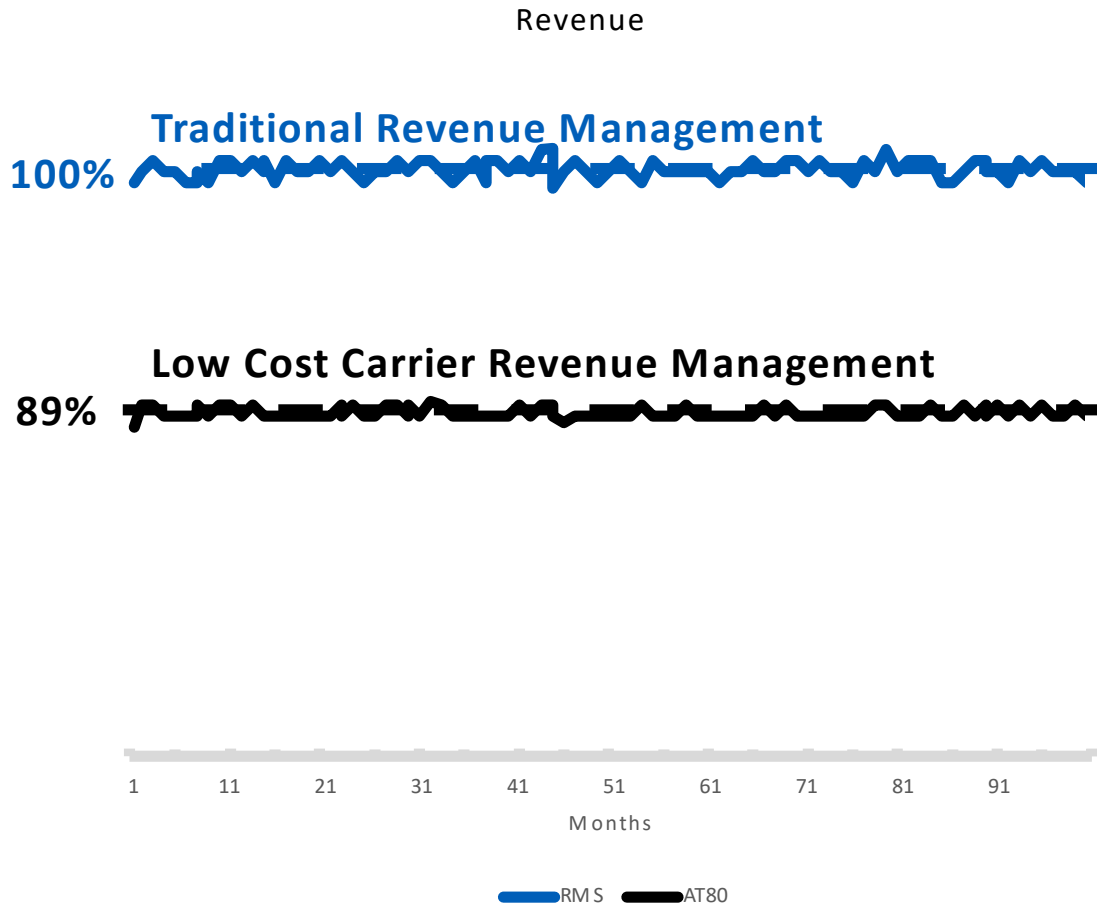


State = {number of booked customers and time}

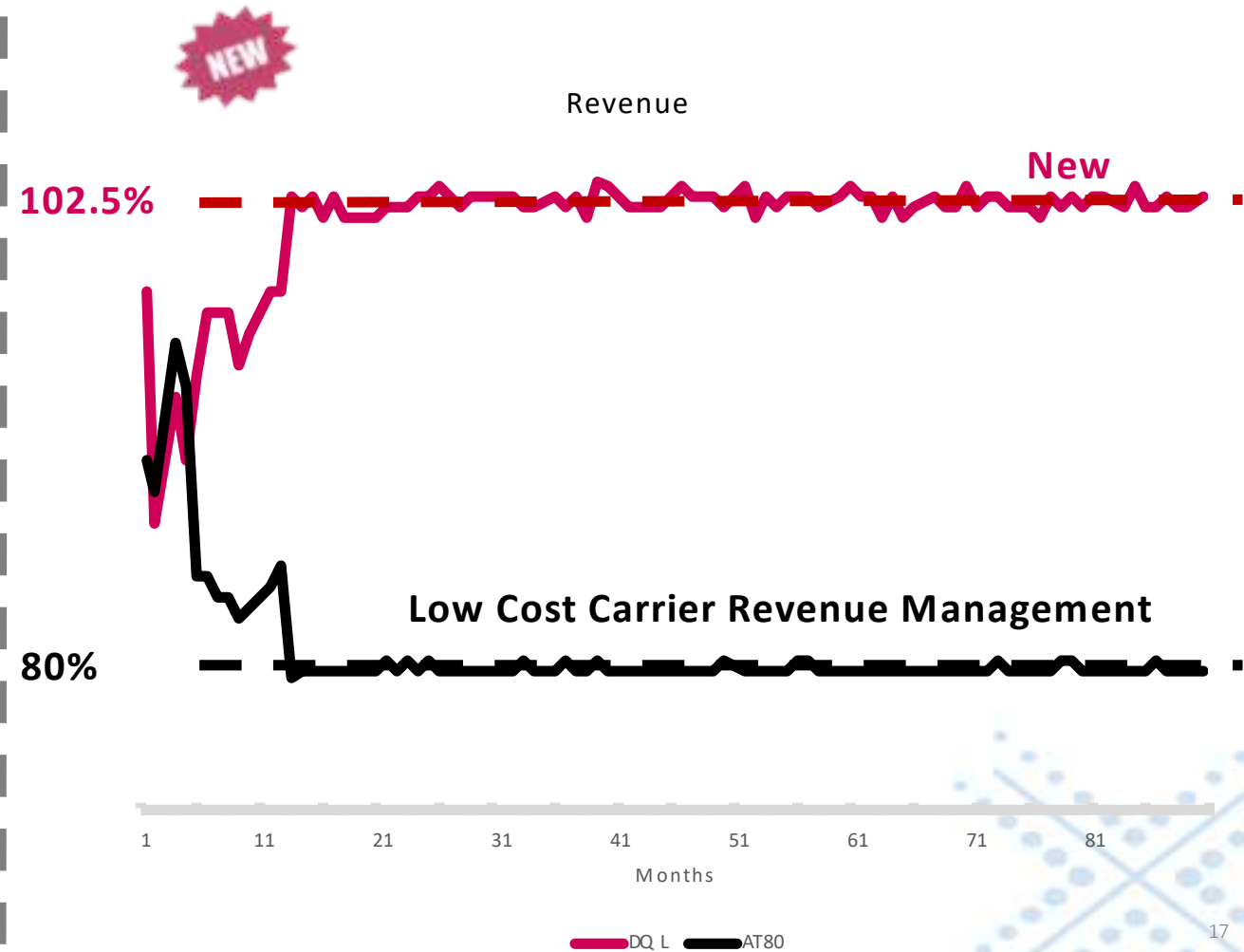
Our Research & Experimentation

Two airlines in competition

RMS vs Competitor



DRL vs Competitor



3.

Continuous Experimentation



Our Vision

Addressing some limits

- _ Are the **best variations** changing over time?
- _ How to trade-off **exploration** and **exploitation**?
- _ We believe **AI** can beat experts at this!

When AI beats human



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Flying from

Flying to

Departing

Returning

Adults Children Infants

Cabin

Return
 One way

Looking for inspiration?

Discover and like the world through videos



Thank YOU
research@amadeus.com



Secure Messaging

A direct connection that you control.

