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Aviation Industry Data Management

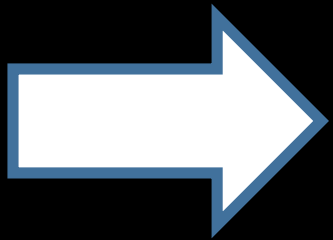
Scope of IATA role: Advocacy, Standards, Platforms

In Scope

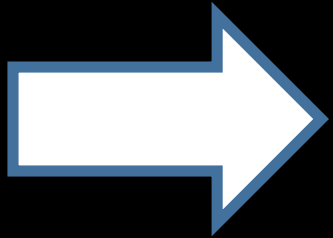
- Support industry strategic priority
- Adopt global standards
- Support industry operations

Explore

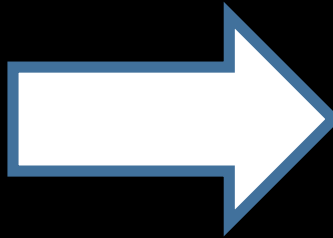
- Not being done effectively
- Impacts competition, choice, control



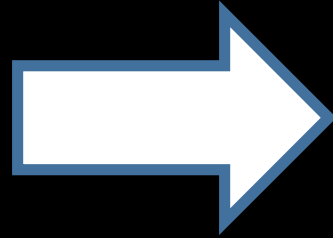
BENEFIT OUR CUSTOMERS



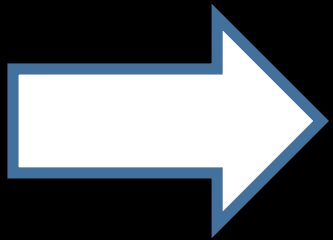
SAFE



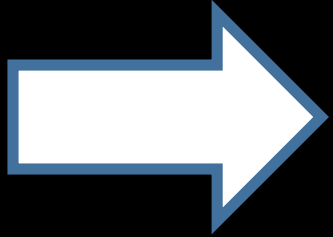
SECURE



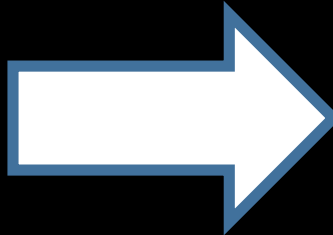
PROFITABLE



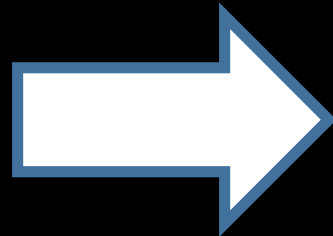
Passenger Distribution & Sales Data



Safety & Operations Data



Airfreight Business Intelligence



CIO/Technology Forum

HOW TO UNLOCK THE
VALUE OF BIG DATA?

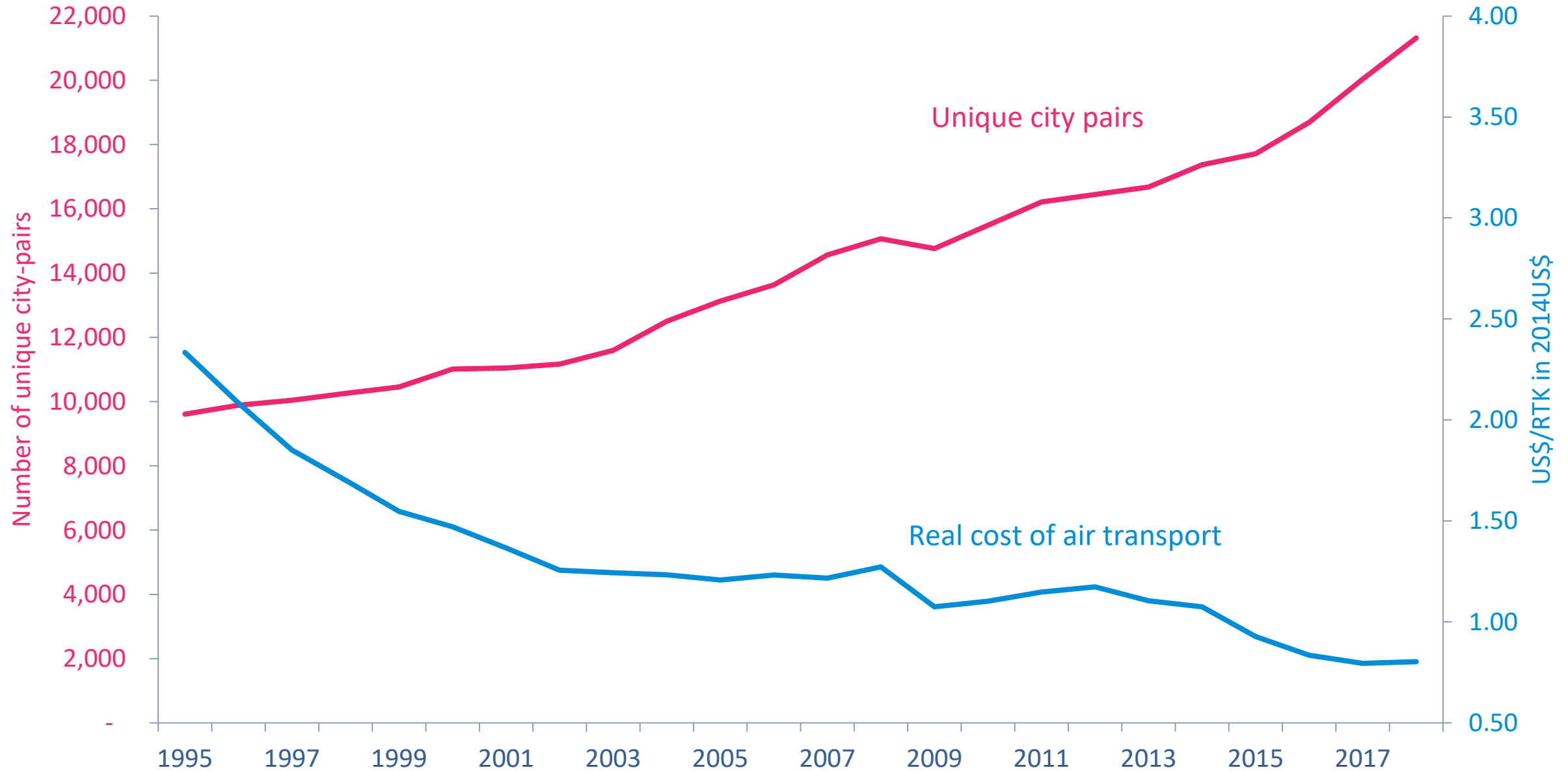


Economic performance of the airline industry: mid-2018 update

Brian Pearce,
Chief Economist,
IATA

www.iata.org/economics

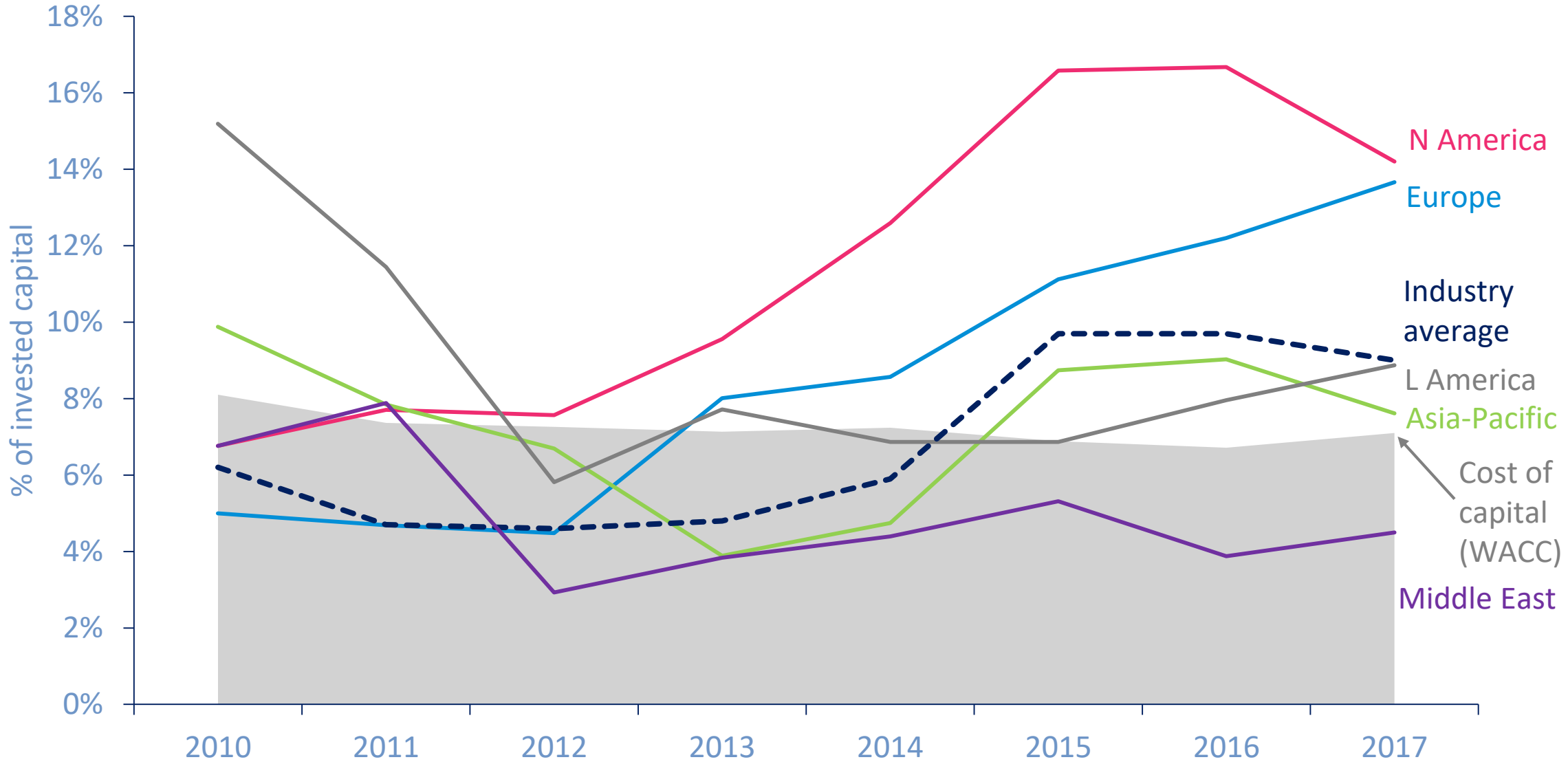
Record city-pair connections bring choice and economic benefits



Source: IATA Economics using data from ICAO, IATA Statistics, SRS Analyzer and our own forecasts

Airlines are also creating value for investors

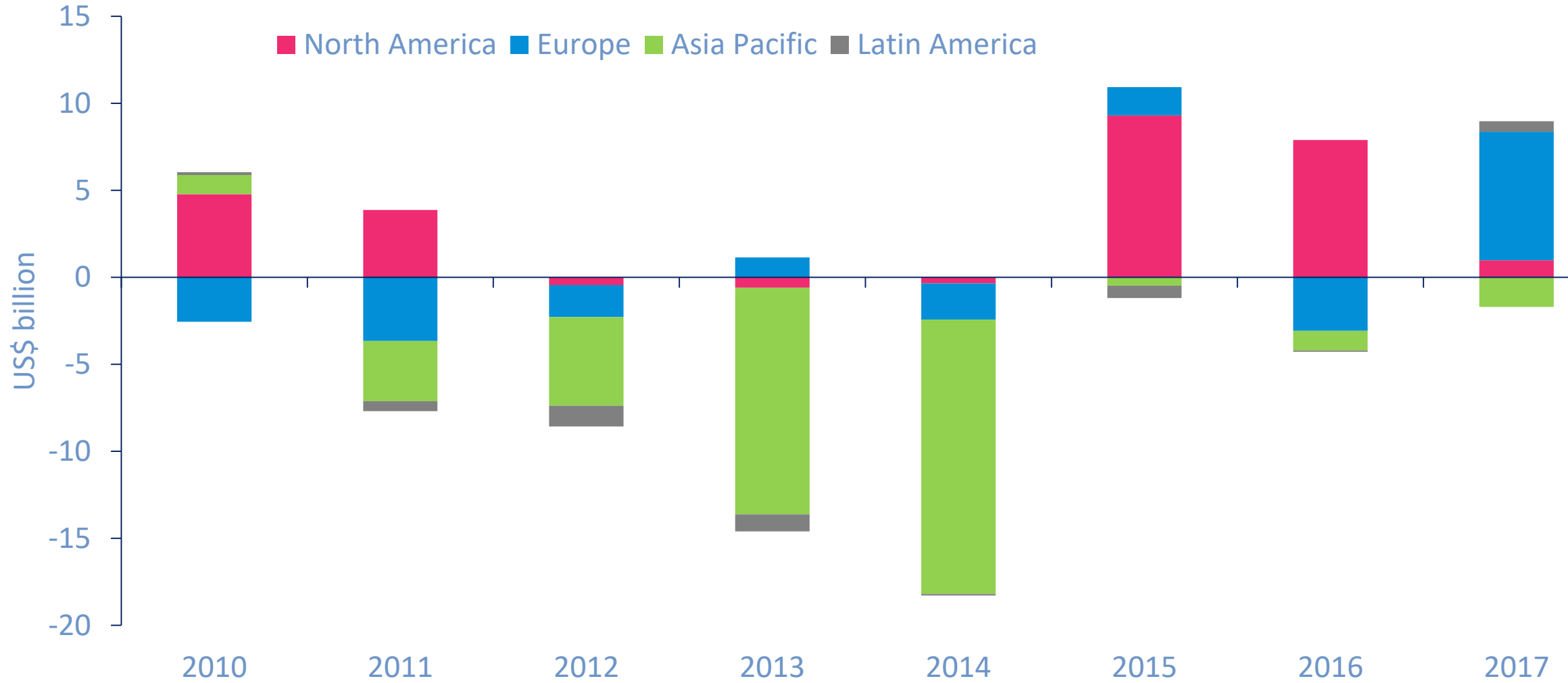
Return on invested capital



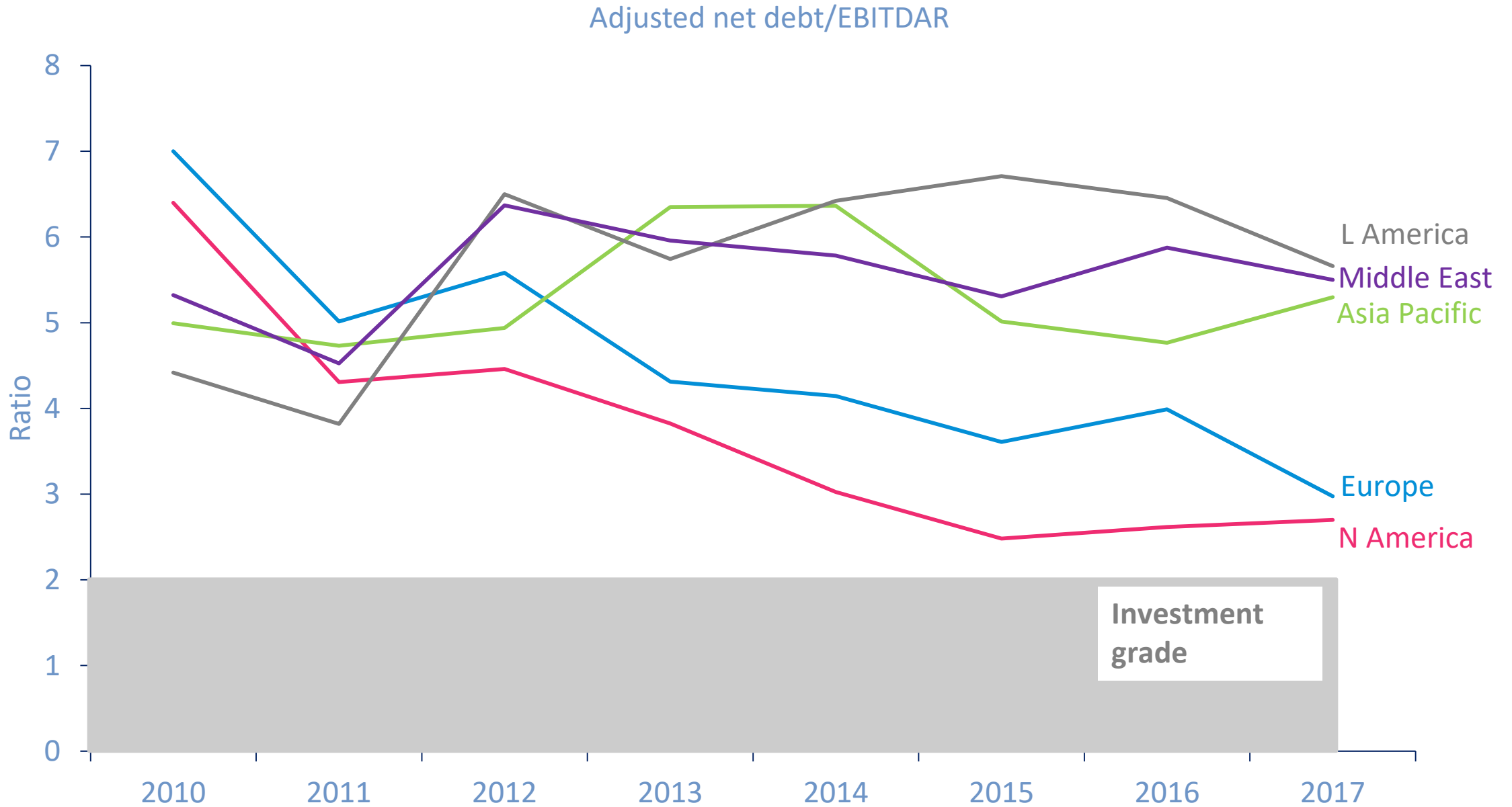
Source: IATA Economics using data from The Airline Analyst

