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ATHENS, GREECE 25-27 JUNE 2019







Welcome

Aleksander Popovich, SVP, Financial Distribution Services, IATA



















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Gold, Silver & Bronze Sponsors









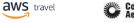




















Aviation Data Symposium 2019



AVIATION
DATA
SYMPOSIUM

Thriving in the age of Data & Digital Transformation

ATHENS, GREECE 25 – 27 JUNE 2019



Industry Agenda



IATA Board mandated and actioned:

Data Analytics Solutions

Data Standards Data Advocacy



Driving ADS' Agenda





Data & Al driven Offers, Orders, Hyper Personalization & Customer Experience



ATM, Connected Aircraft, Maintenance, Intelligent Health Monitoring



Blockchain, FinTech, Mining Payment Data, Fraud, PSD2, GDPR



Build & Leverage AI, & Data Science capabilities, Enterprise Analytics



Digitizing Air Cargo, E-Commerce, End-to-end visibility, One Record



Data Sharing, A-CDM, Intelligent Irregular Operations



Data Governance, API Ecosystem & Industry Data Model



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Opening Address

Dimitris Gerogiannis, CEO, Aegean Airlines



















Aegean in brief





Data Analytics, Advanced Analytics, Data science, ...

Athens June 25, 2019



Technology hype I

TECHNOLOGY in itself IS NOT INNOVATION

TECHNOLOGY in itself DOES NOT CREATE COMPETITIVE ADVANTAGE

The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency.

The second is that automation applied to an Inefficient operation will magnify the inefficiency.

- Bill Gates-



Technology hype II

Technological hype, buzzwords, futurology

.... high expectations, (s)low delivery



Technology: from buzzwords to reality

- Start with the problem/goal to solve/achieve and use technology as lever to:
 - **improve customer experience** at every step of the journey
 - assist & empower front-liners in their day-to-day decision making:
 pricing vs competition, customer service, etc
 - "identify" parameters affecting performance (ops, call center, etc)
- Many coherent "small" improvements vs. few quantum jumps
- Measure customer acceptance & commercial/operational/financial relevance
- Culture focused on the customer and process & technology skills



NEW BUZZWORD!!!!!! Data Analytics, Advanced Analytics,

"Tectonic paradigm shift"

NEW organisational structures, NEW processes,

NEW roles, NEW ..., NEW...,

Data Scientists to do X, Data Engineers to do Y, Enlighted Manager to do Z, Business owners to manage ABCD interfaces, etc..



DATA ANALYTICS!!!: let's not rediscover the wheel

....the major forums for research started in 1995 when the First International Conference on Data Mining and Knowledge Discovery (KDD-95) was started in Montreal under AAAI sponsorship...

The manual extraction of patterns from data has occurred for centuries. Early methods include Bayes' theorem (1700s) and regression analysis (1800s).... As data sets have grown in size and complexity... automated data processing, aided by other discoveries in computer science, such as neural networks, cluster analysis, genetic algorithms (1950s), decision trees and decision rules (1960s), and support vector machines (1990s). Data mining is the process of applying these methods with the intention of uncovering hidden patterns[15] in large data sets. It bridges the gap from applied statistics and artificial intelligence to database management by exploiting the way data is stored and indexed in databases to execute the actual learning and discovery algorithms more efficiently.



DATA ANALYTICS!!! : Aegean's approach

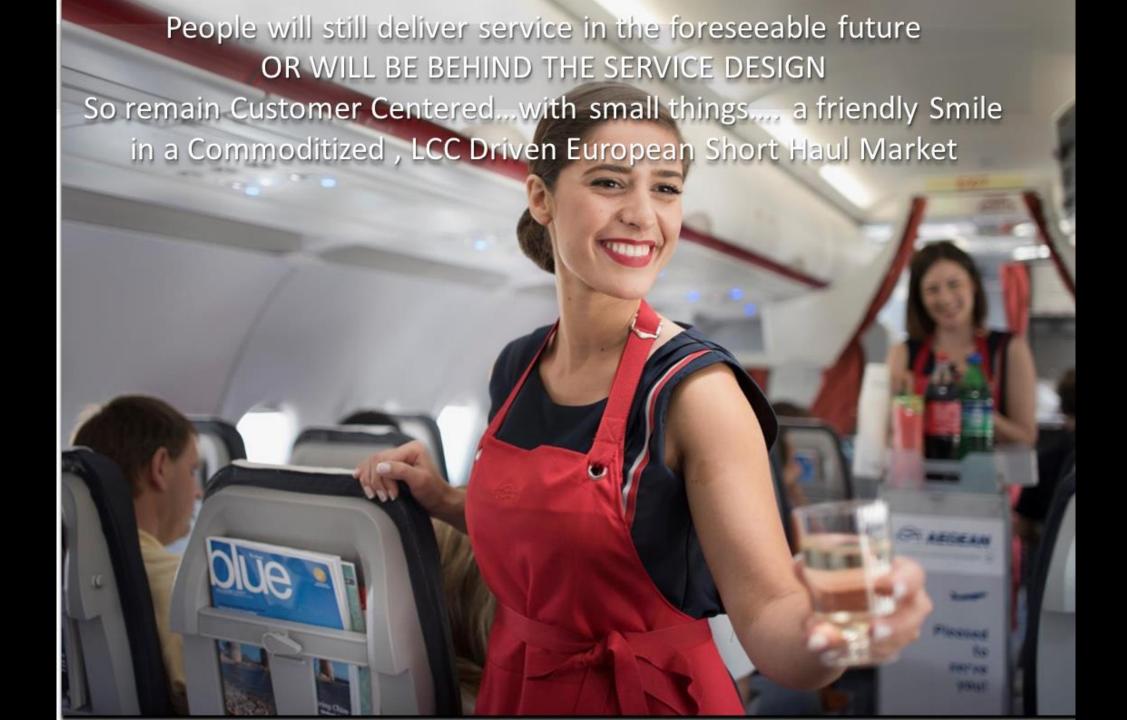
Rely on natural intelligence of young talents to exploit the potential of data analytics /artificial intelligence / other buzzword's methods