Dave Evans, VP Social Strategy, Travel & Hospitality

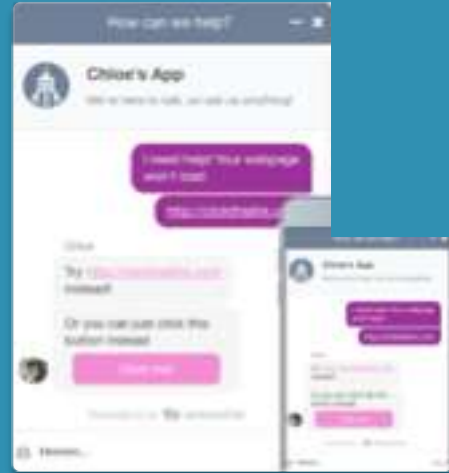


Lithium

WEB MESSAGING: CHAT 2.0

Web messaging is an upgrade to existing “chat” tools:

- Asynchronous
- Secure
- Your Domain



WHY IS THIS CRITICAL NOW?

Web messaging is an upgrade to existing “chat” tools:

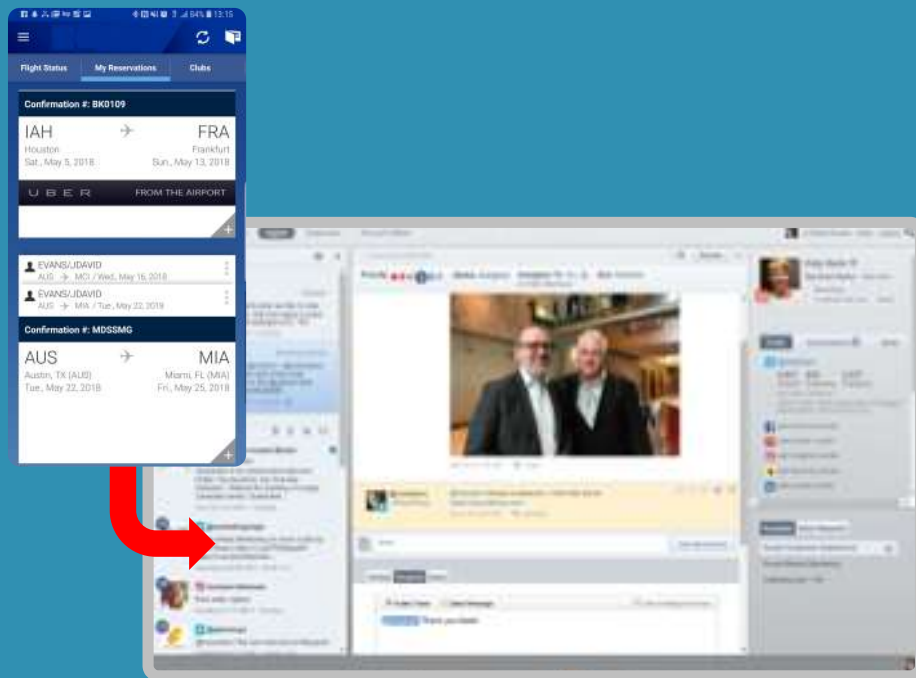
- Secure Channel
- You Control Your Data
- Resides on Your Domain
- Secure Transfer