Strong free cash flows allow debt to be repaid

Free cash flow

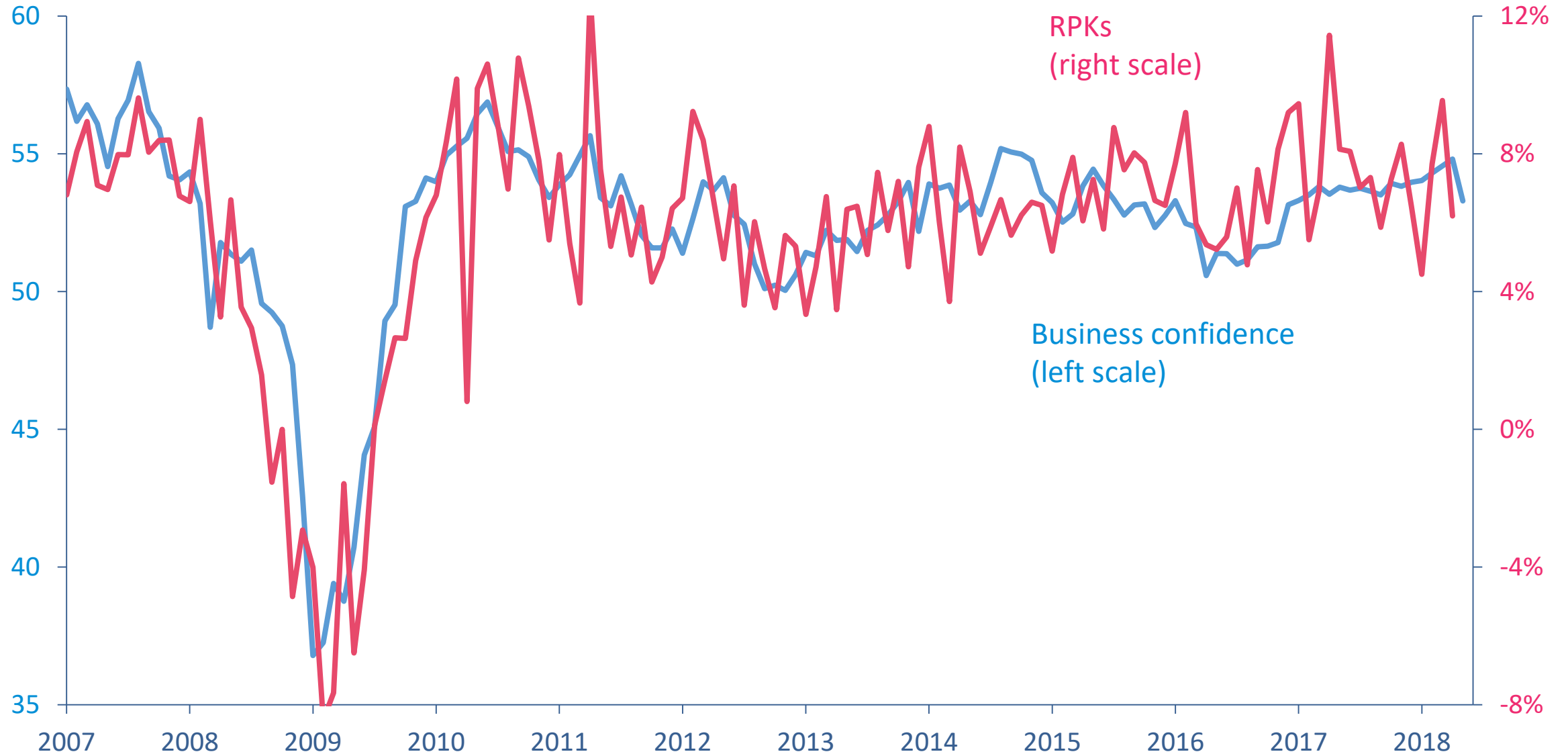


Though airline balance sheets have not yet improved in all regions



Air travel continues to grow above-trend in early 2018

Diffusion indices



% year-on-year

RPKs
(right scale)

Business confidence
(left scale)

12%

8%

4%

0%

-4%

-8%

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

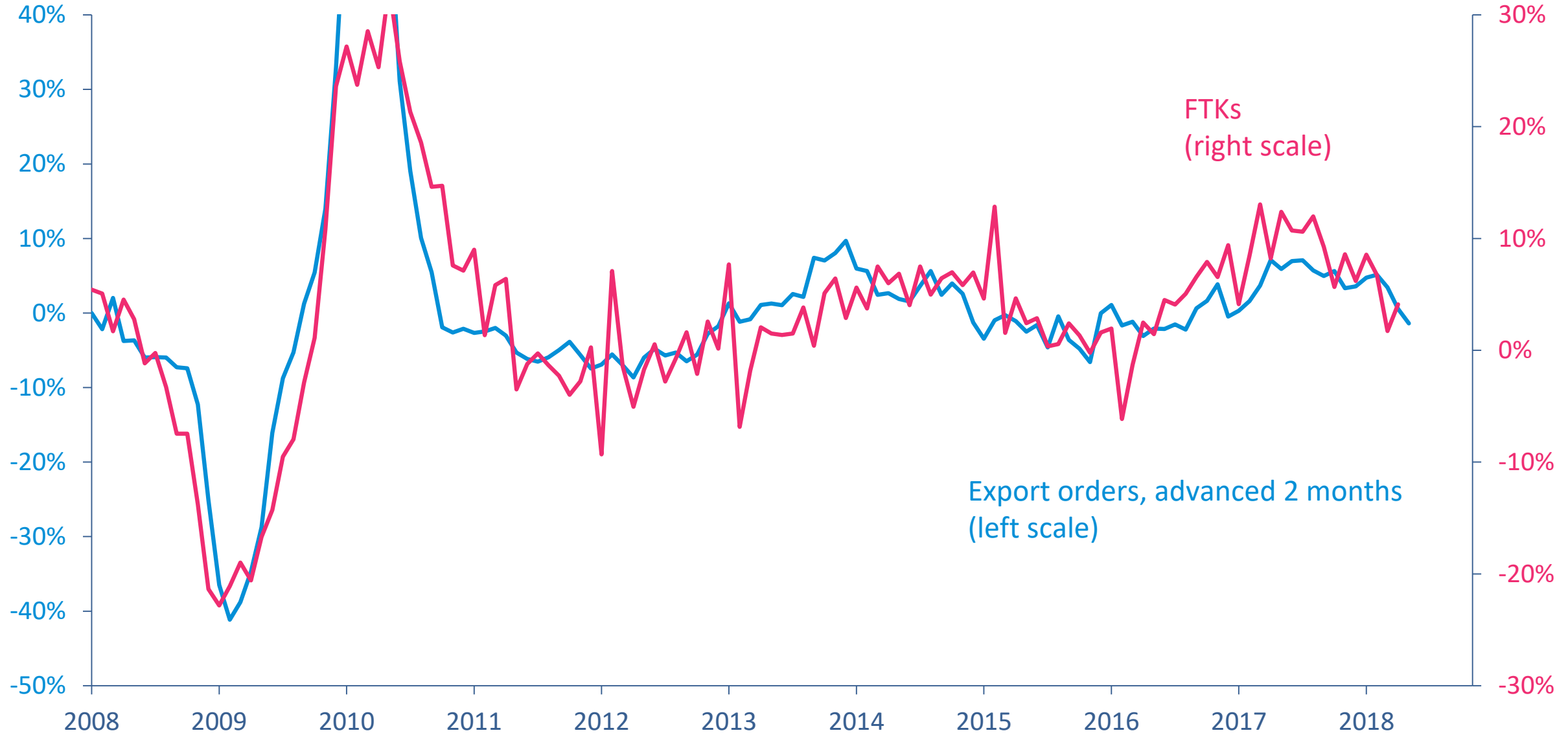
2017

2018

Cargo slowing as inventory re-stocking cycle ends

% year-on-year

% year-on-year

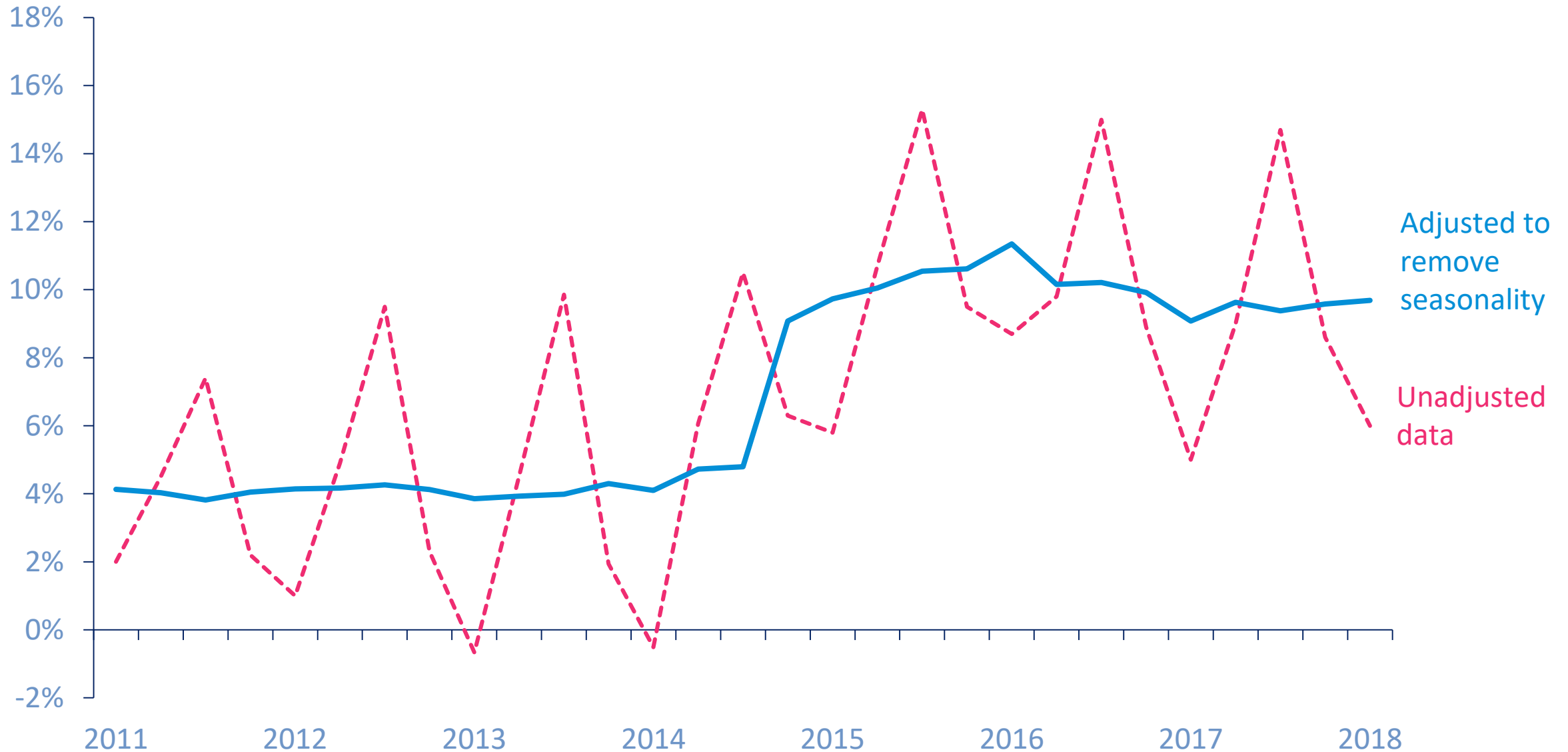


Export orders, advanced 2 months
(left scale)

FTKs
(right scale)

Airlines' operating margin was stable in the first quarter of 2018

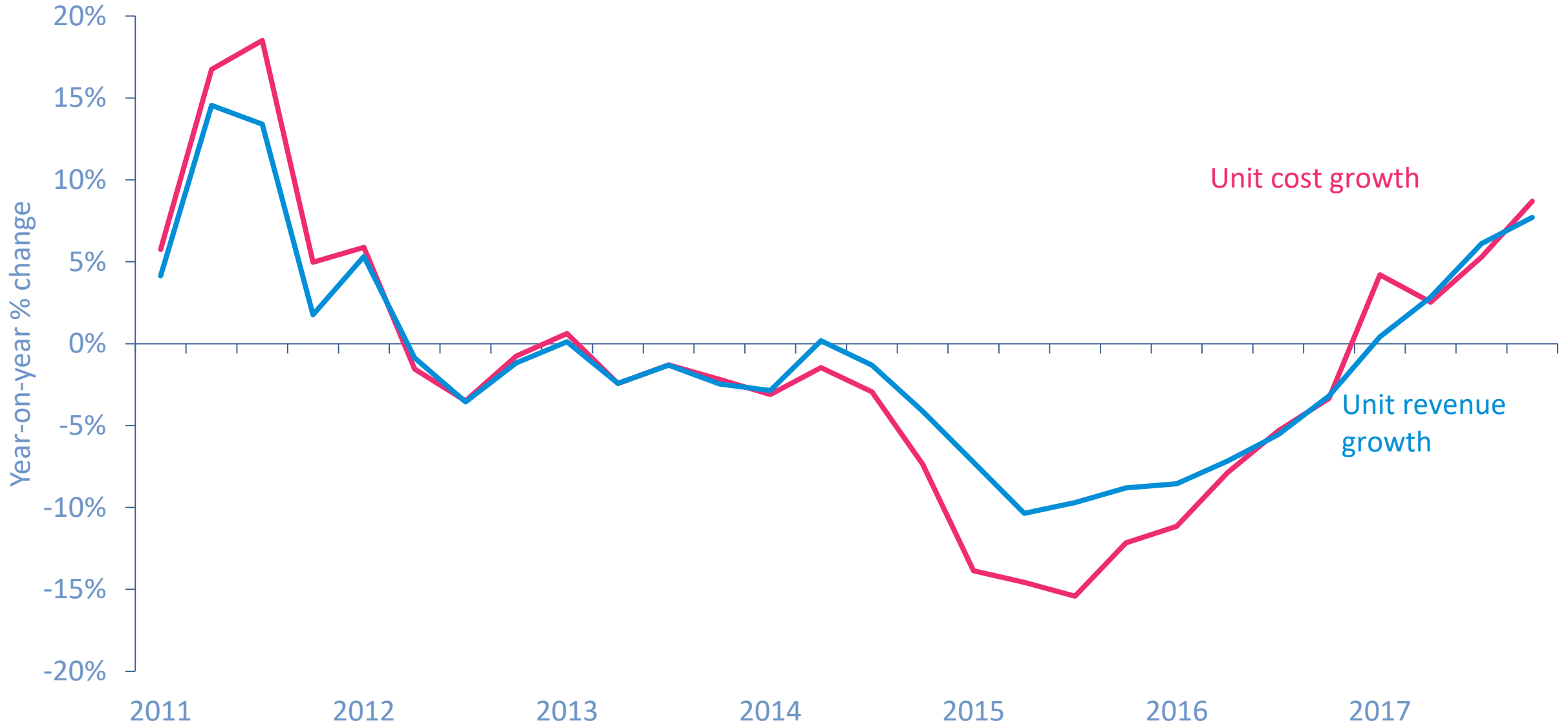
Worldwide average airline operating margin



Source: IATA Economics using data from The Airline Analyst, airline releases. Note: This data is from airlines report quarterly only

But the industry now faces severe late-cycle cost pressures

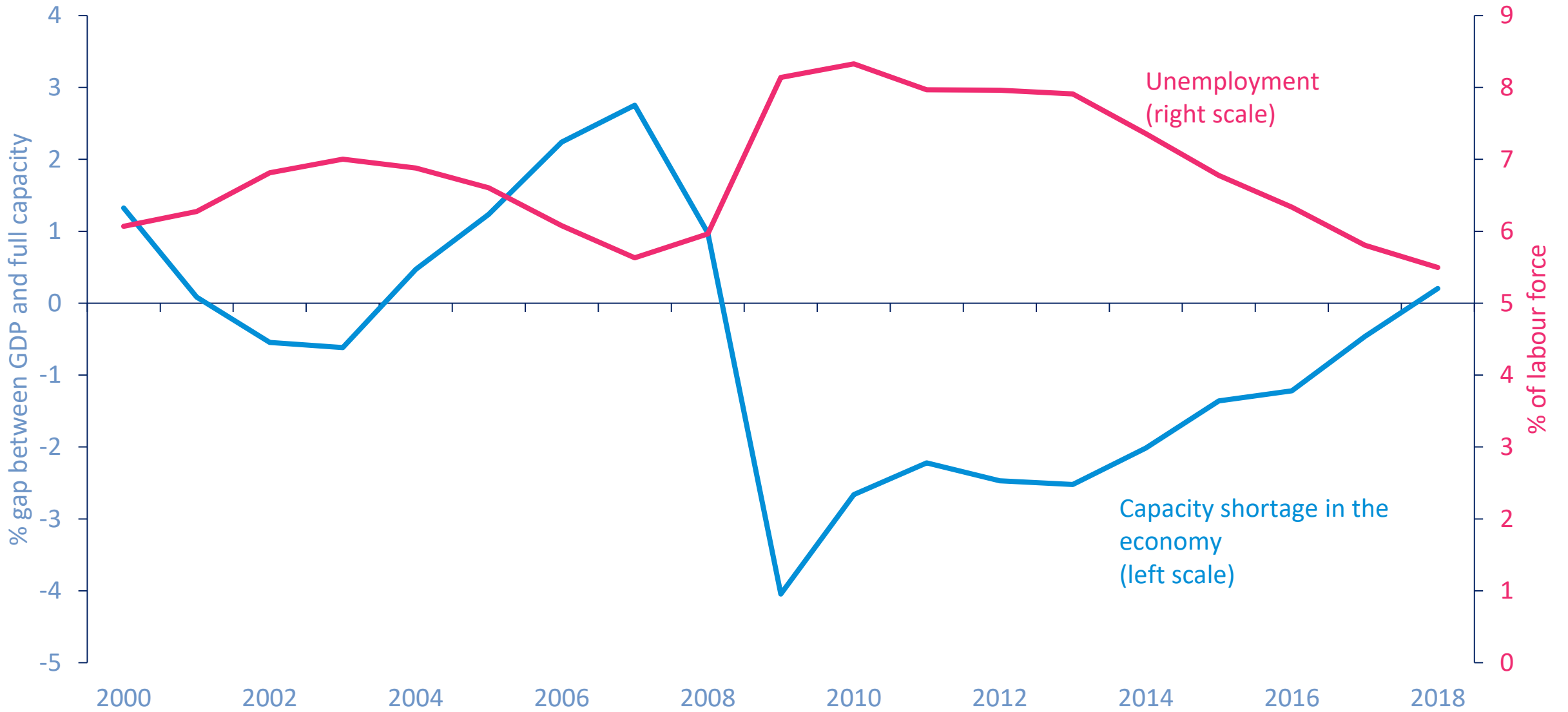
Industry wide growth in unit revenues and unit costs



