



Technology

Thank you to our Sponsor

AMADEUS





Welcome ! ;)

Juan Ivan Martin

Head, Innovation

IATA



amadeus



What is Possible for AI and BI Tools

Rob May

CEO

Talla



amadeus

WHAT AI CAN DO TODAY AND TOMORROW

Rob May, CEO, Talla

AGENDA

- Who Am I?
- Why You Need A.I. ASAP
- Why Is This Happening Now?
- The PAC Framework
 - What you should think about in your company
 - What tools you can use to make this happen

ABOUT ME

- CEO and co-founder Talla
- Former CEO of Backupify
- Venture partner at Pillar
- 35 A.I. related angel investments
- The world's most popular A.I. newsletter <http://inside.com/ai>



A BRAIN TEASER

- You start with a single lily pad on an otherwise empty pond. The surface area of the lily pad doubles every day, such that in 30 days it will cover the entire pond. At what point does it cover half the pond?

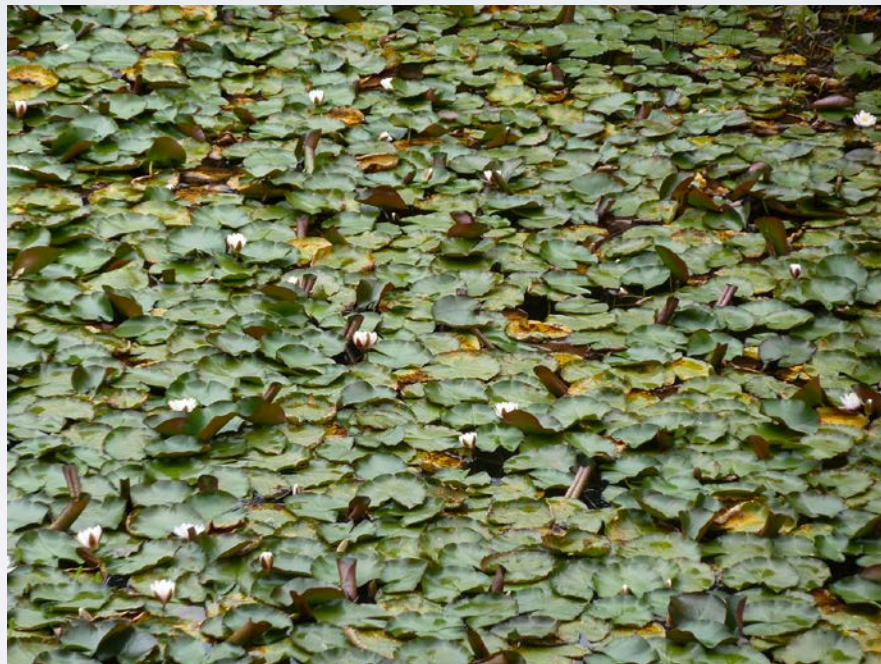
DAY 20



DAY 29 1/2



DAY 30

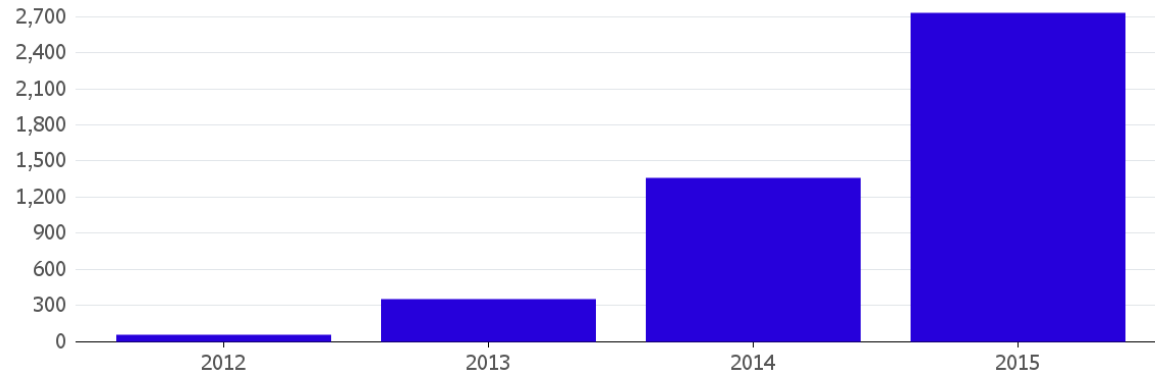


REASON #1: A.I. IS ACCELERATING

A.I. PROJECTS AT GOOGLE

Artificial Intelligence Takes Off at Google

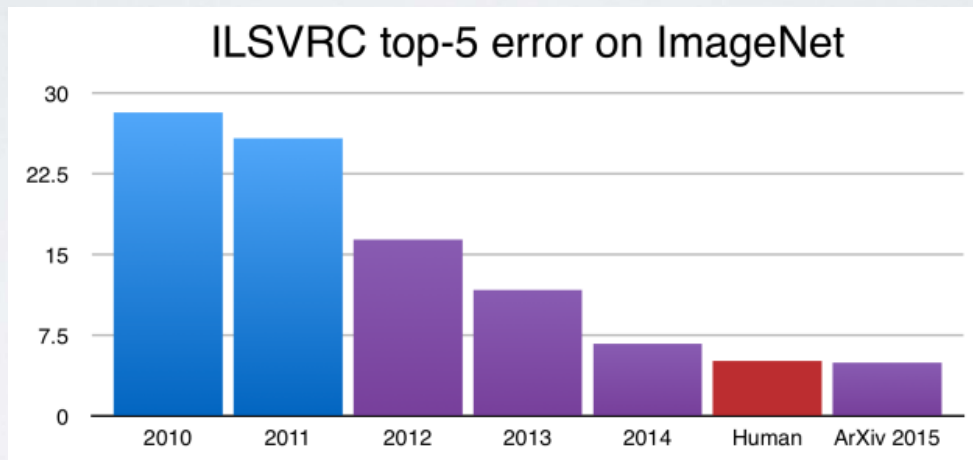
Number of software projects within Google that uses a key AI technology, called Deep Learning.