MOBILE APP SDK: MESSAGING INTEGRATION

App-integrated Messaging

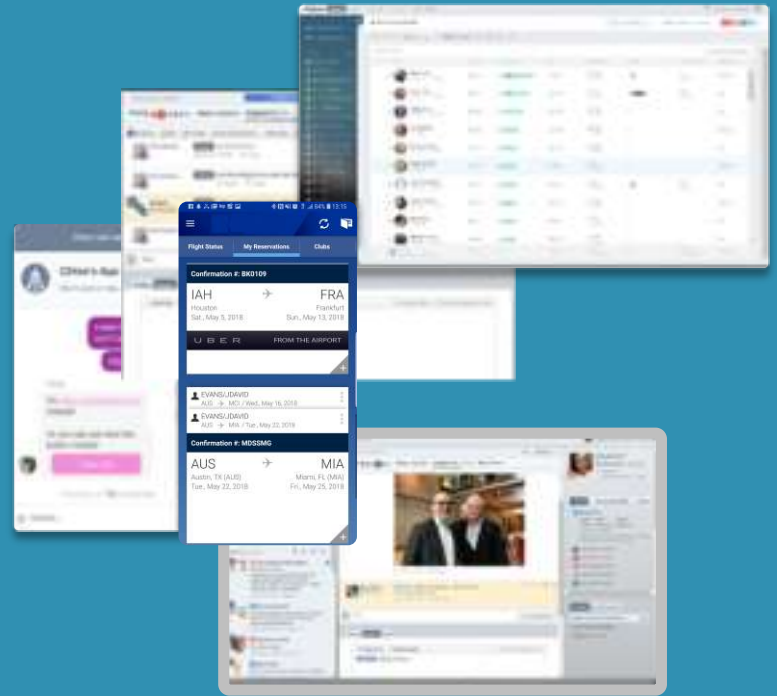
- Connect airline/airport apps directly to passengers.
- Secure commerce (e.g., seat upgrades); secure data.
- GDPR-compliant



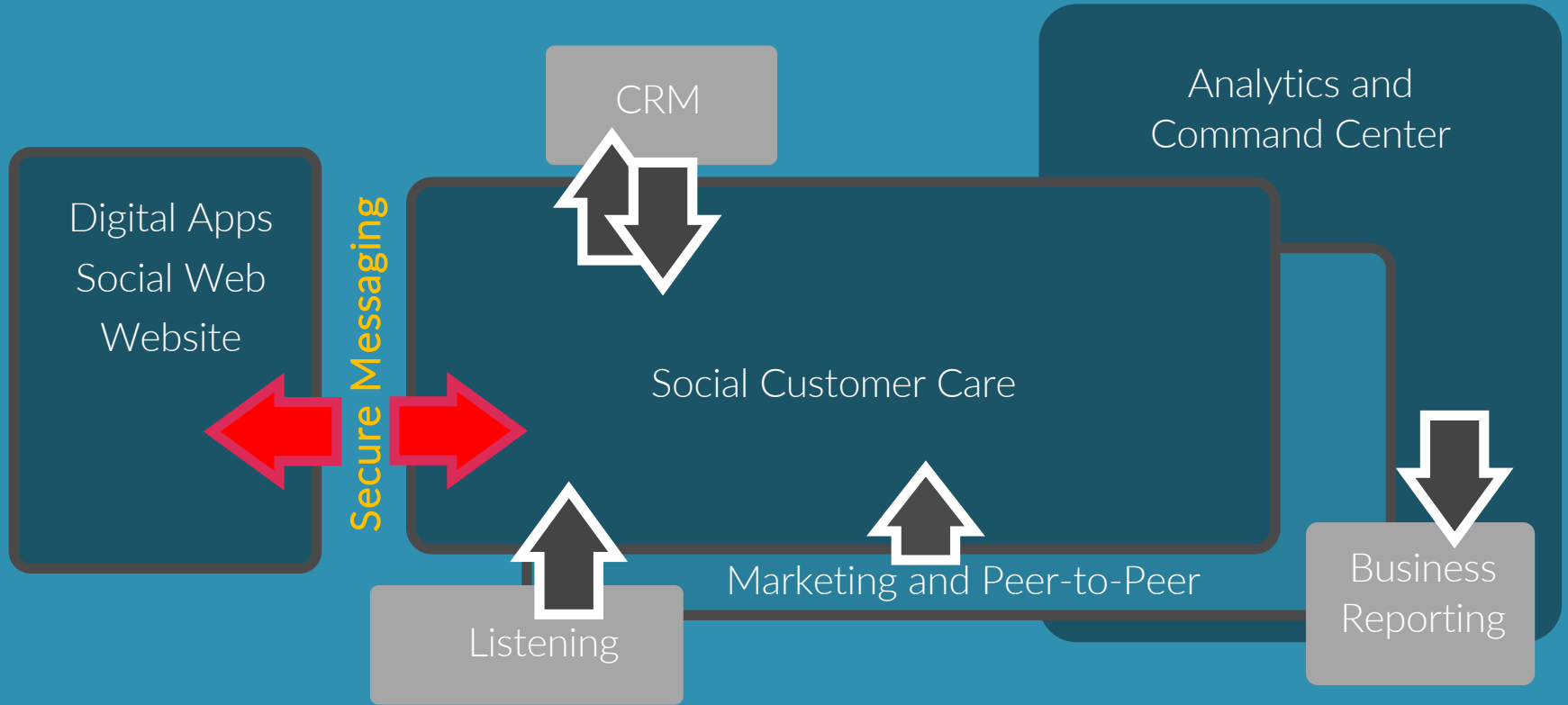
WHAT DOES THIS MEAN FOR AIRLINES?