Source: IATA Economics using data from The Airline Analyst

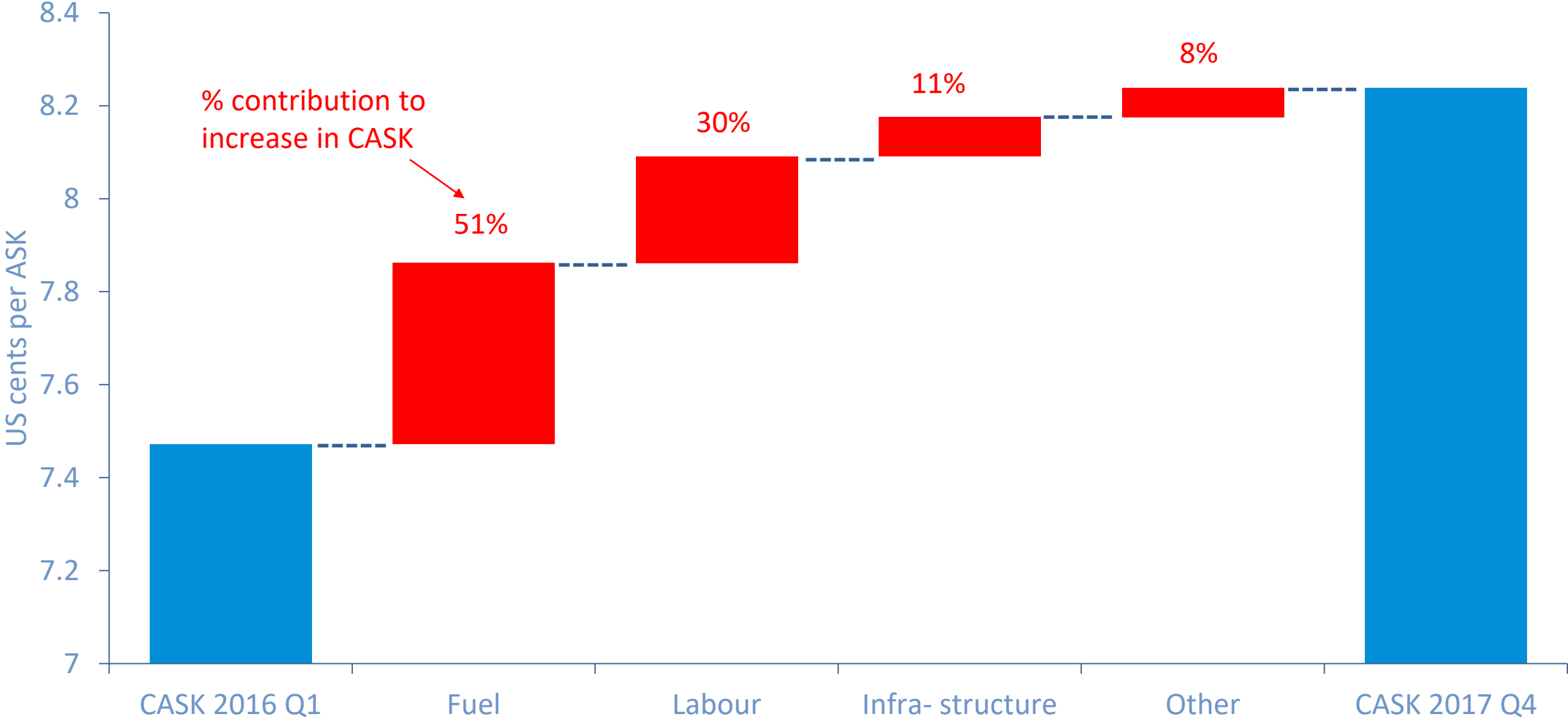
As spare capacity disappears

OECD unemployment and capacity shortage in the economy



Fuel, labour and infrastructure are the main source of cost pressure

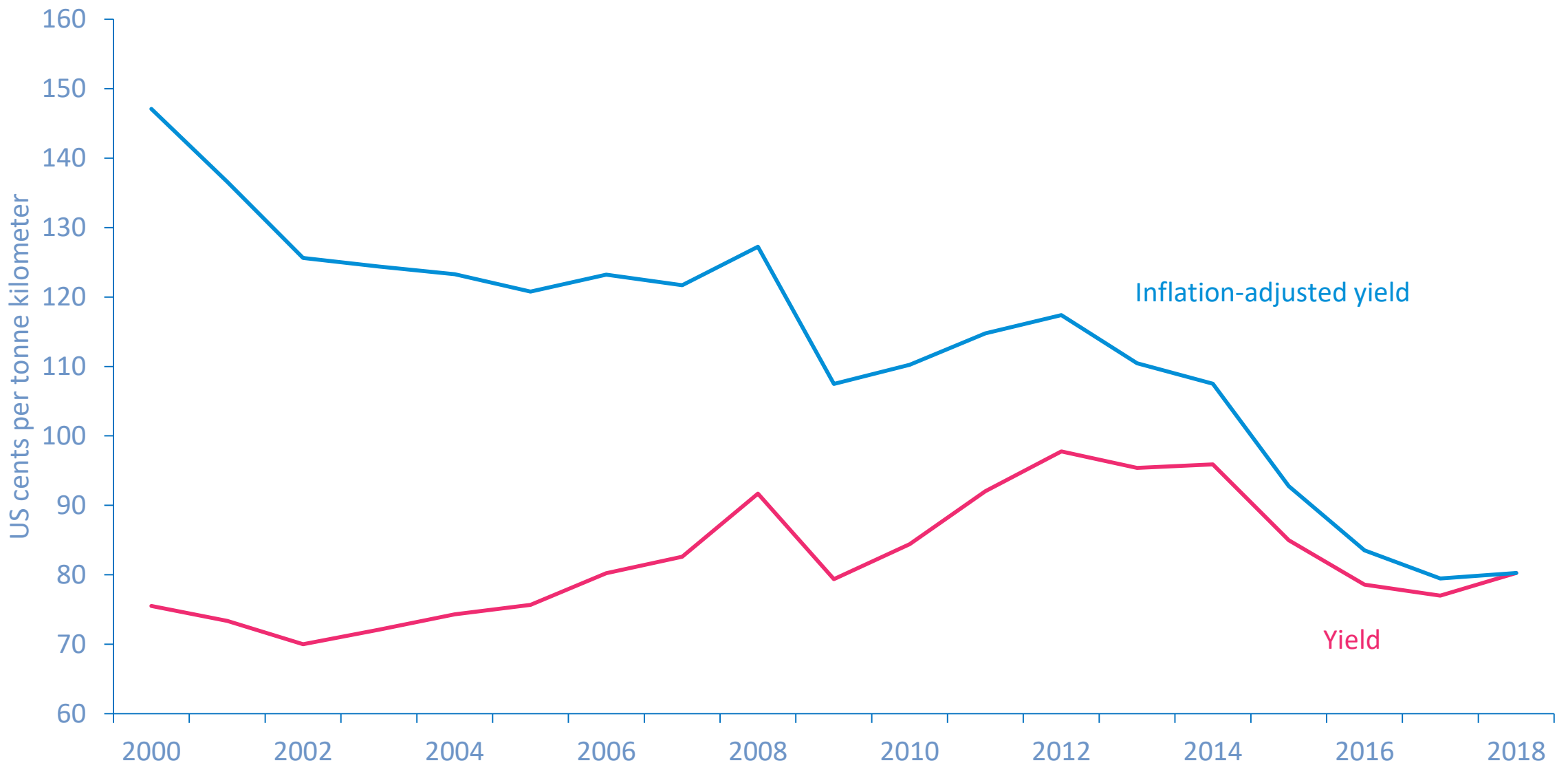
Unit cost changes between 2016 Q1 and 2017 Q4



Source: IATA Economics using data from The Airline Analyst

But cost of air transport expected to stabilize in inflation-adjusted terms

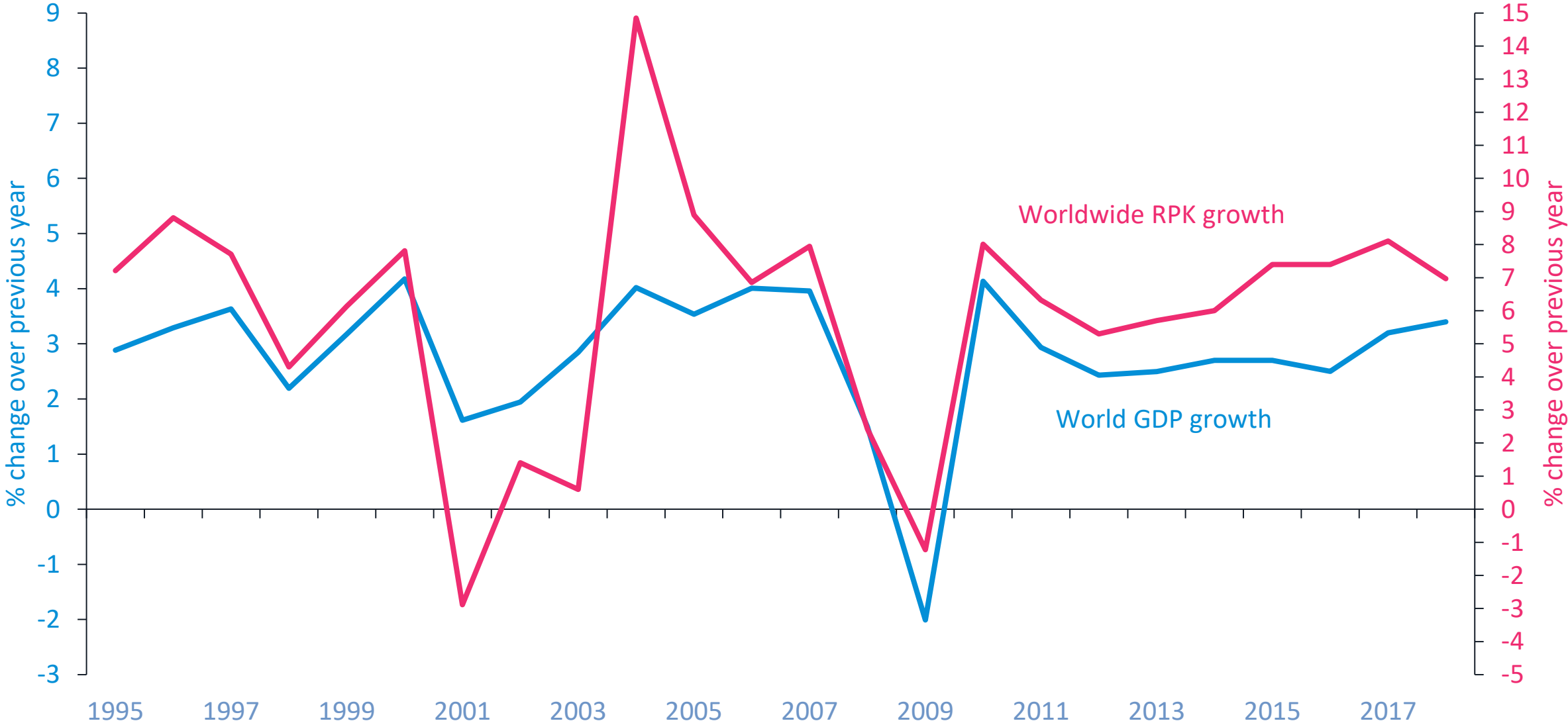
Yields including ancillaries and cargo revenues, nominal and inflation-adjusted



Source: IATA Economics using data from ICAO, PaxIS, CargoIS and our own forecasts

Strong economic growth supports strong travel growth in 2018

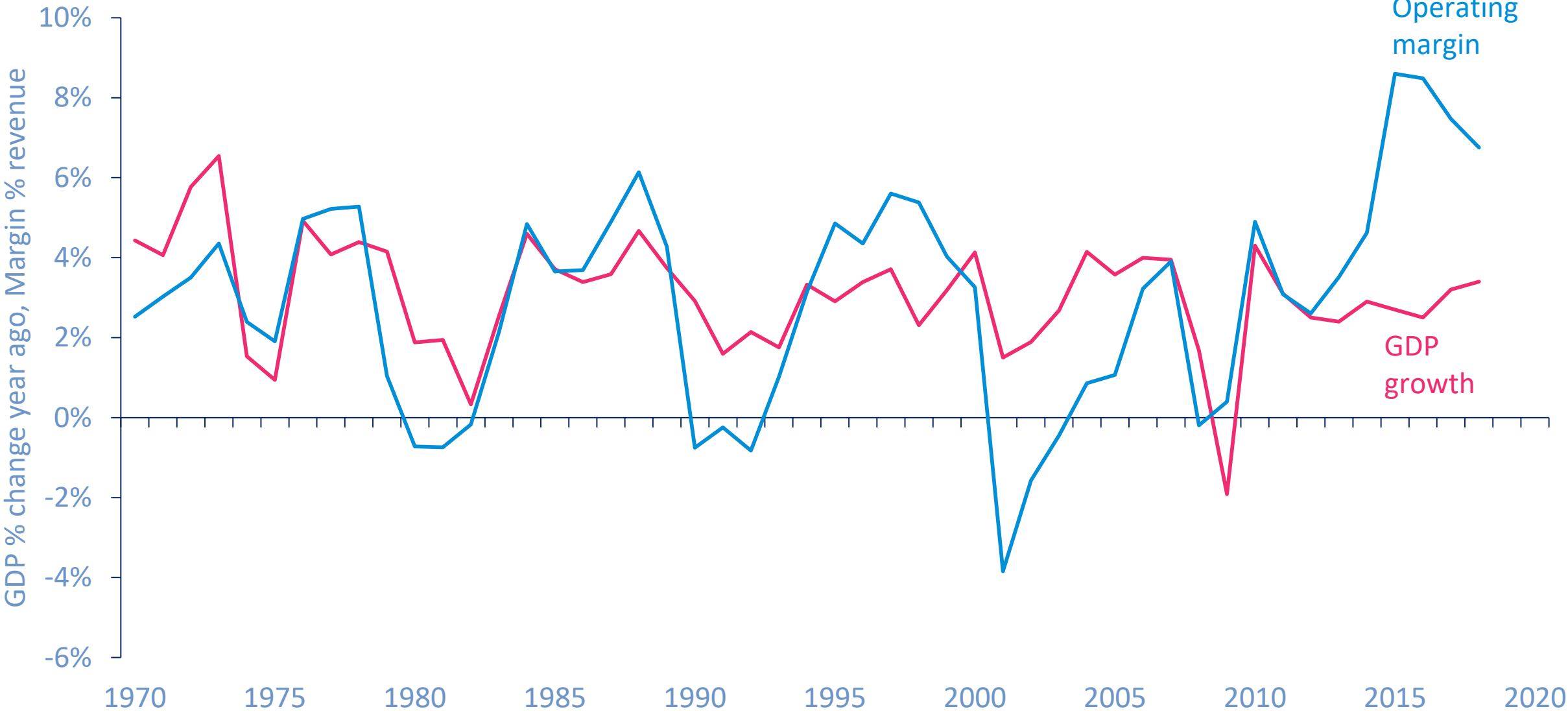
Worldwide RPK growth and GDP growth



Source: IATA Economics using data from ICAO, IATA Statistics, IMF and our own forecasts

Airlines financial performance due to more than cycle

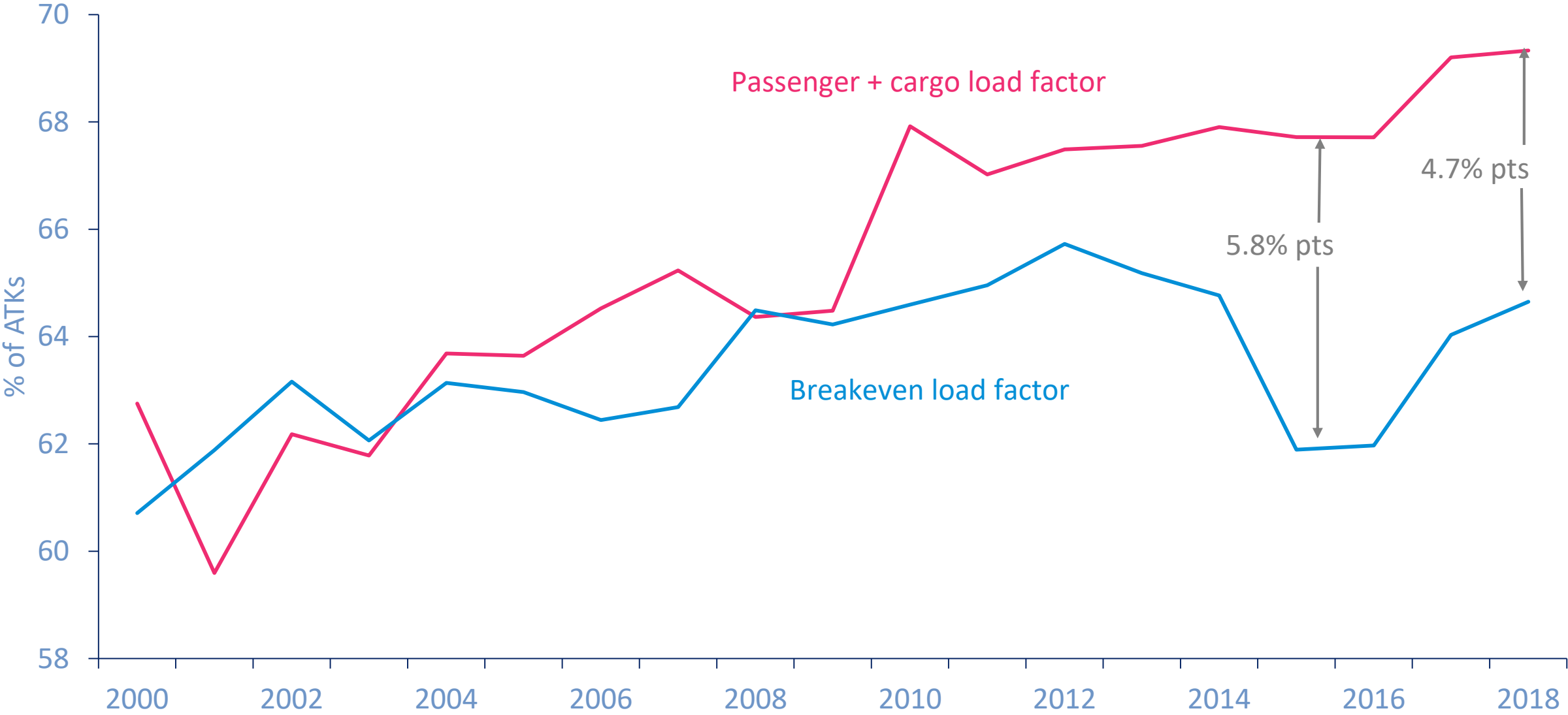
Global GDP growth and average airline operating margin