Break the vertical silo: data analysts must become business owners and understand themselves the purpose and the results of the data analysis

Break the horizontal silos: expose data analysts to different parts of the business to foster "holistic" view of the problem & the associated data

Remain focused on the problem at hand and customer needs







Thank you!

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Thriving in the Age of Data & Digital Transformation

Alexandre de Juniac, DG & CEO, IATA



















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Data, Aviation's Most Strategic Opportunity and Greatest Threat

Professor Liberty Vittert

Olin Business School & Harvard University Ambassador; Royal Statistical Society Associate Editor of the Harvard Data Science Review; Elected Member of the International Statistical Institute; BBC Expert Woman and TEDX speaker

























Data: Aviation's

Most Strategic Opportunity and Greatest Threat

Professor Liberty Vittert





Pascal's Wager

God Doesn't Exist

God Exists

Believe in God

Wasted Life with False Belief but

Nothing Happens

Heaven

Don't Believe In God Didn't
Waste life with false belief but

Nothing Happens

Hell Fire

Who?





1/2500
chance
of being murdered
by their partner

Truth: 90% chance OJ did it

Living

US women victims of domestic abuse

Defense Attorney Alan Dershowitz:

1/2500 chance OJ did it

9/10
chance
of having been
murdered by their
partner

Murdered

US women victims of domestic abuse

Who?

- 2 Gigabytes of Data / Second
- = 60 feet stacked of Harry Potters
- = 800 Harry Potters



Who?

Abraham Wald





Section of Plane

Wings

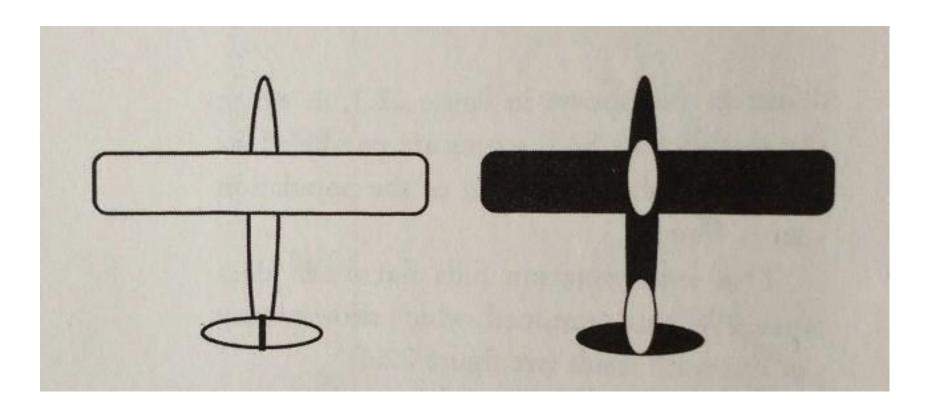
Engine

Fuselage

Fuselage System

Bullet holes per square foot

The Undamaged Parts



What?



HOME

NEWS

SHOWBIZ & TV

SPORT COMMENT

FINANCE

Chocolate can stave off
Alzheimer's: Cocoa boosts blood
flow to the brain - new research

SNACKING daily on dark chocolate could stave off Alzheimer's disease, especially in the elderly, according to new research.

PUBLISHED: 14:33, Fri, Jun 30, 2017 | UPDATED: 14:48, Fri, Jun 30, 2017

Science Daily

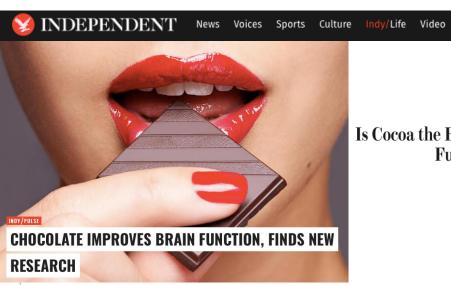
Your source for the latest research news

Science News

from research organizations

Cocoa and chocolate are not just treats -- they are good for your cognition

Cocoa can be seen as a dietary supplement to protect human cognition and can counteract different types of cognitive decline.