Strategic Implications

- Web Messaging: Chat 2.0
 - Control over channel security
 - Control over customer experience
 - Integration with analytics
- Direct Secure Transfer
 - Commerce
 - Sensitive transactions
 - Control over data



SUMMARY: A SECURE DIGITAL CUSTOMER EXPERIENCE PLATFORM



QUESTIONS?

Secure Messaging

A direct connection that you control.

Dave Evans, VP Social Strategy, Travel & Hospitality



Lithium



NEW OPPORTUNITIES AROUND DATA AND PERSONALIZATION IN THE AIRLINE INDUSTRY

AVIATION DATA SYMPOSIUM & AI LAB

IATA, BERLIN JUNE 19TH 2018

INNOVATING

MEANS DOING THINGS
DIFFERENTLY





INNOVATING

MEANS DOING THINGS
DIFFERENTLY



FOCUS ON USERS NEEDS!

The Google logo is displayed in white on the glass facade of a modern building. The building has a blue-tinted glass exterior and a flat roof. The sky is clear and blue.

- If user can't spell, it's our problem
- If they don't know how to form the query, it's our problem
- If they don't know what words to use, it's our problem
- If they can't speak the language, it's our problem
- If there's not enough content on the web, it's our problem
- If the web is too slow, it's our problem



WE HELP WITH
**THE DIGITAL TRANSFORMATION OF THE
TOUCHPOINTS BETWEEN
COMPANIES AND THEIR CUSTOMERS,**
IMPROVING SOME AND CREATING NEW ONES.

smartvel PROVIDES CONTENT SOLUTIONS FOR:



AIRLINES

Airlines have our technology integrated within their digital channels, adding value and generating more income.

PAIN

Airlines struggle to be more present throughout the customer journey

VALUE

Increasing touchpoints, adding value, inspiring travel

FUTURE

Digital Content for airlines is a must nowadays.

TRACTION

Relevant customers are buying Smartvel's solution, paying a monthly fee for it.

SINGAPORE AIRLINES



IBERIA



AirEuropa

SMARTVEL IS A DATA ORIENTED COMPANY

(AI, BIG DATA, MACHINE LEARNING)



smartvel
TRAVEL SMART

A hand holding a smartphone is the central focus, set against a background of out-of-focus, colorful bokeh lights in shades of red, yellow, and purple. A dark horizontal band is overlaid across the middle of the image, containing white text.