Source: IATA Economics using data from ICAO, IATA Statistics, IMF and our own forecasts

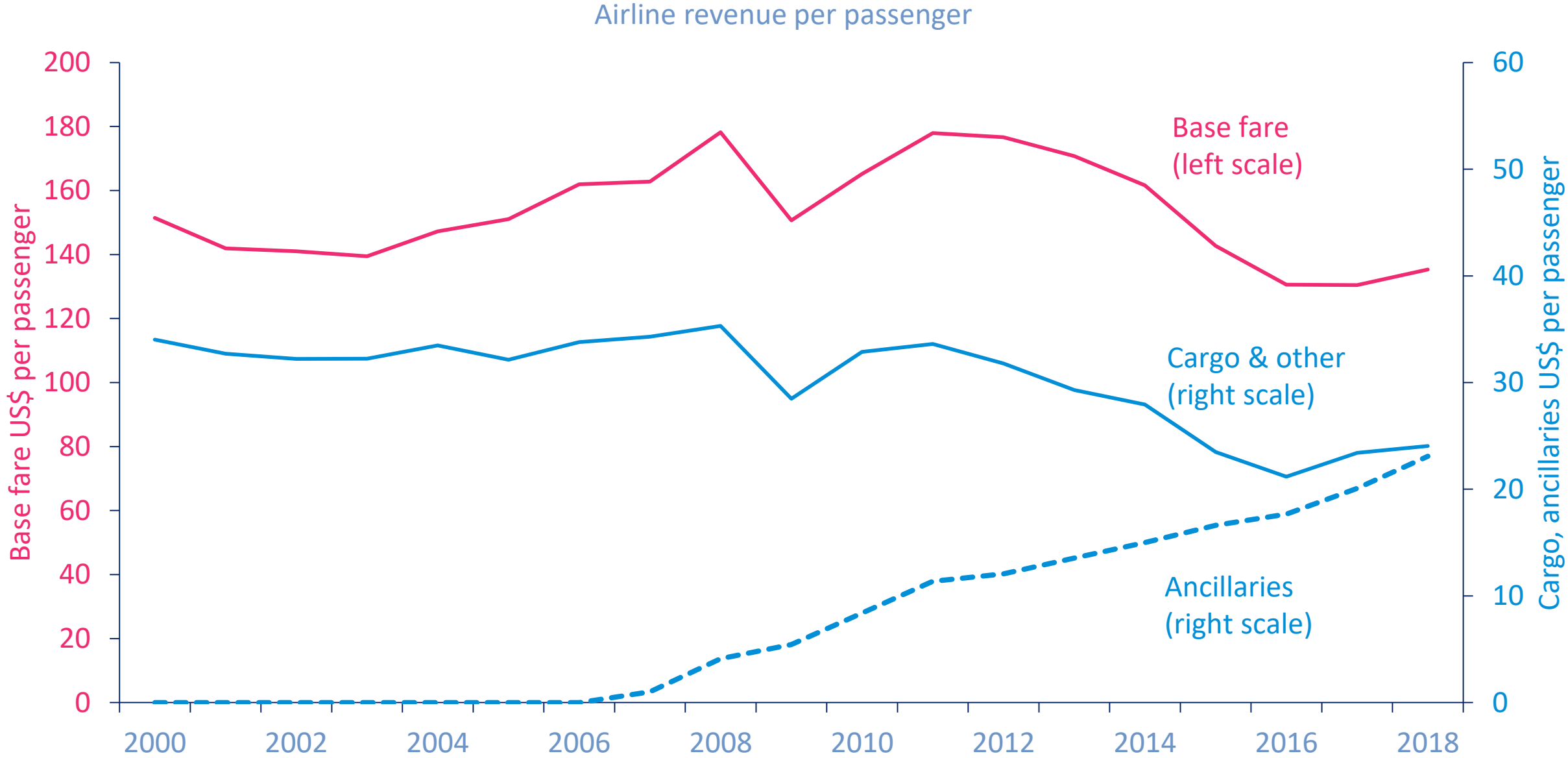
Asset utilization has improved

Load factor (passenger + cargo) versus breakeven



Source: IATA Economics using data from ICAO, IATA Statistics and our own forecasts

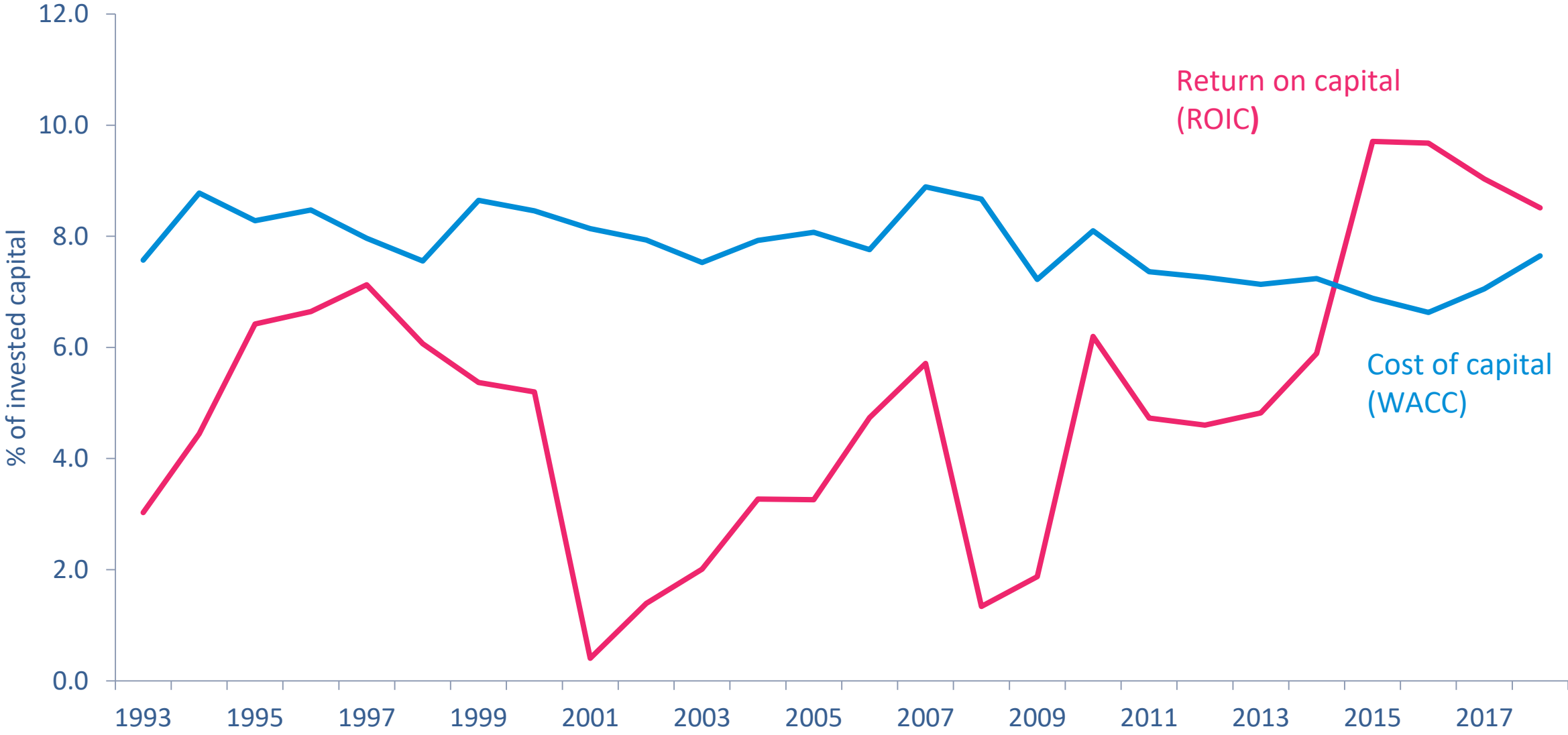
Ancillaries are partly offsetting commoditized base fares



Source: IATA Economics using data from ICAO, IATA Statistics, IdeaWorks and our own forecasts

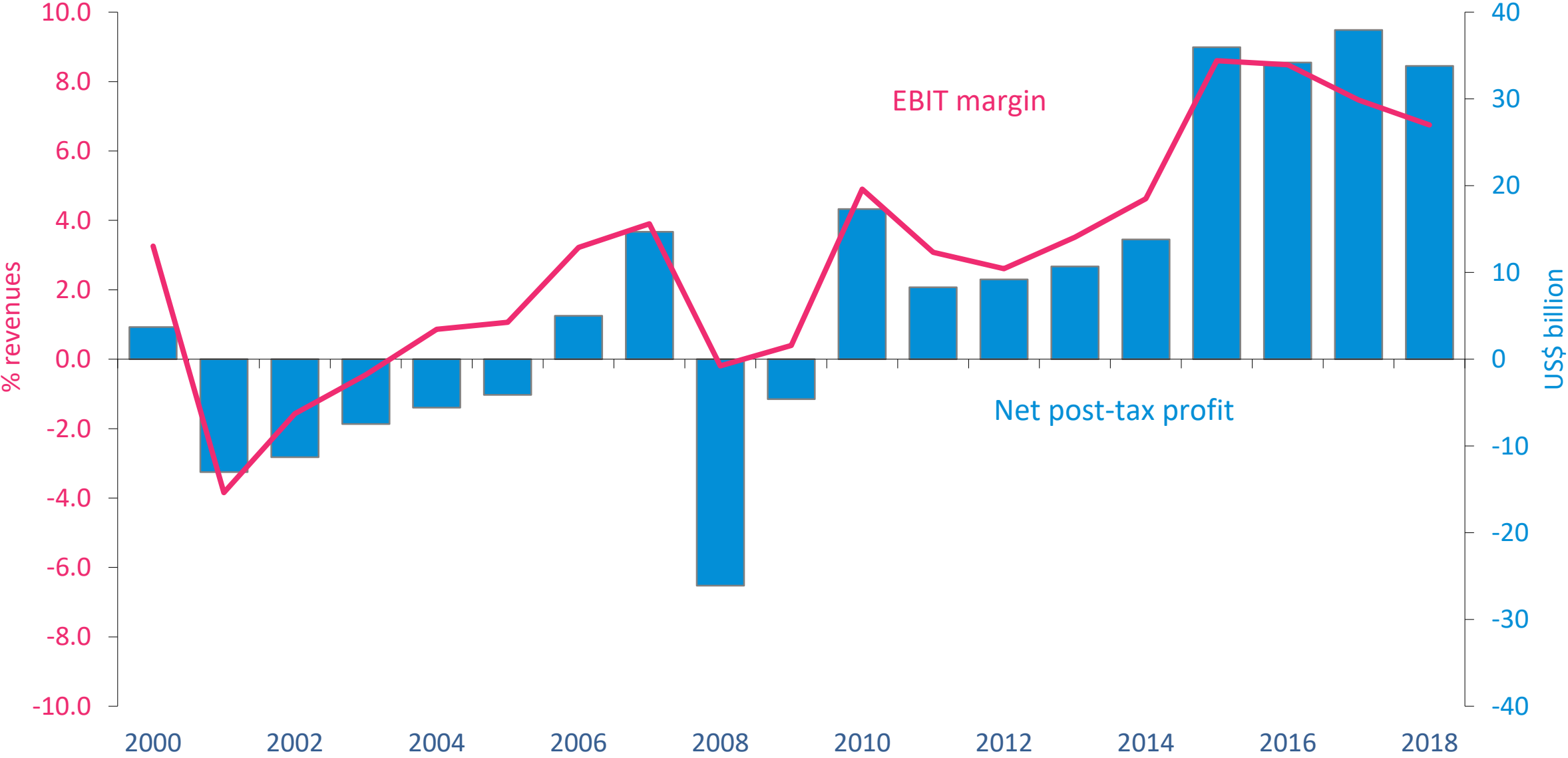
Airlines' return on capital still creating value for 4th successive year

Return on capital invested in airlines and their cost of capital



Source: IATA Economics using data from McKinsey, The Airline Analyst and our own forecasts

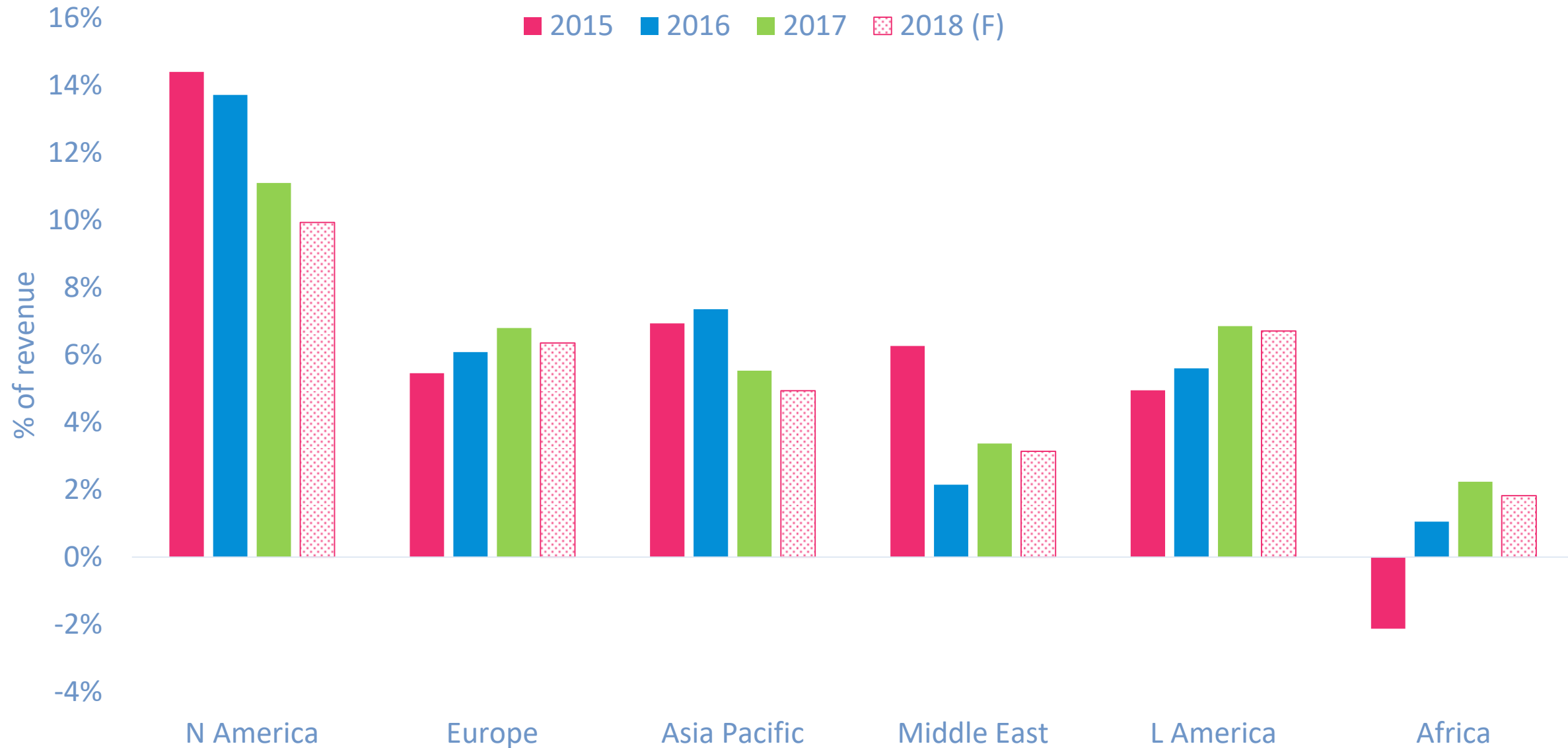
Airline profitability under pressure in 2018 but still high



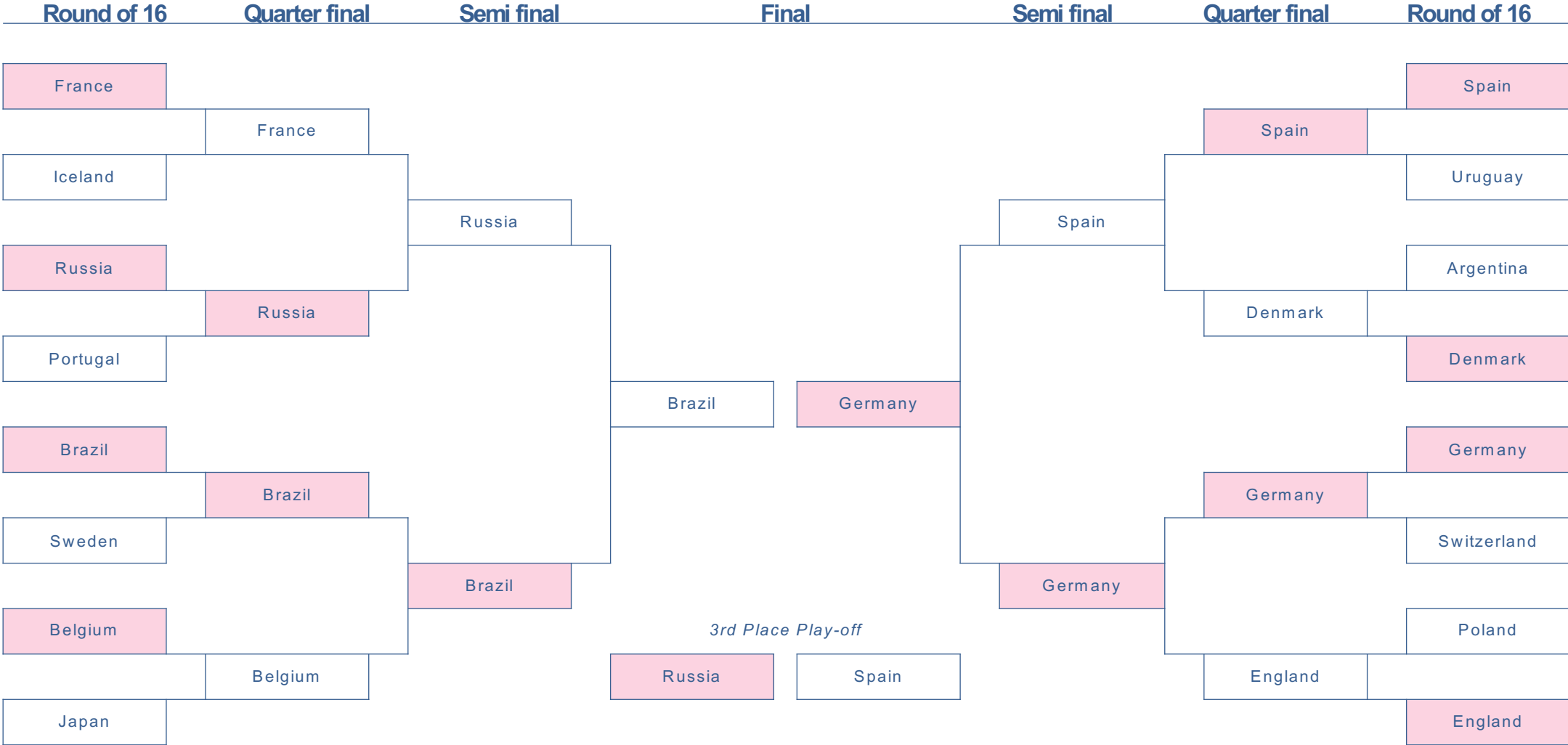
Source: IATA Economics using data from ICAO, IATA Statistics, The Airline Analyst and our own forecasts

But profitability remains very uneven across regions

Operating margin by airline region of registration



Germany to win world cup – says our model based on air connectivity



Source: IATA Economics

LOOKING FOR INSIGHTS INTO AIR TRANSPORT MARKETS AND ISSUES?