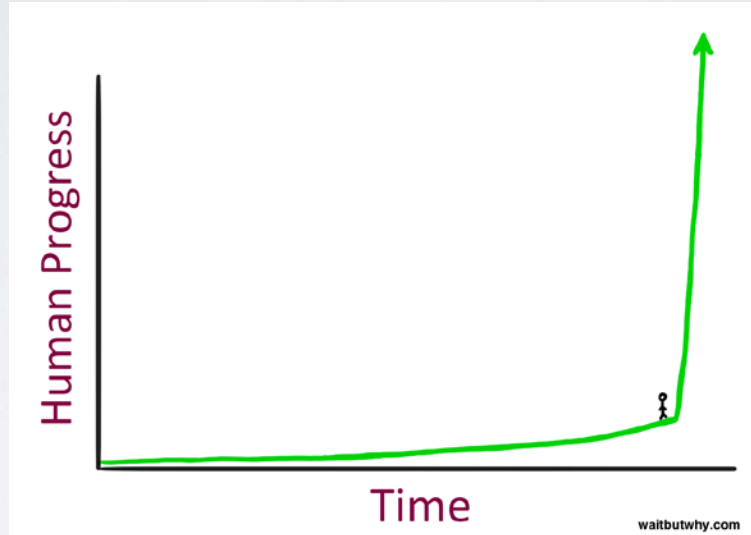
Source: Google

Note: 2015 data does not incorporate data from Q4

HISTORY OF MACHINE VISION

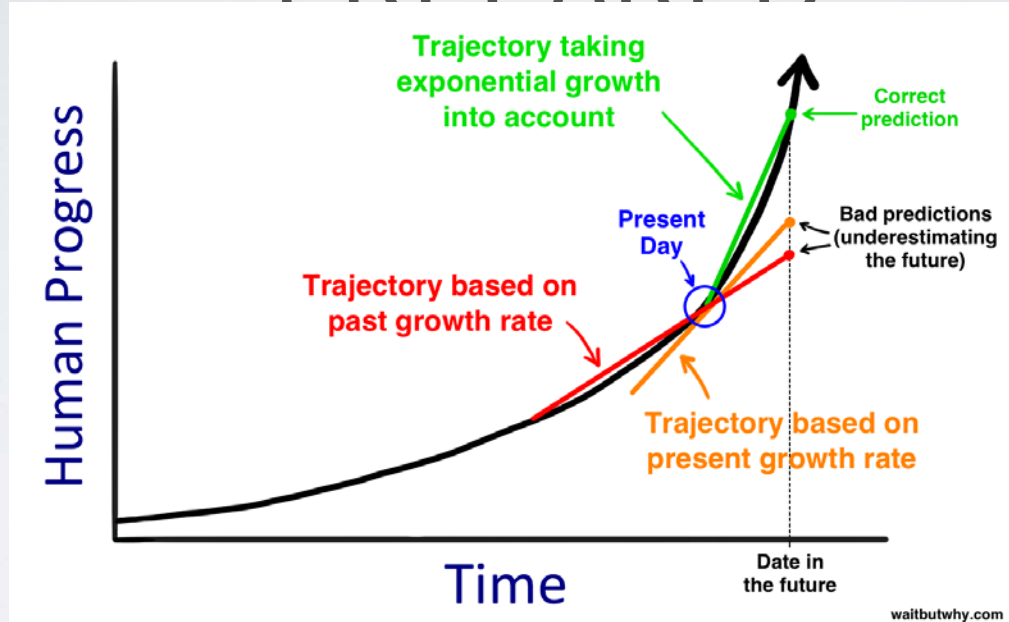


THIS IS ABOUT TO HAPPEN TO YOUR BUSINESS



- <http://waitbutwhy.com/2015/01/artificial-intelligence-revolution-1.html>