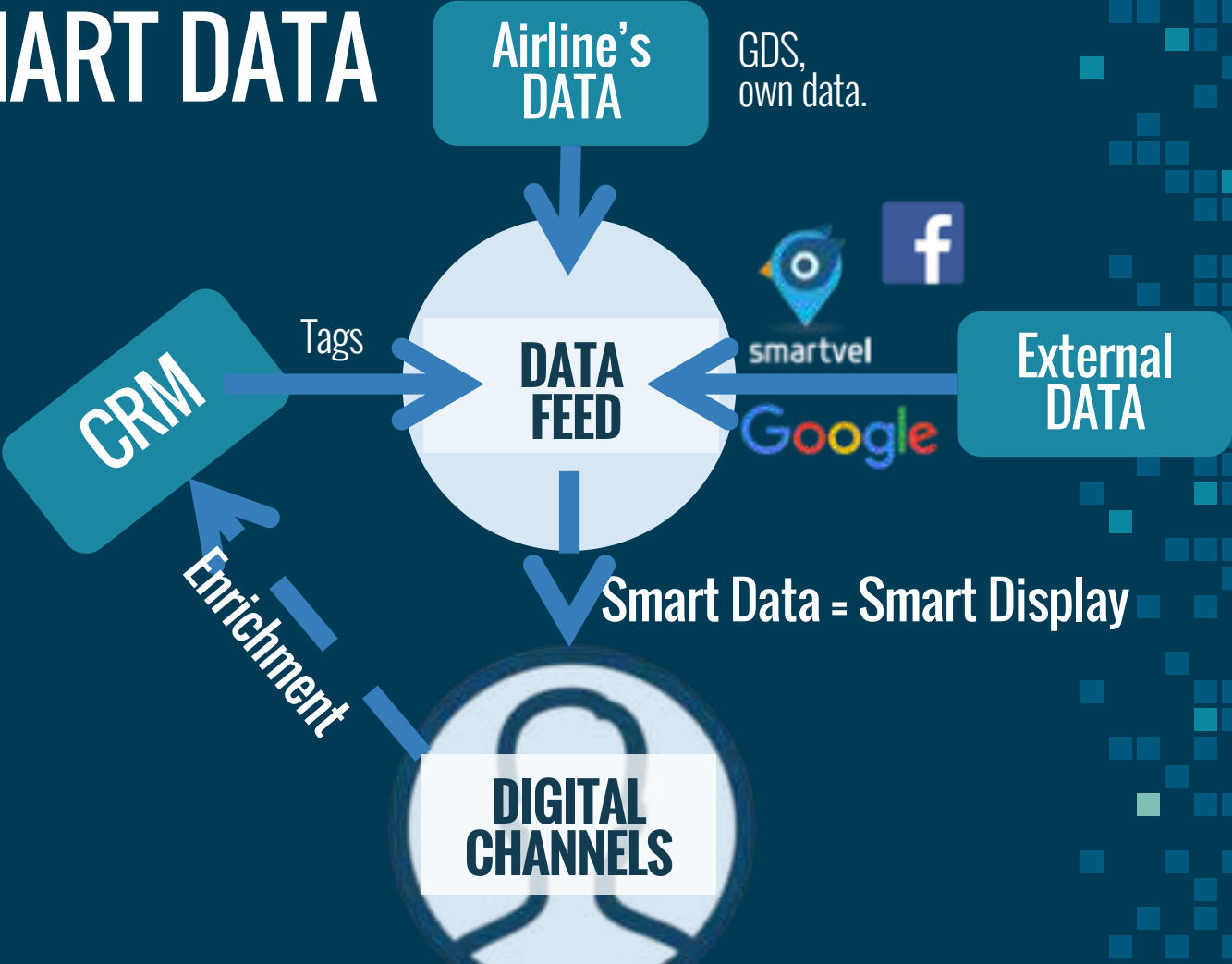
RETHINKING TOUCHPOINTS

AS TOUCHPOINTS, WE UNDERSTAND THOSE MOMENTS WHERE THE COMPANY INTERACTS WITH ITS CLIENTS, THE MOMENTS OF TRUTH.