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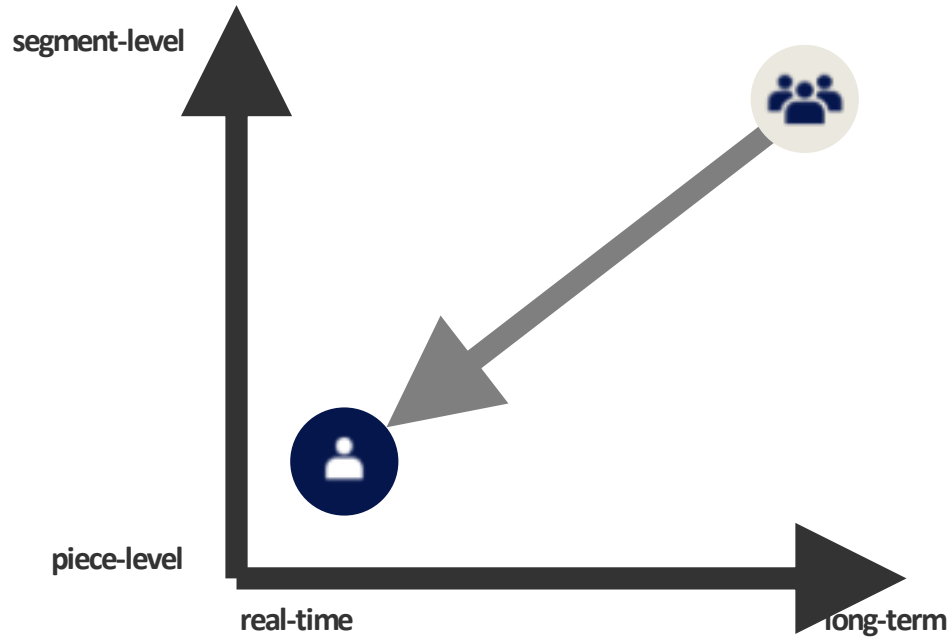
A high-angle, close-up photograph of a jet engine and the fuselage of a large commercial aircraft. The engine is the central focus, showing its white and blue components. The fuselage is visible to the right, showing the windows and the structure of the plane. The background is a clear, light blue sky.





Data Driven Innovation in a Digital Economy - Are We Moving in the Right Direction, and Fast Enough?

19.06.2018, IATA Aviation Data Symposium
Christian Langer, VP Digital Strategy, Lufthansa Group

The end of planning as we know it...

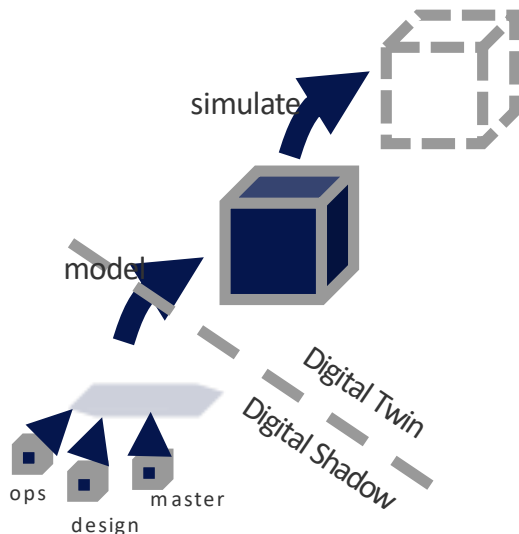
The radical impact of digitalization



-  PROCESS DISRUPTION
-  CUSTOMER INTERACTION
-  DEMAND
-  BUSINESS MODELS

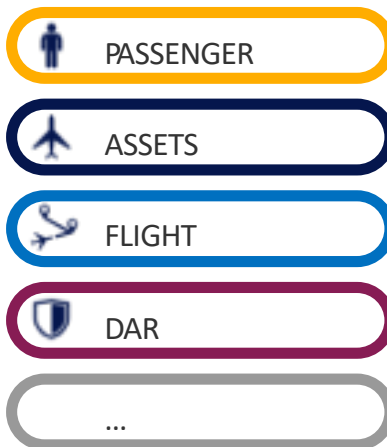
How we set ourselves up to exploit our digital twins?

Build



Manage

→ LEAN ADMINISTRATION
Definition of **Digital Twins**
and **Twin-Owners**








Enable

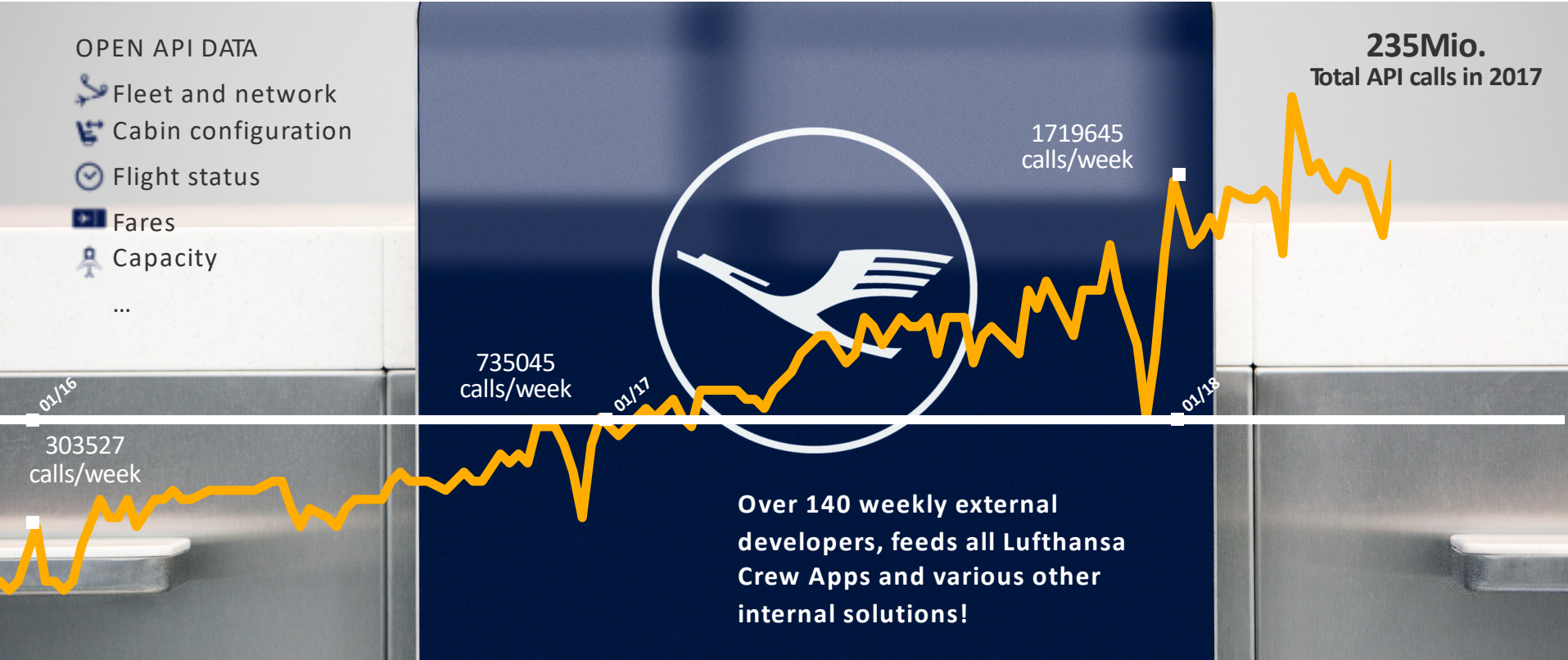
→ INTERNAL EXPLOITATION
straightforward access to digital twins for all use cases within **Lufthansa Group** via the **Twin-Owners**

→ EXTERNAL EXPLOITATION
the Lufthansa Group **Data Provision Council** authorizes the **release of data** for to **external business partners**

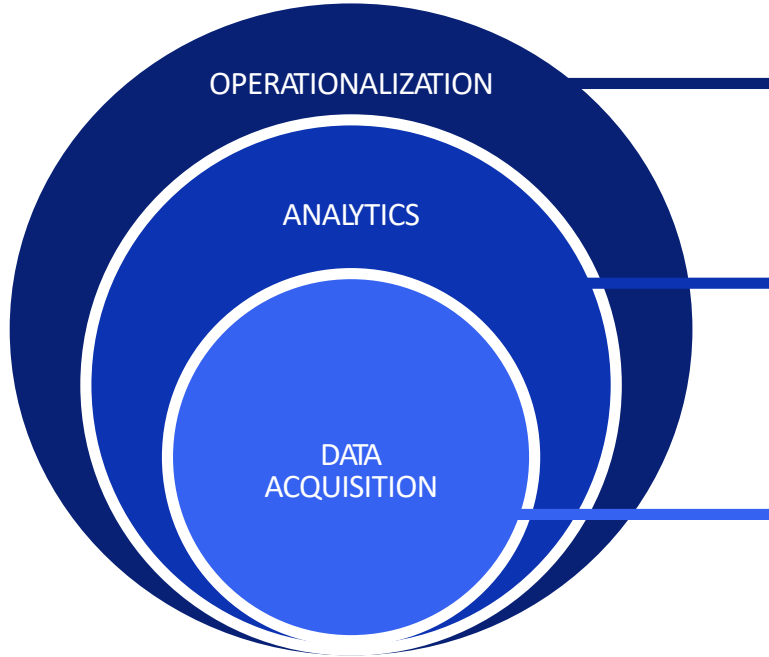
How we enable developers?

OPEN API DATA

-  Fleet and network
-  Cabin configuration
-  Flight status
-  Fares
-  Capacity
- ...



Enable your organization to leverage the full potential of data analytics



“Boardroom App”

- Access to all top KPIs, quickly & reliably
- One portal, trusted source and one-stop-shop for any data related question



Lufthansa Group Self-Service BI Platform

- Create „working environment“
- SCRUM teams
- Review instead of define

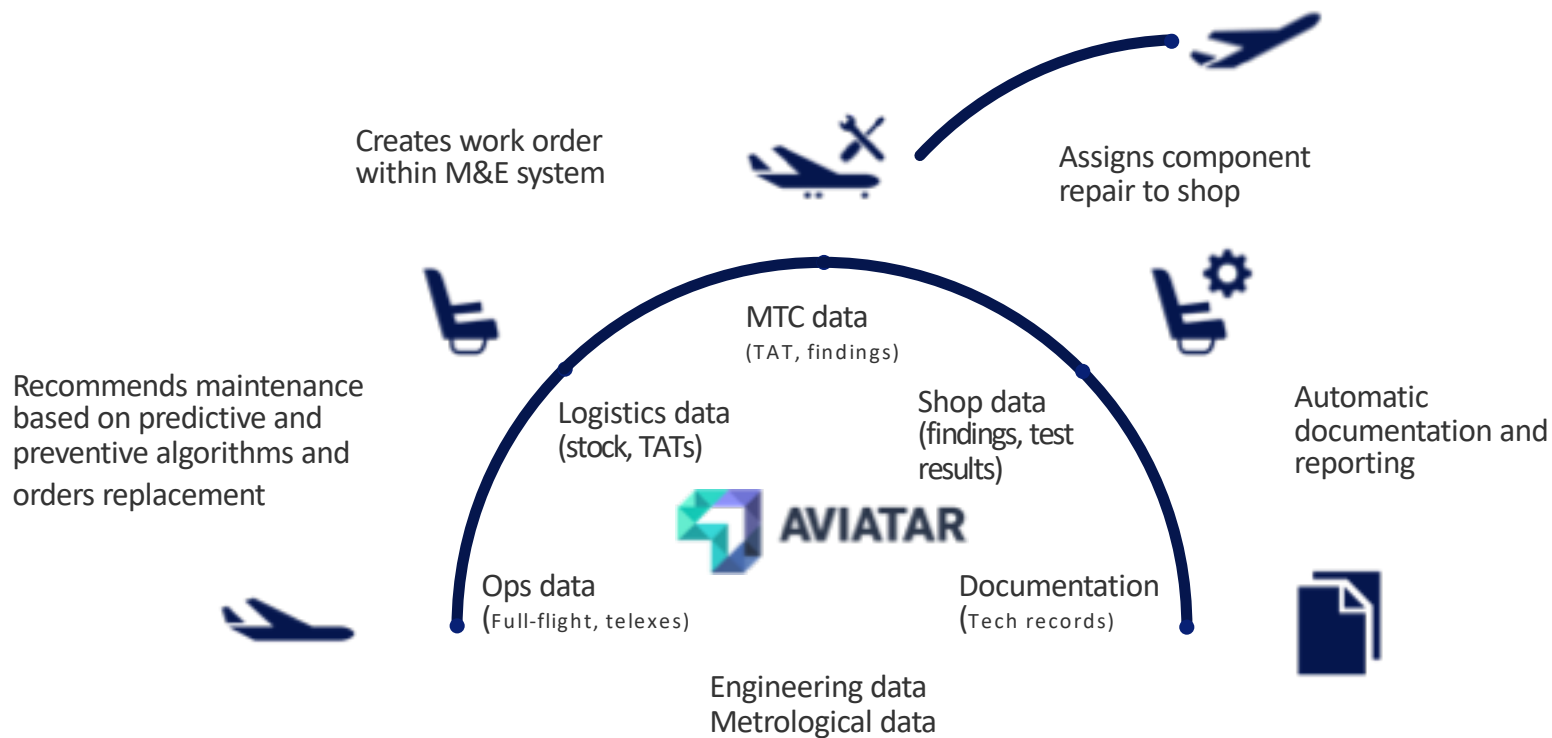


Lufthansa Group Data Analytics Infrastructure

- Centralized data storage
- Data quality assurance
- Methodological linkage



How we automate processes?



What is the prerequisite of an open ecosystem?