MIND

Daily Edition

Is Cocoa the Brain Drug of the Future?



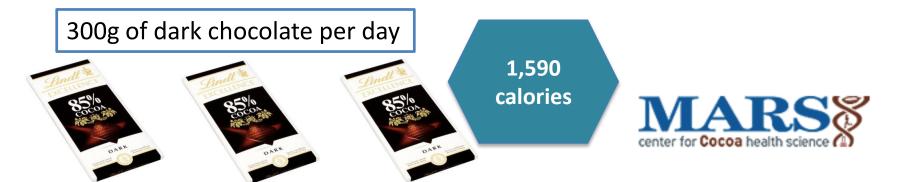
Can this Maggie Beer chocolate cake recipe prevent Alzheimer's?

Politics Australia World Business Sport Science Arts

ABC News Breakfast
Updated 19 Oct 2017, 10:58pm

What?

How much Chocolate would you have to eat to even 'potentially' have an effect on preventing Alzheimer's?



2 kg Milk Chocolate

Research



Annual Report Death Penalty Since 1976

Is there an issue with Race and Death Penalty?

| Defendant's race | Death Penalty | No Death Penalty | % Death Penalty |
|------------------|---------------|---------------------|-----------------|
| white | | | |
| black | | | |

Death Penalty

| Victim's race | Defendant's race | % Death Penalty |
|---------------|------------------|-----------------|
| | | |
| | | |

What?

Seattle

TOTAL

2146

3775

1841

3274

| Northern Northern Airline | | | Regular Airlin | | | |
|---------------------------|------------------|------------------|----------------|------------------|------------------|-------|
| Dest. | # of Arrivals | Arrivals on time | % on Time | Dest. | # of Arrivals | Arriv |
| LA | 559 | 497 | 88.9% | LA | 811 | 694 |
| Phoenix | 223 | 221 | 94.8% | Phoenix | 5255 | 4840 |
| San Diego | 232 | 212 | 91.4% | San Diego | 448 | 383 |
| San Francisco | 605 | 503 | 83.1% | San Francisco | 449 | 320 |

85.8%

86.7%

Seattle

TOTAL

262

7225

Arrivals on time

Time 85.6%

% on

694

201

6438

4840

92.1%

85.5%

71.3%

89.1%

76.7%





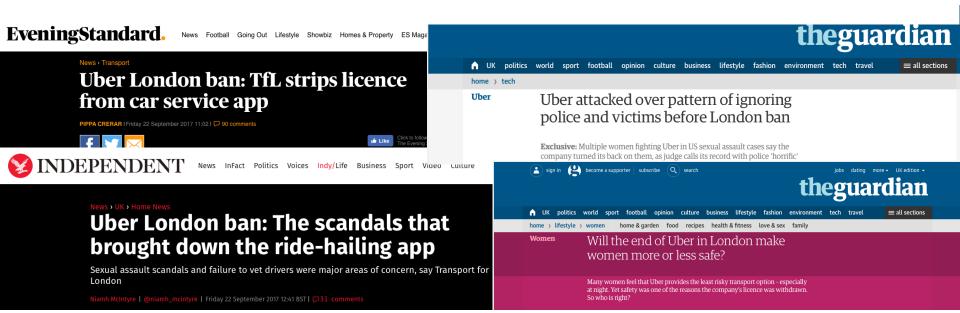
Uber Ban London



News InFact Politics Voices Indy/Life Business Sport Video Culture



The number of cab drivers charged with violent or sexual offences in London is at a five-year high.



How?

LTDA Black Cab



Taxis = Black Cab + Minicab (Uber included)



TRUTH: 154 allegations of rape or sexual assault had been made where the suspect was alleged to be a taxi driver

32 of these stated they were by an uber driver.

How?



THE (VERY) SIMPLE NUMBERS

How many Assaults?

How many Journeys?

Proportion of Sexual Assault by Uber Drivers:

$$32/154 \approx 20\% = 1/5$$

Number of Journeys per Week
in all of London in any kind of Taxi
including Uber ~2-3 million

Number of these Journeys by Uber:

1 million

Proportion of Journeys by Uber Drivers:

$$\frac{1mil}{3mil} = \frac{1}{3}$$



The number of cab drivers charged with violent or sexual offences in London is at a five-year high.

UBER is SAFER!!!!

2015: 136 reports of rape or sexual assaults by taxi

2009: 136 reports of rape or sexual assaults by taxi drivers

3 years before Uber started



What will Uber and London stand to lose?