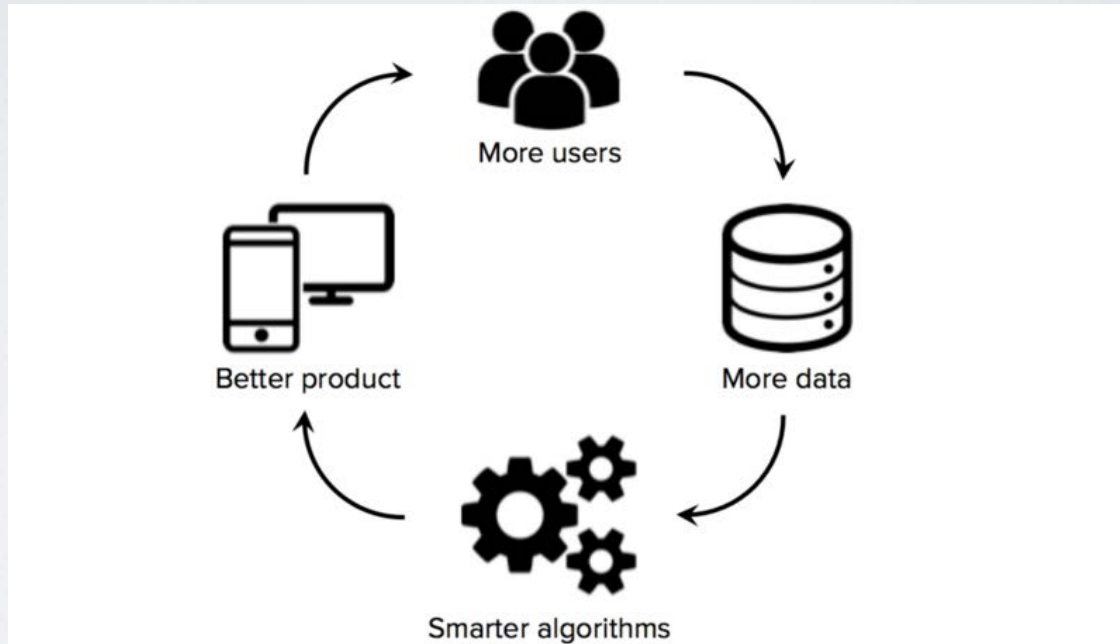
THIS IS WHY YOU AREN'T PREPARED



- <http://waitbutwhy.com/2015/01/artificial-intelligence-revolution-1.html>

REASON #2: A.I. IS A FLYWHEEL

GET A.I. ASAP



HOW CAN A.I. HELP YOU SCALE?