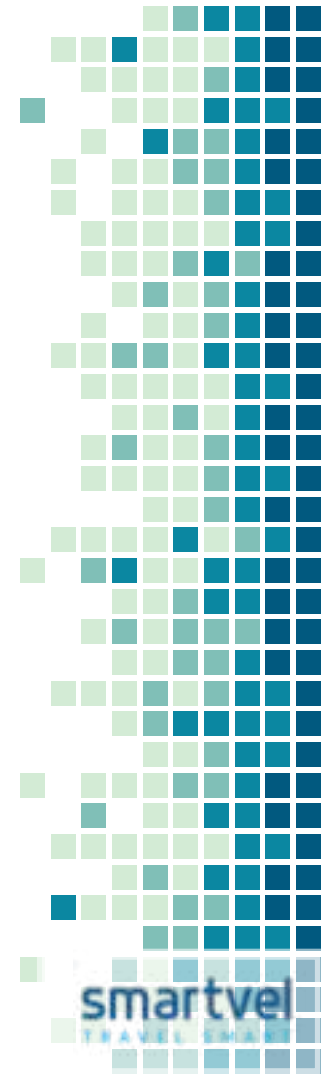
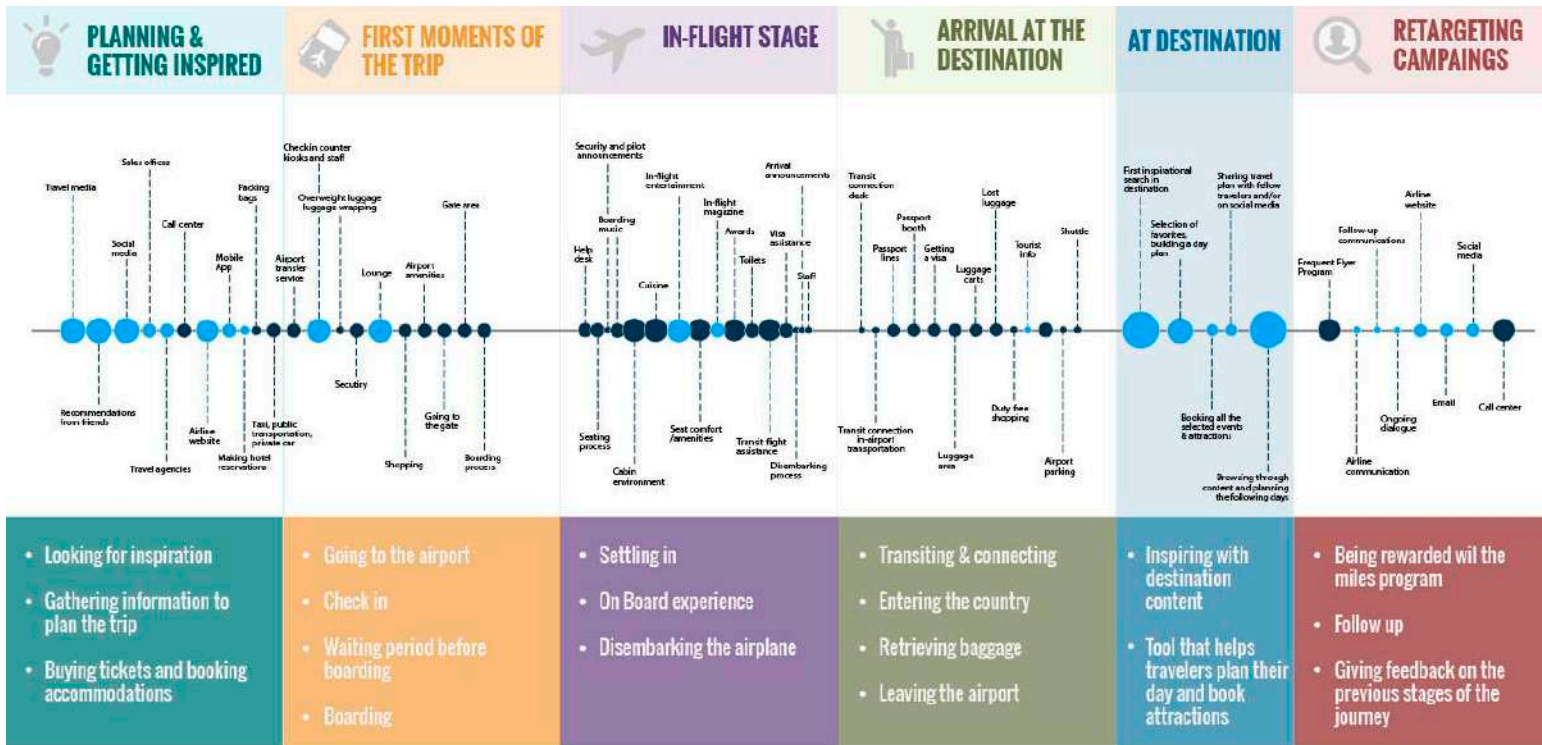
FROM BIG DATA TO SMART DATA