3.5 million customers

Airport transfer fares



Uber vs black cabs

TO HAMPSTEAD, LONDON

| Airport | Uber | Black cab |
|----------|------|--------------|
| Gatwick | £62 | £158 |
| Stansted | £55 | £133 |
| Luton | £32 | £106 |
| Heathrow | £40 | £78 |
| City | £42 | £59 |

Uber London ~\$250 million

40,000 jobs lost Most Uber drivers contract hire their cars

Sources: taxifarefinder.com, uber.com





tomilahren 27-year-old Taylor Kristofer Meyer was robbed, stabbed, & brutally murdered while vacationing in Plava del

We can't bring Taylor back but we can get the message out: Mexico is NOT safe. More Americans are killed in Mexico than ALL

ate Department warns of dangerous Mexico spring

eak destinations

iLynn Thorpe, LMTonline.com / Laredo Morning Times Updated 11:23 am CST, Wednesday, February 20, 2019







sion o

Mexico for Spring Holidays? Or Death

FOXNATION Tomi Lahren Sits Down With Family of US Tourist Murdered in Mexico



'A Concentrated

Effort': GOP Rep Says the Scenes in

Addiction at CPAC:

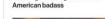






NEW YURK PUST







American tourists risk death to vacation in Mexico

Q SEARCH

By Isabel Vincent

December 15, 2018 | 9:56pm | Updated

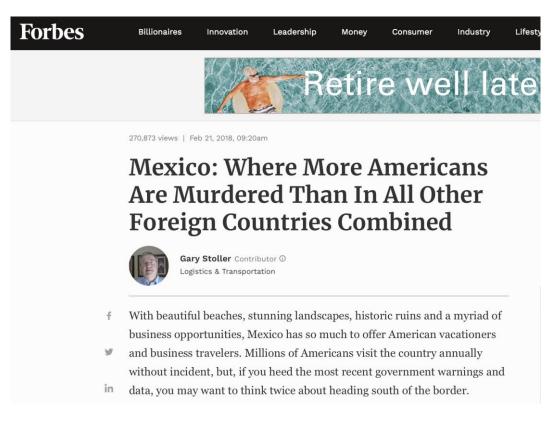
How?

Since 2002, The US State Department has listed how many Americans have died in unnatural deaths while abroad.

In 2017:

250 Deaths in Mexico

822 Total Deaths Abroad



THE (VERY) SIMPLE NUMBERS

Proportion of Deaths in Mexico?

Proportion of Travellers in Mexico?

250 Deaths in Mexico

822 Total Deaths Abroad

≈ 30%

35 million US travellers Mexico

88 million US travellers

40%

Homicide Rate in NYC is 4x more



Why?

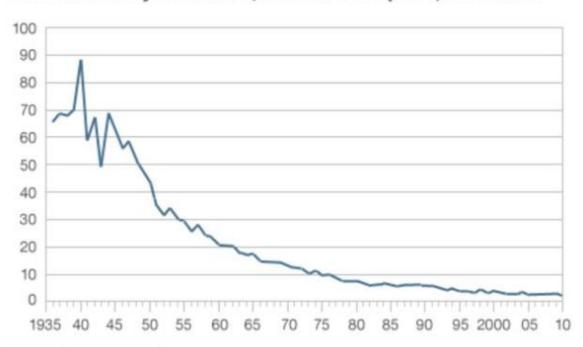
Finnish Baby Boxes



Why?

Finland Infant Mortality Rate: **World** Infant Mortality Rate: 2 in 1000 32 in 1000

Infant mortality in Finland, 1936 to 2010 per 1,000 births

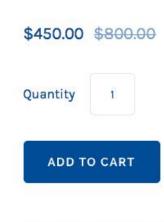


Source: Statistics Finland



Baby Box | Original Bundle Baby Box | Finnbin

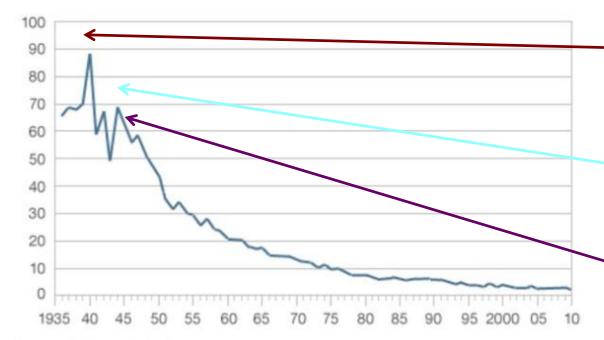




The Finnbin Original Bundle Baby Box is like a baby registry

Why?

Infant mortality in Finland, 1936 to 2010 per 1,000 births



Source: Statistics Finland

The (very simple) Numbers

1938: Finland Infant Mortality higher than other Nordic Neighbors

1944: 31% of mothers received pre-natal education

1945: 86% of mothers received pre-natal education

Actual Causes:

- 1) Education
- 2) General Progress:

Europe: 1900 15%

Present 0.4%







News > World > Americas

New Jersey to become first US state to give parents baby boxes

US STATES INTRODUCE BABY BOXES TO

HELP COMBAT INFANT MORTALITY



Alabama:

RACHE @rach

Monda

60,000

baby boxes

\$15 million

New Jersey: 105,000

baby boxes

\$26 million

OLLOW

Ohio:

140,000

baby boxes

\$35 million

| Why? | In 2017: | | | | |
|--|----------|----------|------------------|---------------|--|
| Alaba | ma: | 60,000 | baby boxes | \$15 million | |
| New J | lersey: | 105,000 | baby boxes | \$26 million | |
| Ohio: | | 140,000 | baby boxes | \$35 million | |
| | | | | | |
| Alabama: diapers for a year for 30,000 babies | | | | | |
| New Jersey: baby food for a year for 40,000 babies | | | | | |
| new. | Jersey. | рару тоо | d for a year for | 40,000 babies | |

Why?