CONTROL



CHOICE



COMPETITION



Thank you very much
for your attention





STAR ALLIANCE

IATA Aviation Data Symposium

Digital Customer Experience

Jeffrey Goh
19JUN18





STAR ALLIANCE

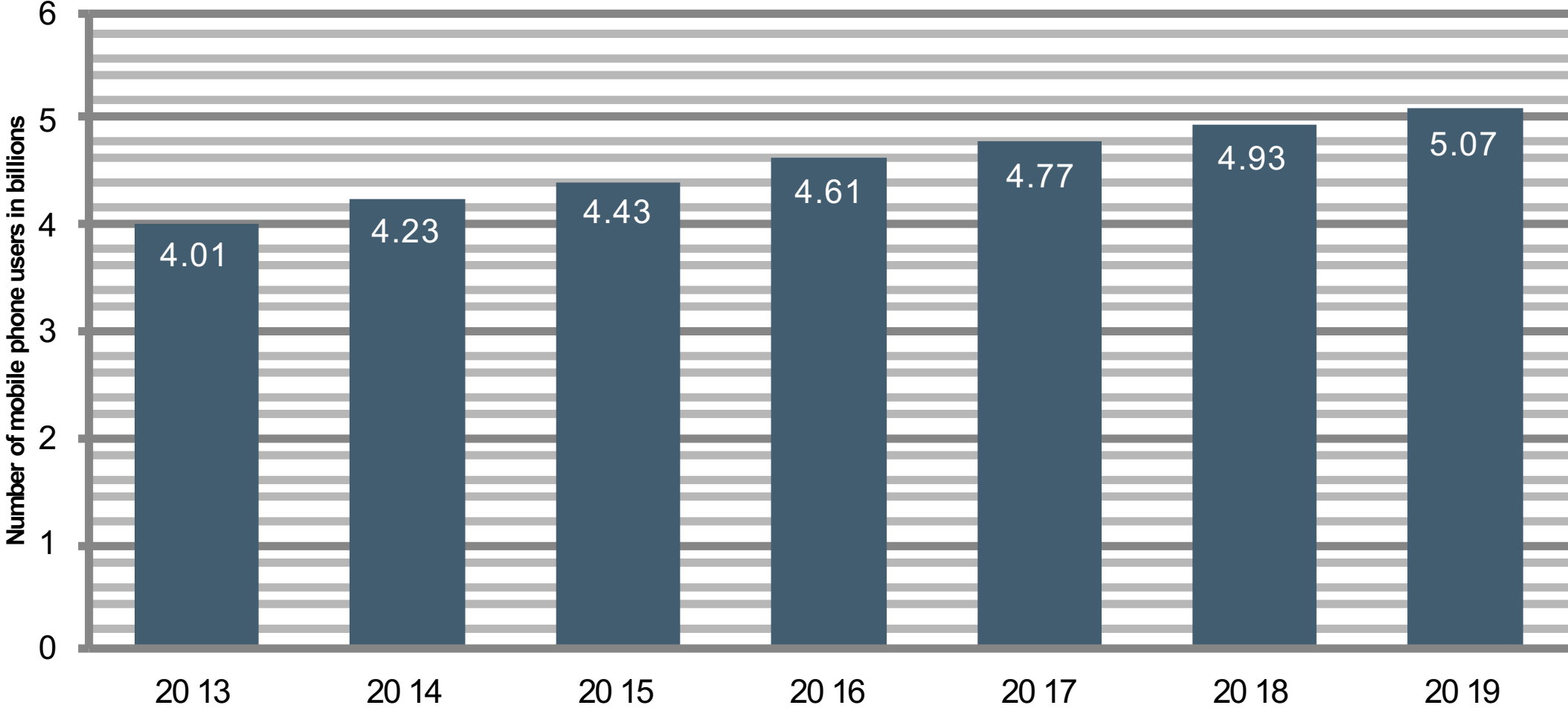
Customer Experience: The New Imperative





Number of mobile phone users worldwide from 2013 to 2019

In billions

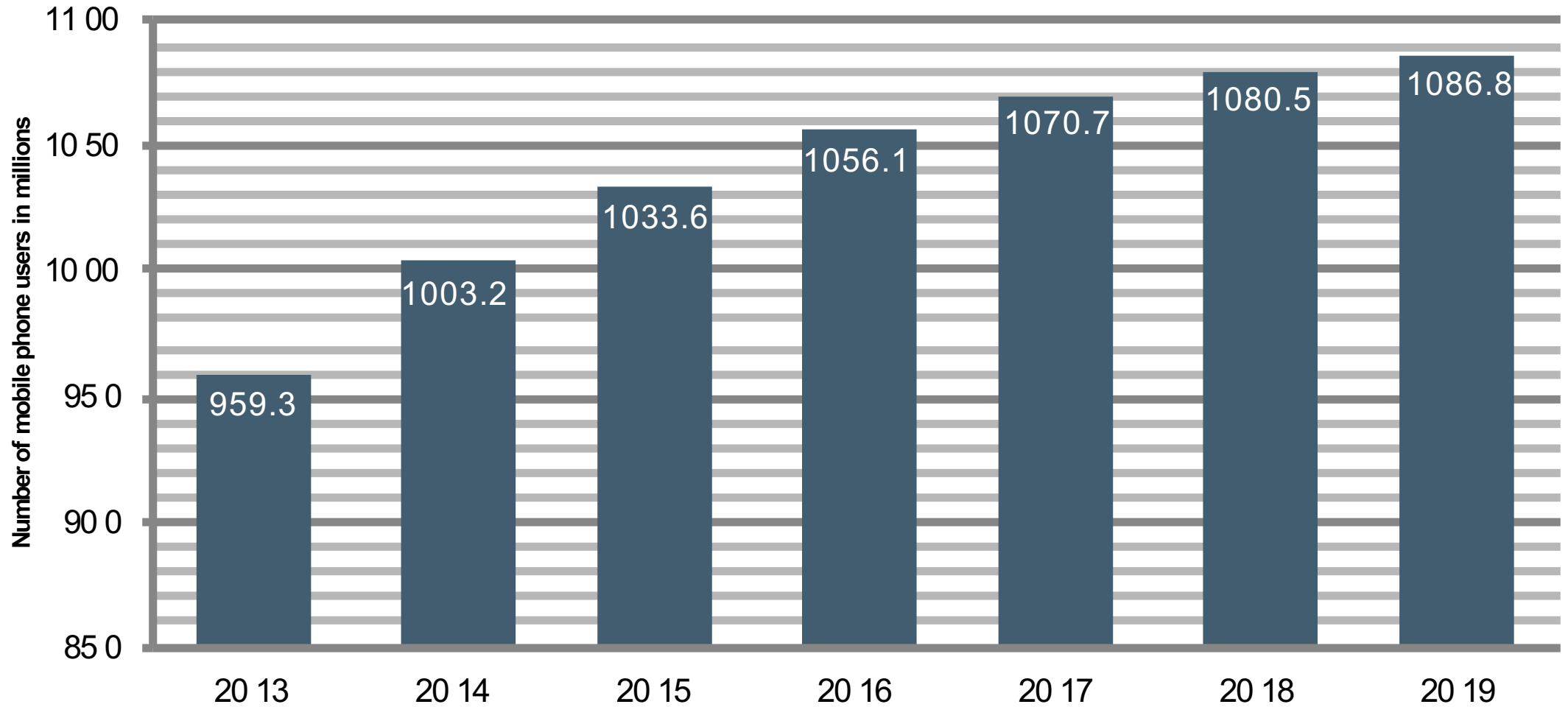




STAR ALLIANCE

Number of mobile phone users in China from 2013 to 2019

In millions





STAR ALLIANCE

Changing Customer Expectations

Customer needs and preferences are evolving

- Mobile first and connectivity
- Sophistication of knowledge in the masses
- Personalization and “mass customization” expected
- Pricing and product transparency





STAR ALLIANCE

GO-JEK

A meteoric rise





STAR ALLIANCE

The Digital Services Platform



Customer Facing Frontend Channels

Airline X



Airline Y



Airline Z



STAR ALLIANCE

Digital Services Platform

Single platform to access digital information of carriers and ecosystem



Evolving Ecosystem

Airlines



STAR ALLIANCE™

Product Vendors

External Services





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Dr John Carney

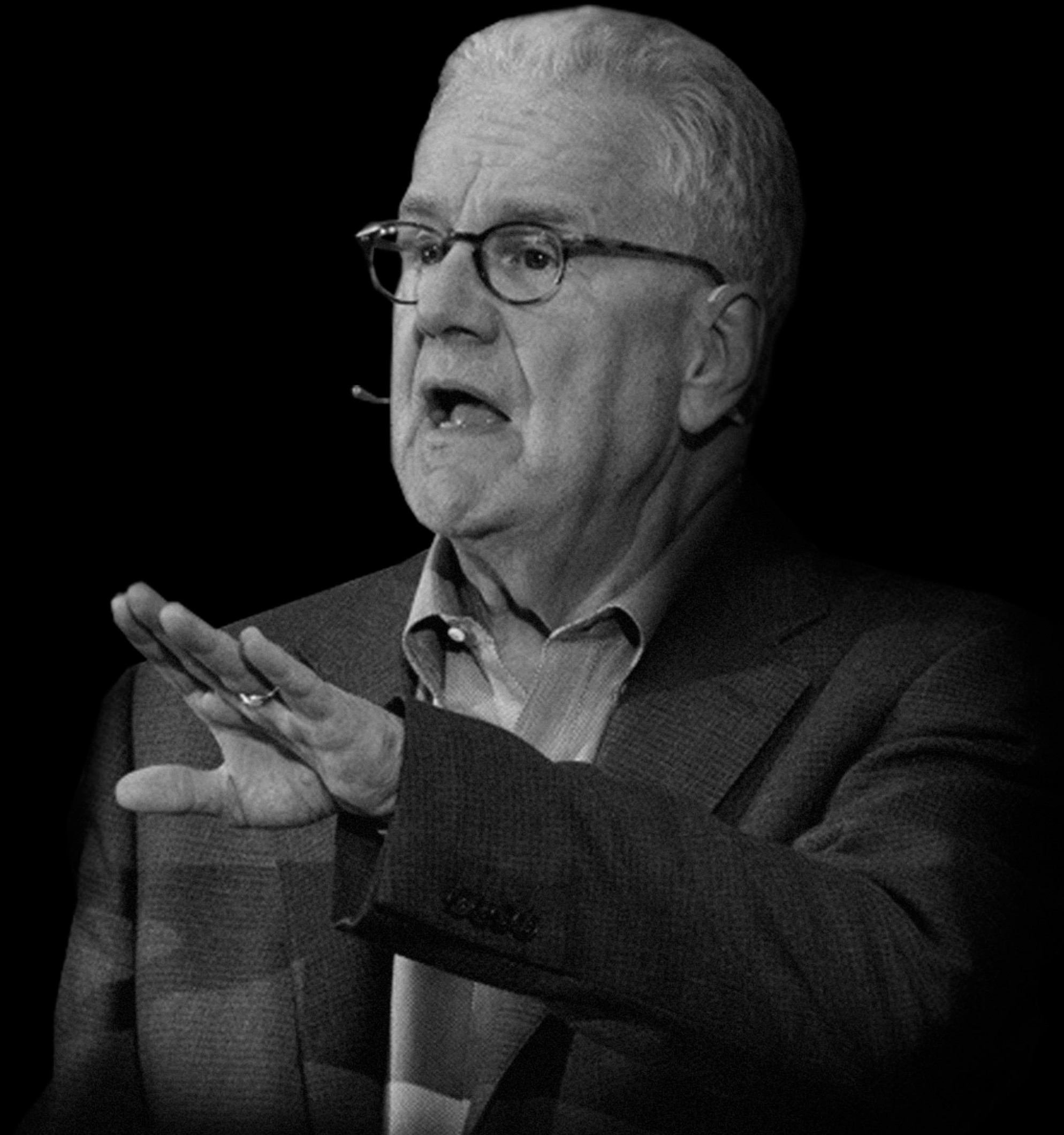
Chief Data Scientist, OpenJaw

Big Data and the Rise of Customer Centricity in Airlines

IATA Data Symposium, Berlin, June 2018

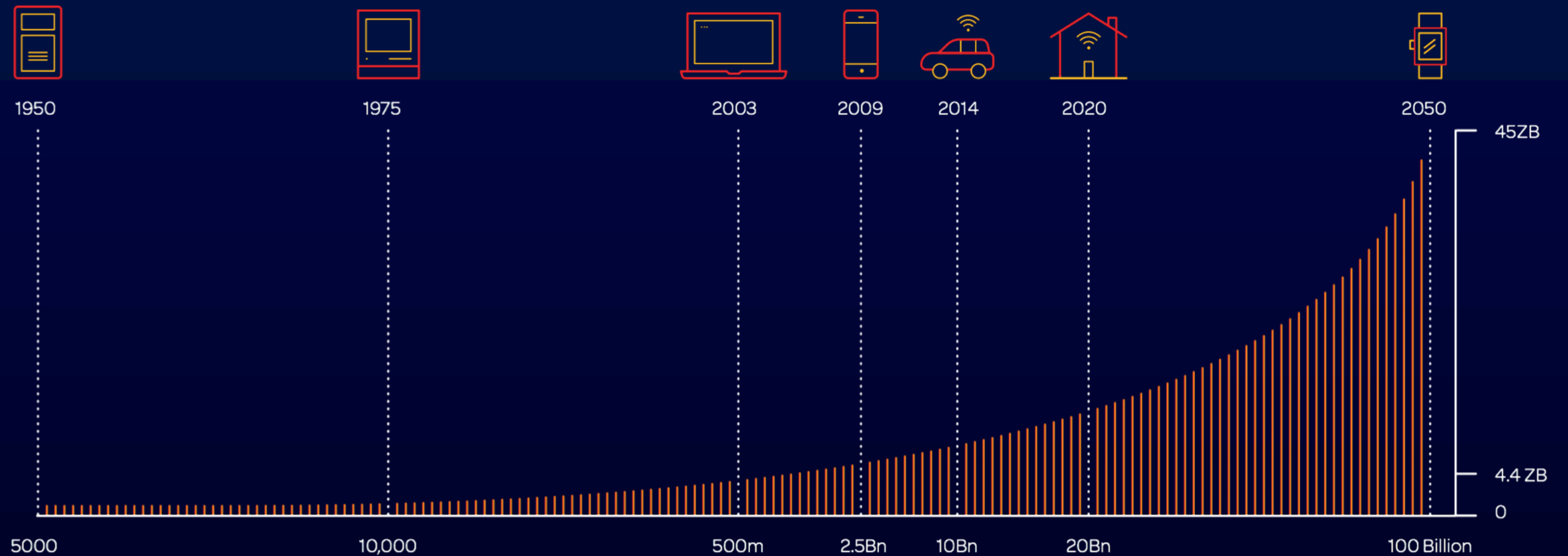
“Without Big Data you are
blind and deaf in the middle
of a freeway...”

Geoffrey Moore, Author



The Future

By 2050, we will have 45 Zettabytes of data globally stored across 100 billion connected devices



How big is 'big'?

45 Zettabytes?



RENTAL

Why now?



Connections

+



The Cloud

+



Machine Learning

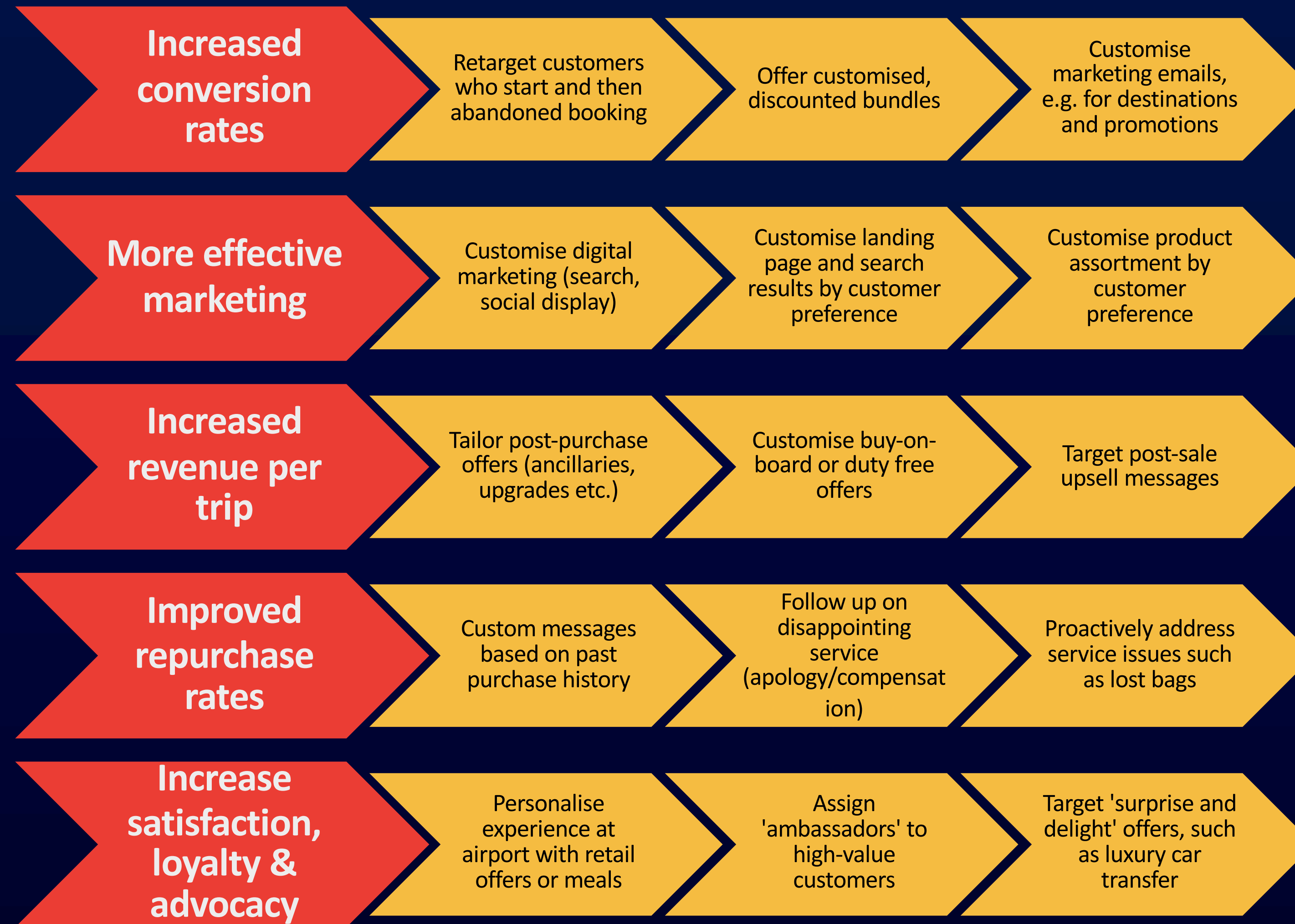
The most valuable data you have right now in
your airline is customer data

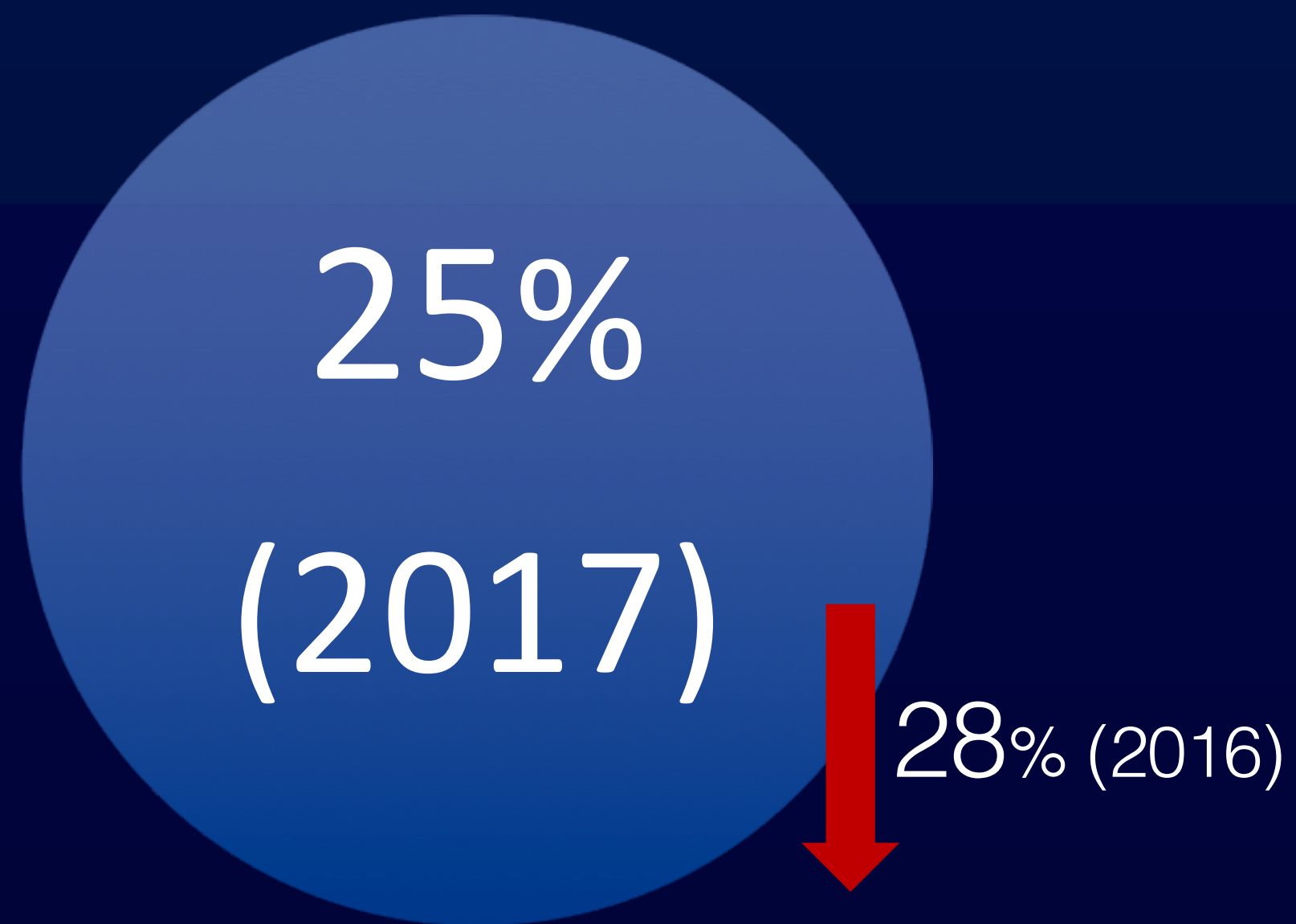
The most valuable brands in the World today are
also the most customer centric



Customer centricity and personalization will push a revenue shift of \$800 billion to the 15% of companies globally that 'get it' *

Customer centricity delivers...