SMART DATA

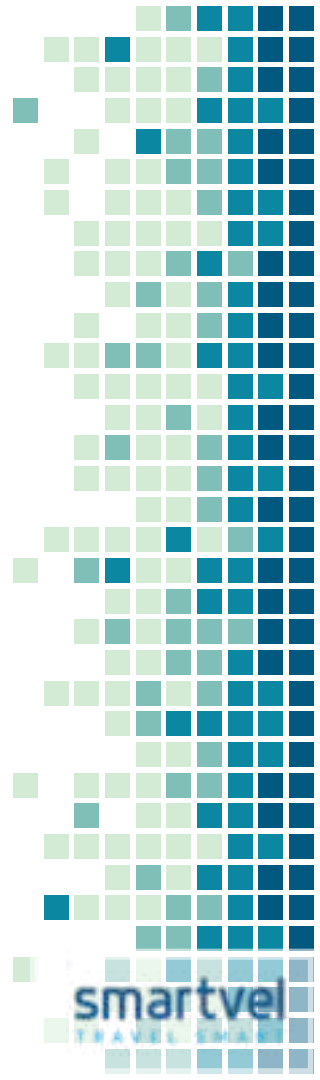


TOUCHPOINTS WHERE SMARTVEL PLAYS A CRUCIAL ROLE



PLANNING & GETTING INSPIRED

- Looking for inspiration
- Gathering information to plan the trip
- Buying tickets and booking accommodations

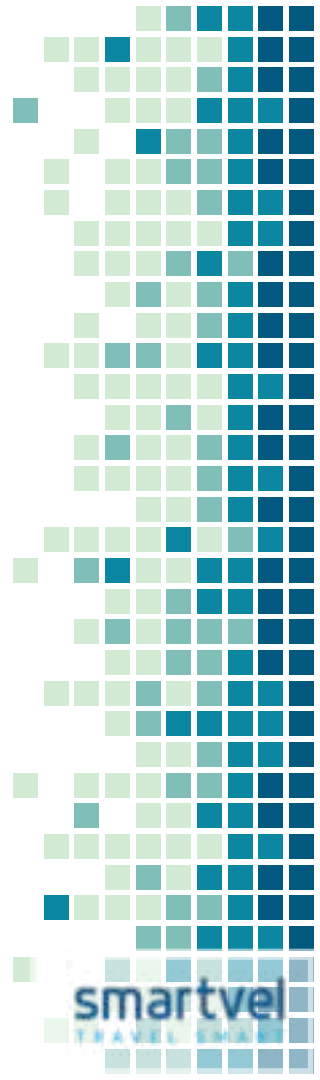


NEW TOUCHPOINT

PRE-DEPARTURE

- Campaigns
- Web/Web Mobile/APP
- Pre-departure emails

Real Sample of Pre-Departure Email
of Air Europa



NEW TOUCHPOINT

PRE-DEPARTURE

- Check-in
- Notification push APP

Push notification or after check-in link to what to do at your destinations on the dates of your travel





THANKS!

Let's amaze your travelers

Iñigo Valenzuela

CEO & Founder

ivalenzuela@smartvel.com