The Present:

Dataism vs Humanism



The Future:

Dataism + Humanism

Who was Asked?

What was Asked?

How was it Interpreted?

Why do we Care?



IATA Legal Brief

Julie Vandenbussche, Senior Legal Counsel, IATA

Marie Claude Simard, Assistant General Counsel, IATA



















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Bird's-eye view on how data is shaping the future of travel

Moderator: Tanya Beckett, Presenter, BBC News

Caroline Gorski, Group Director, R2 Data Labs, Rolls-Royce Plc

Jan Stövesand, Sr. Director Analytics & Data Solutions, Lufthansa Technik AG

Vince Chirico, SVP Global Network & Tech. Partners, CWT

Soumit Nandi, MD, Customer Technology Platforms, United Airlines





















Networking Break





















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How can airlines monetize their most valuable asset, their customer data?

Dr. John Carney, Chief Data Scientist, OpenJaw



















Dr John Carney, Chief Data Scientist OpenJaw Technologies



How can airlines monetise their most valuable asset, their customer data?







\$6.12

Airline profit per passenger

\$6.62

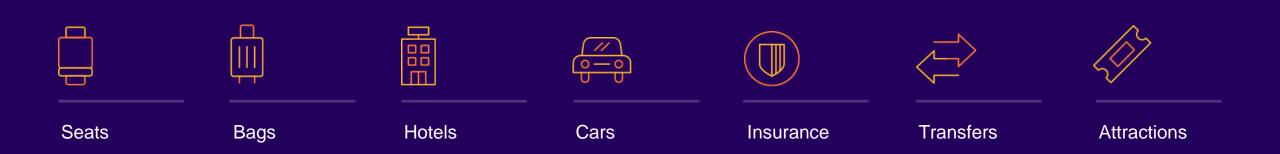
Big Mac in Switzerland

Source: IATA Economics - Economic Performance of the Airline Industry, Mid-Year 2019

Load Factor



Become a travel retailer and '10x' your yield

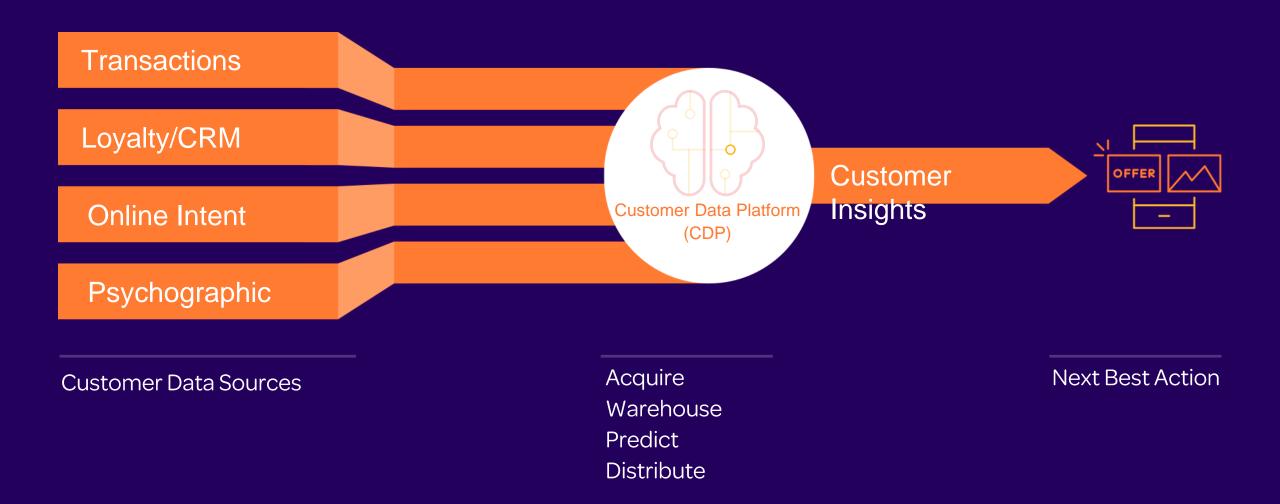


Yield

To '10x' your yield you need to know what your customer wants...



How do you know what the customer wants?