But ...the travel industry is starting to fall behind the expectations of consumers regarding personalization

Feel very satisfied with the level of personalization they experience*

Why?

Expectations are higher ...



Building a customer centric capability at your airline has
never been so important...

But delivering customer centricity is not easy ... you need

Big Data



Identity Resolution



Data Science



Data Distribution



Combined, you get...

Big Data



+

Identity Resolution



+

Data Science



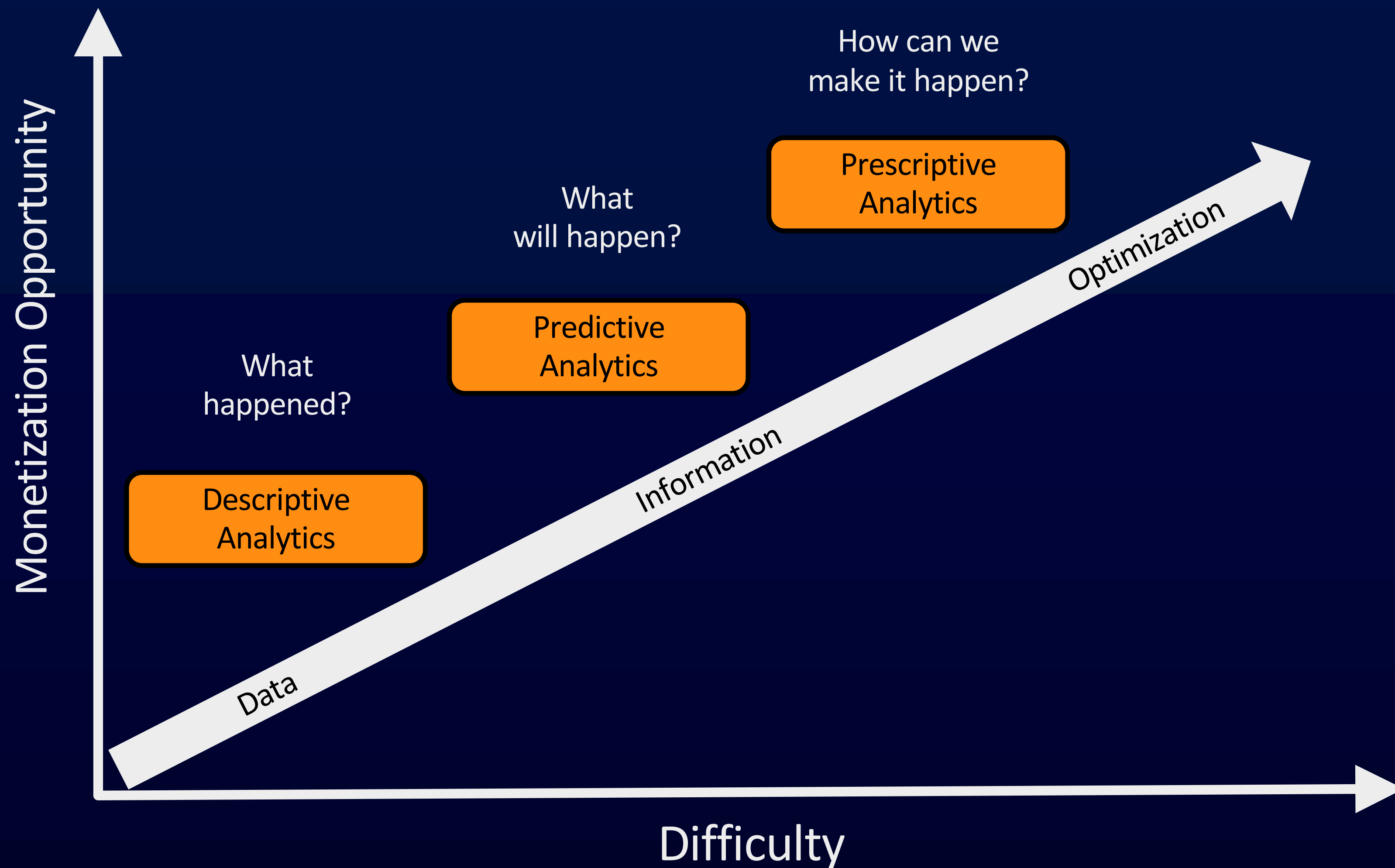
+

Data Distribution

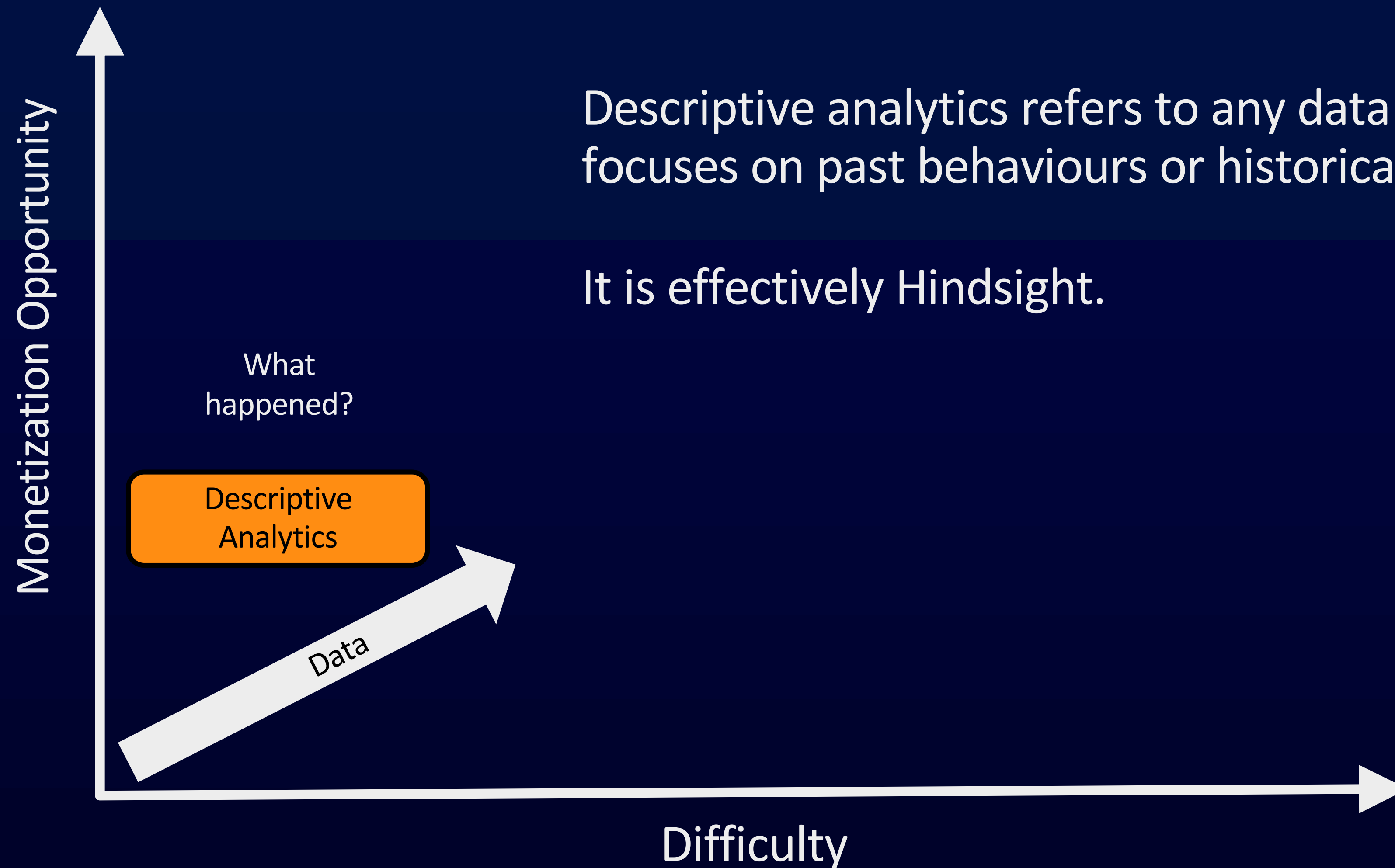


= **ANALYTICS** you can monetize

The key to unlocking customer centricity



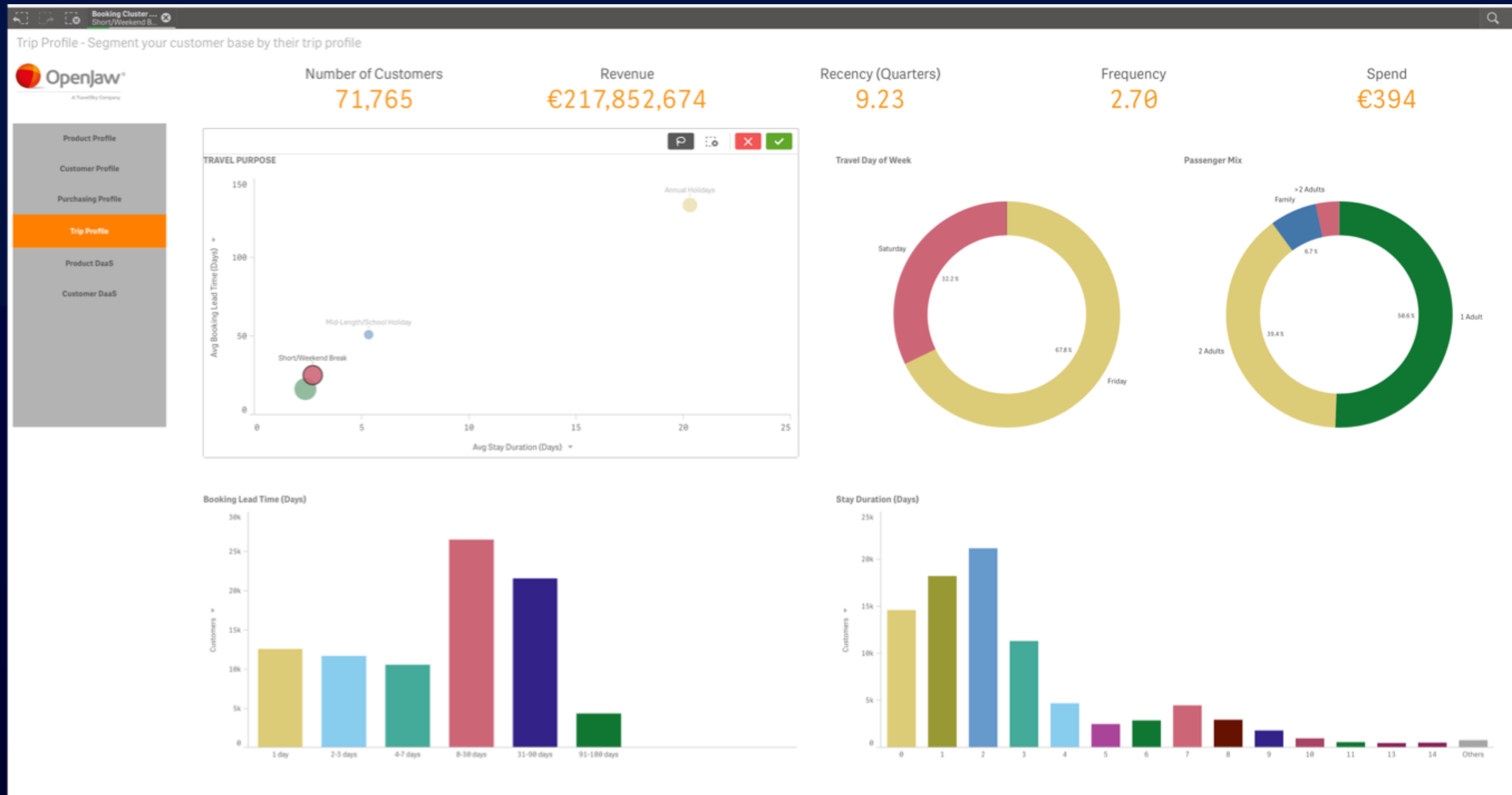
Descriptive analytics



Descriptive analytics refers to any data analysis that focuses on past behaviours or historical patterns.

It is effectively Hindsight.

Descriptive analytics: Use case



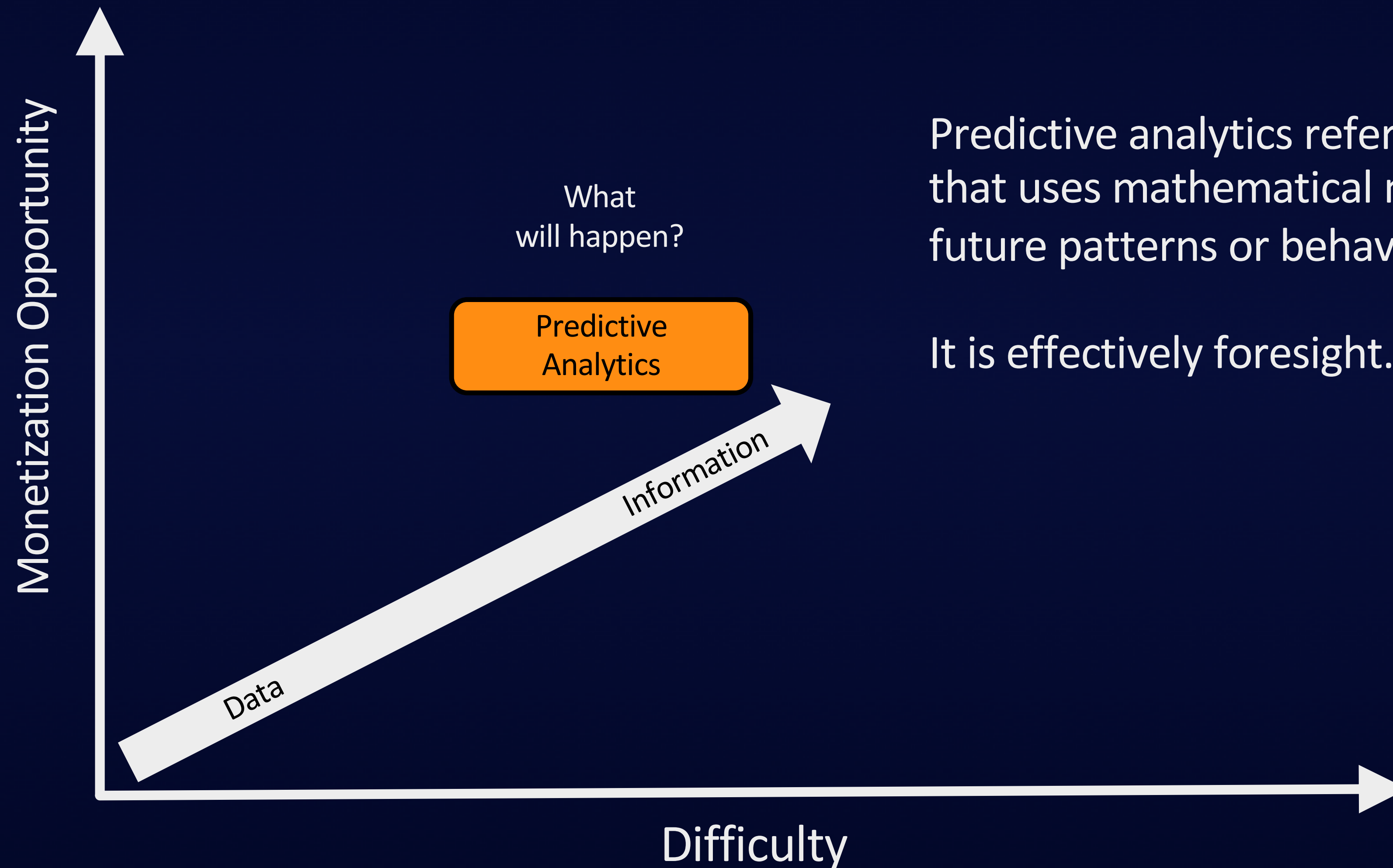
Use Case

Segment customers by Trip Profile*:

- Business trip
- Weekend break
- School holiday
- Annual holiday

* In this example, from OpenJaw t-Data, machine learning is used: a variant of K-Means Clustering

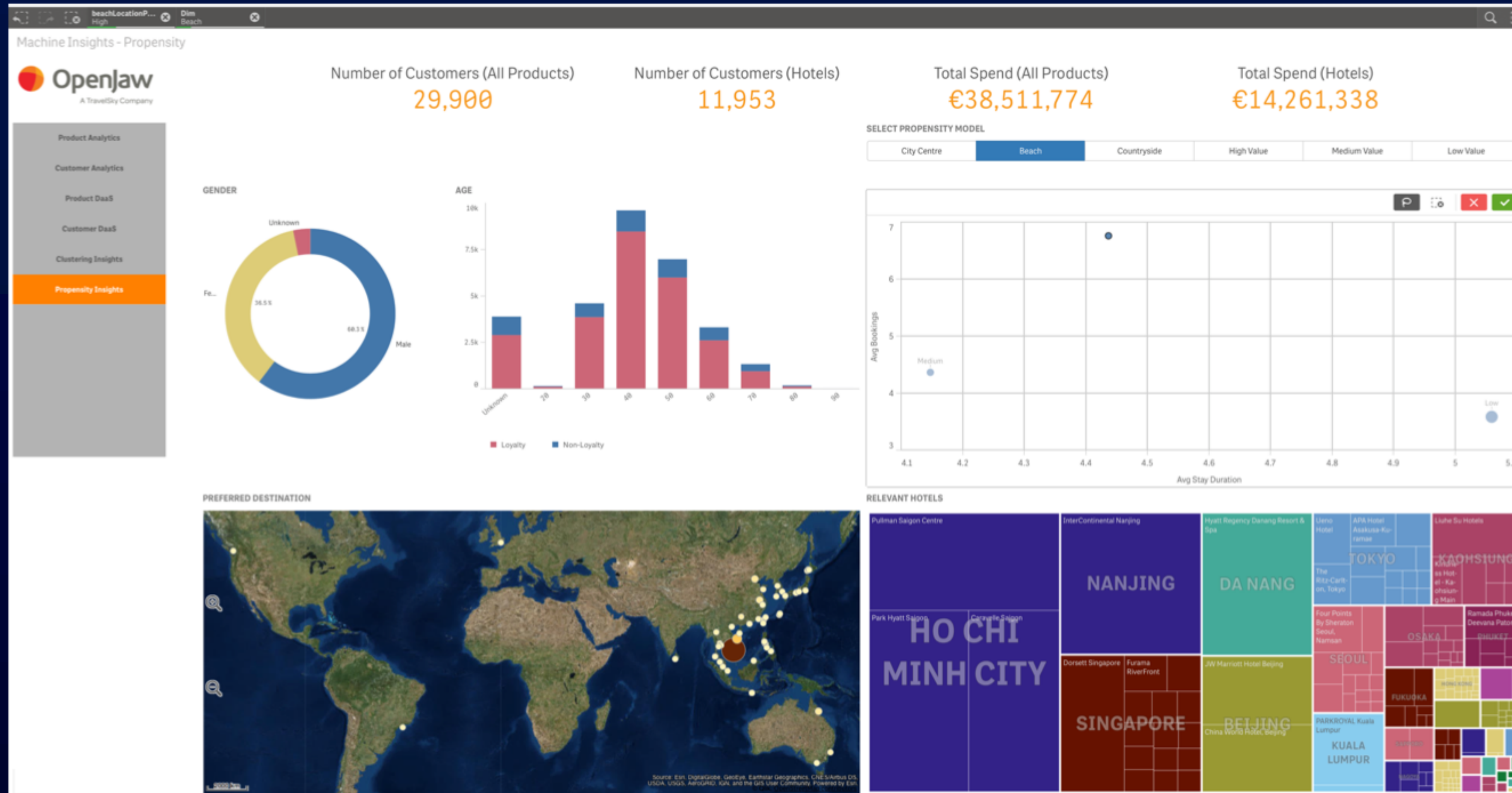
Predictive analytics



Predictive analytics refers to any data analysis that uses mathematical models to predict future patterns or behaviours.

It is effectively foresight.

Predictive analytics: Use case



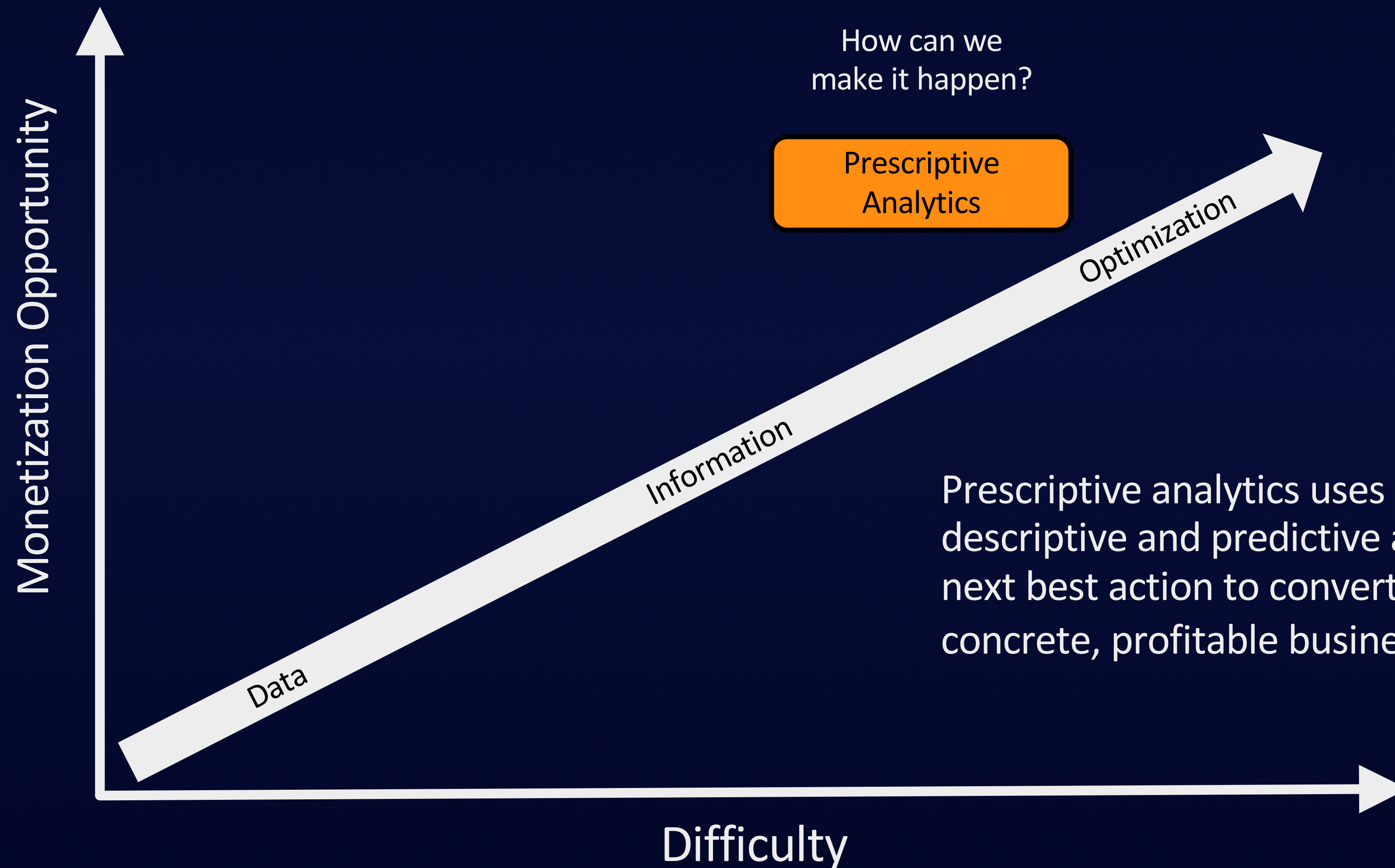
Use Case

Segment customers by Propensity to purchase*:

- City Centre Destination
- Beach Destination
- Countryside Destination
- Hotel Value

* In this example, from OpenJaw t-Data, machine learning is used: a variant of Logistic Regression

Prescriptive analytics



Prescriptive analytics uses the insights provided by descriptive and predictive analytics to identify the next best action to convert these insights into concrete, profitable business outcomes.



Customer Journey





Customer Journey



Inspiration & Dreaming

Research & Planning

Shopping

Booking

Servicing

In transit

At destination

Home

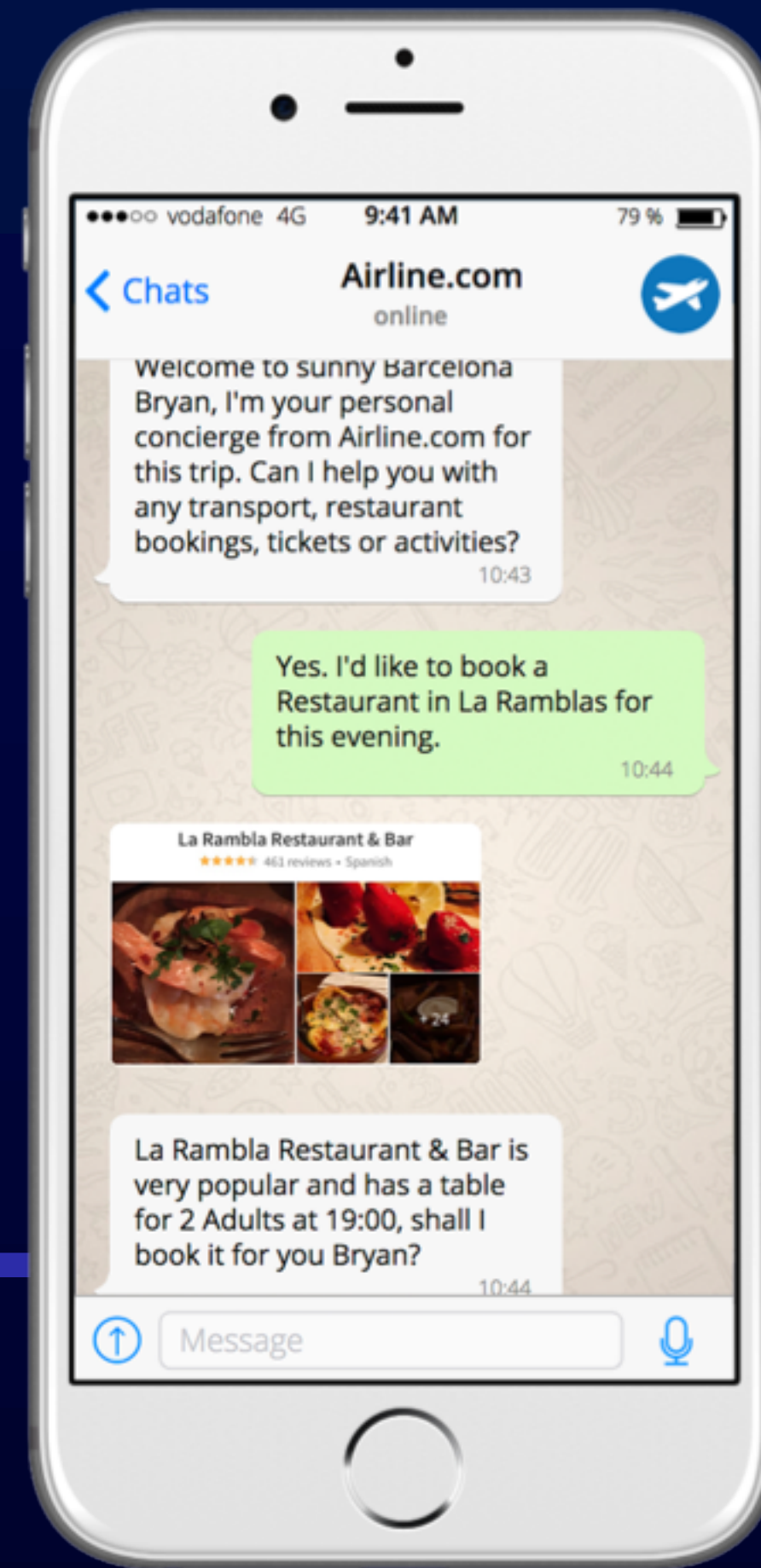
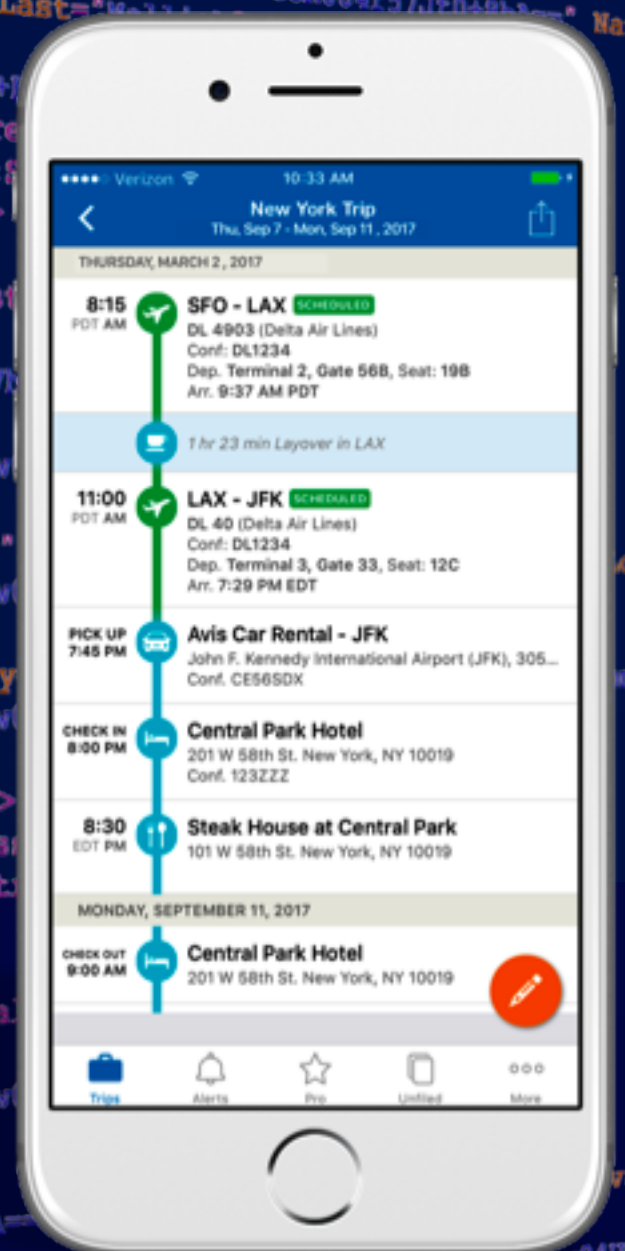
Facebook Dynamic Ad for Travel

Personalized Landing Page

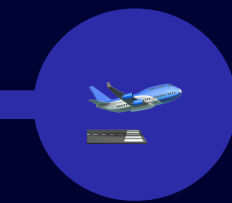
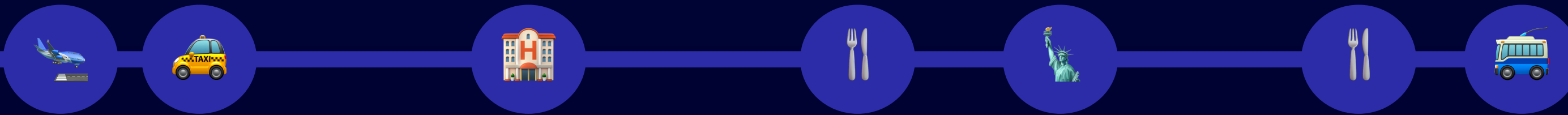
Personalized Offer & Upsell

Context Aware Chat Bot

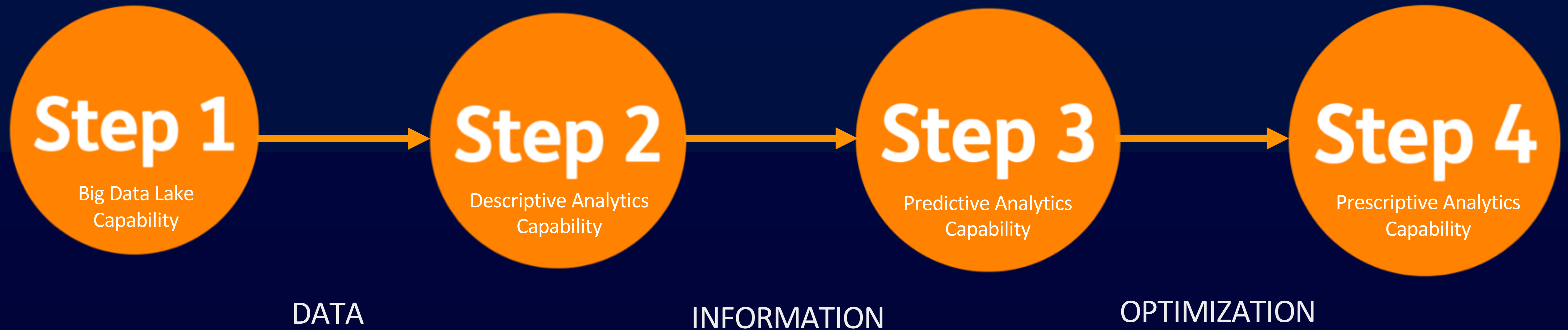
Next Best Action



Make your Chat Bot customer centric with Big Data analytics to deliver relevant, context-aware offers and conversations



The roadmap to deliver customer centricity at your airline



Collect and integrate all of your customer data.
Convert it to information with analytics.

Embed in your business processes to transform how you interact with customers.



t-Data
OpenJaw

Learn more about how we do Big Data at OpenJaw: www.openjawtech.com

Or contact me directly: john.carney@openjawtech.com

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15 Hours of Networking

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workshop