Personalize d Message

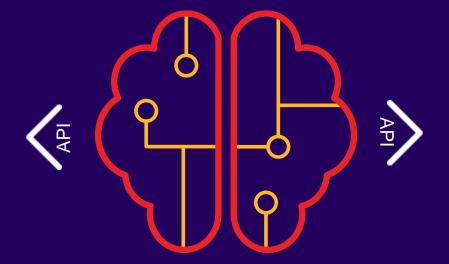


Personalize d Service



Personalized Conversation





Customer Data Platform (CDP)



Banne r Ad



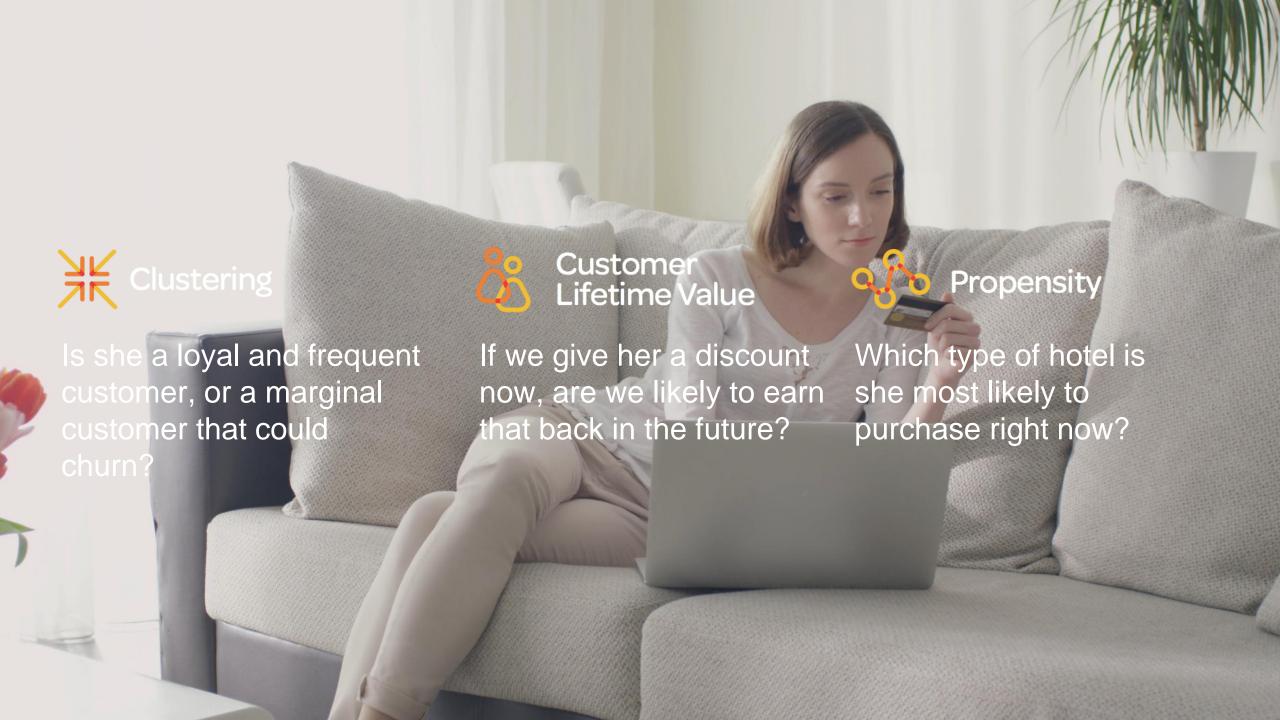
Personalized Email



Personalized Offer

What is the 'secret sauce' of any great CDP?





If we embed a CDP into the airline tech ecosystem, what does it look like?

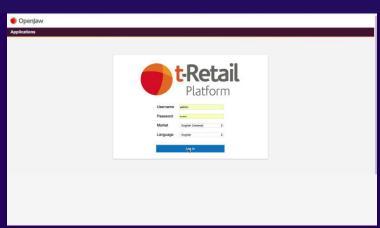


Real-time personalized offer management

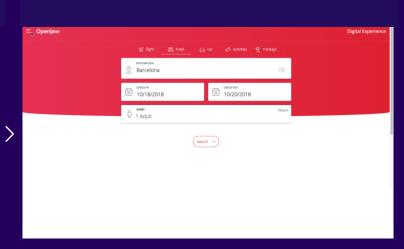












What does the customer want?

How do I create the offer?

Where do I present the offer?

Dr John Carney

Chief Data Scientist
OpenJaw Technologies

<u>John.Carney@openjawtech.com</u>





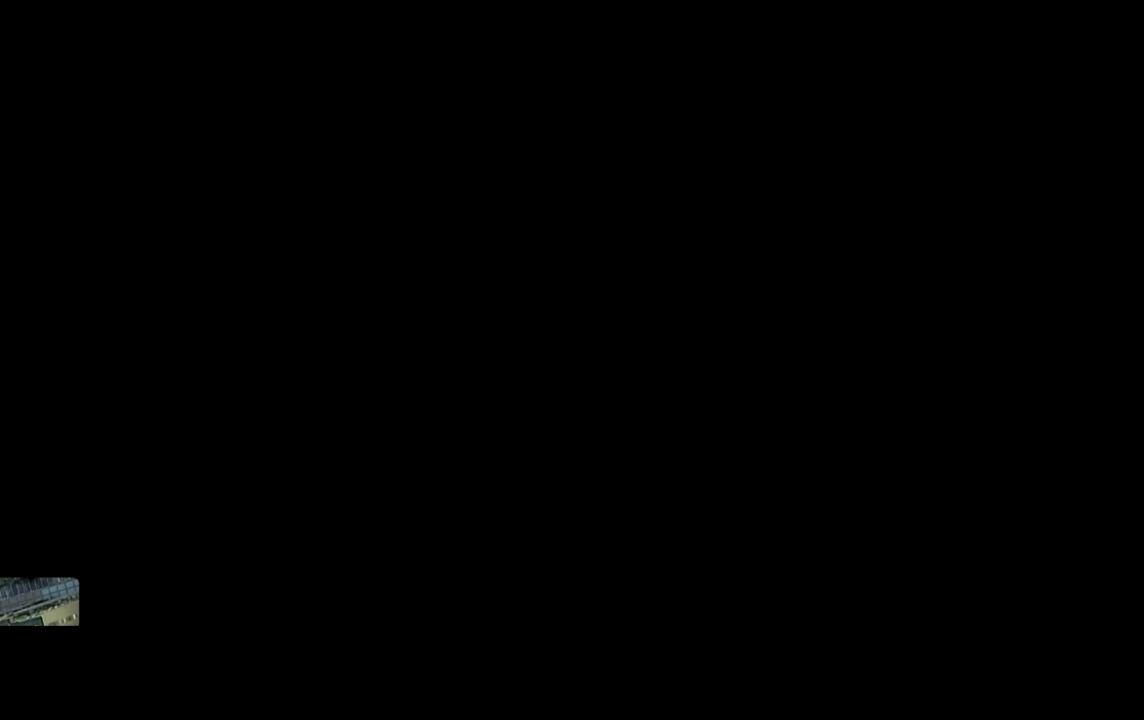
Dr John Carney

Chief Data Scientist
OpenJaw Technologies

<u>John.Carney@openjawtech.com</u>







How to become a hyper Customer-centric Airline

Dee Waddell, Global MD, Travel & Transportation, IBM





















Hyper Customer Centricity: Transforming in a world of Mobile, Data and AI

IATA Aviation Data Symposium – June 25-27, 2019

Dr. Dee K. Waddell

Global Managing Director, Travel & Transportation Industries, IBM



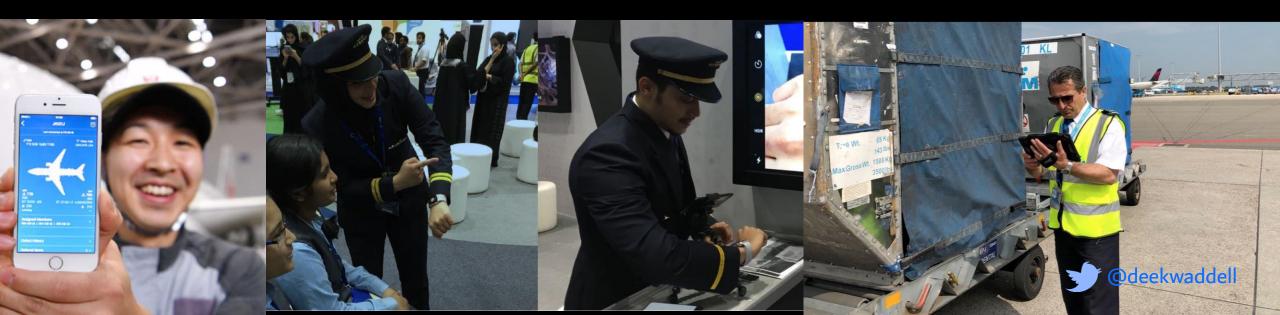
IBM Industry Academy
IBM Institute for Business Value
IBM Research







Transformation is Happening



Technology Innovation is accelerating digital transformation...

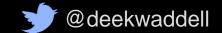
C-suites think 4 new technologies will lead the near term future

64% Mobile 53% Cognitive/AI and RPA 52% Internet of Things 48% Cloud 19% Virtual Reality 16% **Augmented Reality** 14% Robots 13% 3D Printing Insights from the IBM 2018 Global C-suite study

83% of CEOs are leveraging emerging technology to adopt Source: IBM C-Suite Study, 2016 (n=5,247) new revenue models

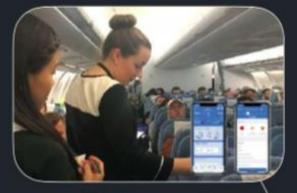
The majority of CxOs see technology primarily as a means of adding value rather than subtracting costs

Source: Preview of the 2018 IBM Global C-suite Study: "What is the likelihood of your enterprise investing in the following technologies to enable your strategic goals over the next 2-3 years (n=6,037)





Flight Ops



In flight Services



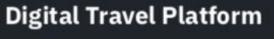
Pilots



Ground Handling



Maintenance





Data & Analytics



Artificial Intelligence



Call Center



Airports

Digitization Automation Data & Al Collaboration
Employee Empowerment
Learning Culture

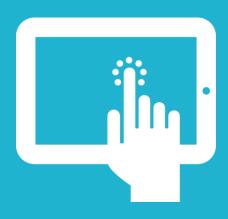


IBM Travel Platform

Retail - Operations - Maintenance

An open platform that works with your existing systems

Rooted in Design Thinking & User Experience



Made for Mobile



Cloud Based



Data Rich



Cognitive





Aviation MobileFirst Portfolio

Customer Service Agent



Passenger Care Check in, IRROPs handling, ancillary sale



Rapid Board Mobile boarding, doc check & analytics



Manage Gates
Turn management
multiple gates

Flight Attendant



Passenger +
Day of flight info w/pax
info & reporting



Ancillary Sales
Onboard sales w/pax
analytics



Cabin Care
Onboard cabin defect
reporting

Pilot



Plan Flight
Discretionary fuel
planning & analytics



FlyNOW
Day of flight info w/flight brief & manuals



Roster
Crew schedule &
certification notifications

Line Maintenance



Assign Tech Engineer allocation & turn status mgmt

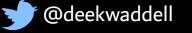


Inspect & Turn
Task & work order info
& reporting

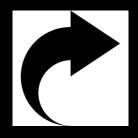
Ground Operations



Turn ManagerBaggage loading and offloading

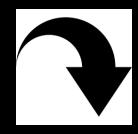


Personalized Pricing & Offers - Al/Cognitive Optimization



A. Learning Algorithms

Continuously assesses offers, orders and situational data to build knowledge base of factors that drive outcomes.



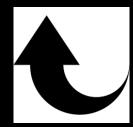
D. Present Optimal Offer

Presents optimal offer or ranked options. Offer and response feed into learning...and the cycle continues, with the "rules base" continuously evolving.



B. Forms Offer Hypotheses

Understands offer context and selects most promising options (e.g., lounge access, discounted upgrade, etc.)

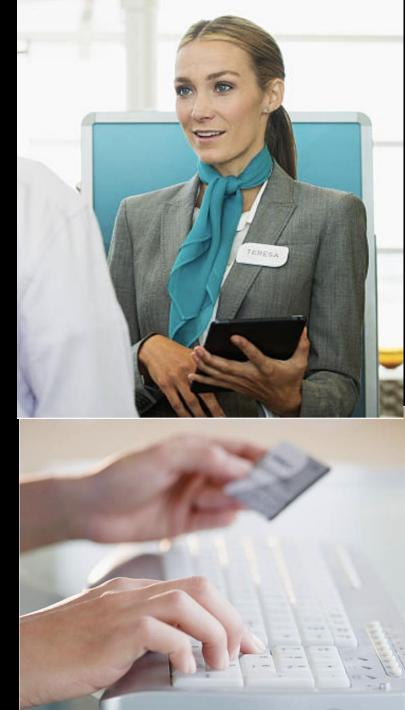


C. Scores Hypotheses

Quantifies the effectiveness of each hypothesis via a "cognitive score". Systematically manages **exploitive** and **explorative** offers.







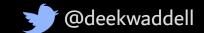
Community Innovation can Accelerate











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Top strategic data and technology trends in aviation

Moderator: David McEWEN, Director, Industry Architecture, IATA

Dr. Dirk Jungnickel, Senior VP Enterprise Analytics | Digital & Innovation, Emirates Group

Massimo Morin, Head, Worldwide Business Development, Travel, AWS

Nicolas Forgues, CTO, Air France-KLM

Sjoerd Blüm, CIO, Amsterdam Airport Schiphol



















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Industry Data and ADS Highlights and 2019 White Paper: Data Science Hype or Ripe for Aviation?

Charles de Gheldere, Director, Travel Intelligence, IATA

Houman Goudarzi, Head of BI & Industry Engagement, IATA





















ATHENS, GREECE 25 - 27 JUNE 2019

Charles de Gheldere

Director, Travel Intelligence, IATA

Houman Goudarzi

Head of BI & Industry Engagement, IATA



ADS & Al Lab 2019



600+
Delegates

110+ Speakers 5 TRACKS 5 Industry Meetings

1 St IATA Aviation Datathon **1** St

IATA Aviation

Data

White Paper

Dragons' Den, Live Contest 15+
social &
networking
events



5 Specialized Tracks



Passenger

Safety & Flight Operations

Air Freight

Payment & FinTech

Data Science & Technology



Aviation Data White Paper



AVIATION DATA

WHITE PAPER SERIES

25 JUNE 2019

DATA SCIENCE HYPE OR RIPE FOR AVIATION?

Download at www.iata.org/data-white-paper



Aviation Data White Paper





Offers, Orders, Hyper Personalization & Customer Experience



ATM, Connected Aircraft, Maintenance, Intelligent Health Monitoring



Payment Data, Fraud prevention & Compliance



Enterprise Analytics



Commercial Strategy, Tactics & Planning



Operational Planning, Execution, Optimization & Disruption Management



Customer, Competitor & Market Insights Analytics



Common Industry Data Sharing Platforms







Networking Lunch























Workshop

APP IN THE AIR

Your personal travel assistant



















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