THINGS A.I. CAN HELP YOU DO

- Get the right information to the right person at the right time.
- Extract valuable insight from data - automatically
- Assist with decision support
- Amplify productivity through task automation

THE PAC FRAMEWORK

- Three key areas to consider
 - Customers
 - Product
 - Operations

THE PAC FRAMEWORK

- The three ways to use A.I.
 - Predict
 - Automate
 - Classify

FUNCTIONAL USE CASE: RECRUITING

- Predict - Who will be successful? Who is ready to jump to a new job?
- Automate - Setting up interviews, collecting feedback about those interview
- Classify - Bucket resumes as they come in.

THE FULL FRAMEWORK

	Customers	Product	Operations
Automate	<ul style="list-style-type: none">• Lead generation• Sales prospecting• Call follow up	<ul style="list-style-type: none">• Onboarding and training• Bug resolution workflow	<ul style="list-style-type: none">• Common monotonous workflows
Classify	<ul style="list-style-type: none">• Which customers are most profitable?	<ul style="list-style-type: none">• Customer Input• Bug classification	<ul style="list-style-type: none">• Information and expertise
Predict	<ul style="list-style-type: none">• Which deals will close?• Which customers will churn?	<ul style="list-style-type: none">• What does your customer want to do next?	<ul style="list-style-type: none">• Shortfalls• Employee Attrition

SNAPCHAT

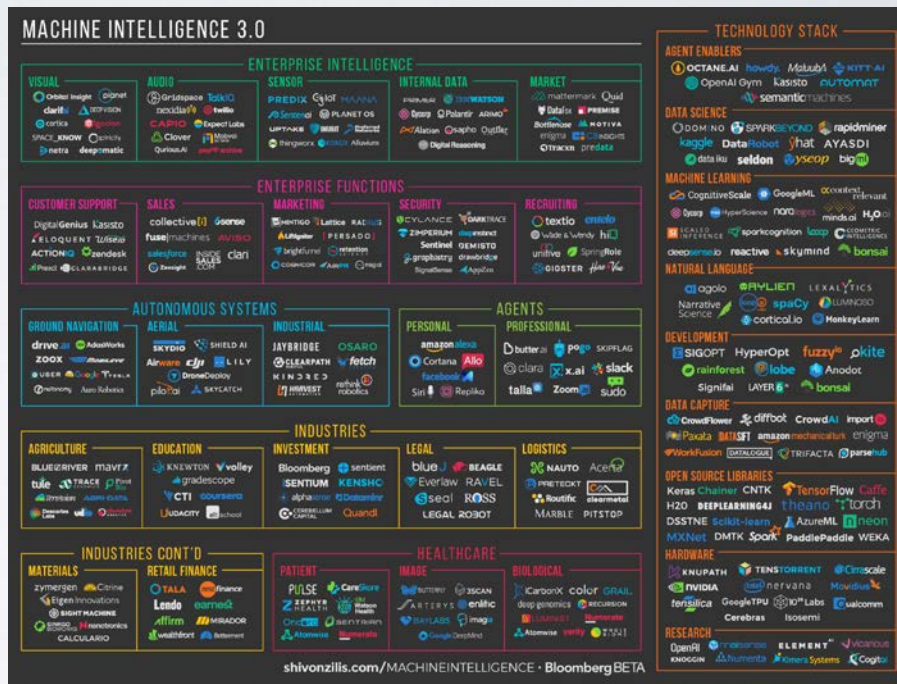
	Customers	Product	Operations
Automate			<ul style="list-style-type: none">Information gathering before meetings
Classify	<ul style="list-style-type: none">Highest value users	<ul style="list-style-type: none">Autocreate groups for sharing	
Predict	<ul style="list-style-type: none">Highest value, based on initial usage	<ul style="list-style-type: none">Pre-select new filters and tools a user might like	<ul style="list-style-type: none">Next steps in employee training

QUESTIONS TO ASK

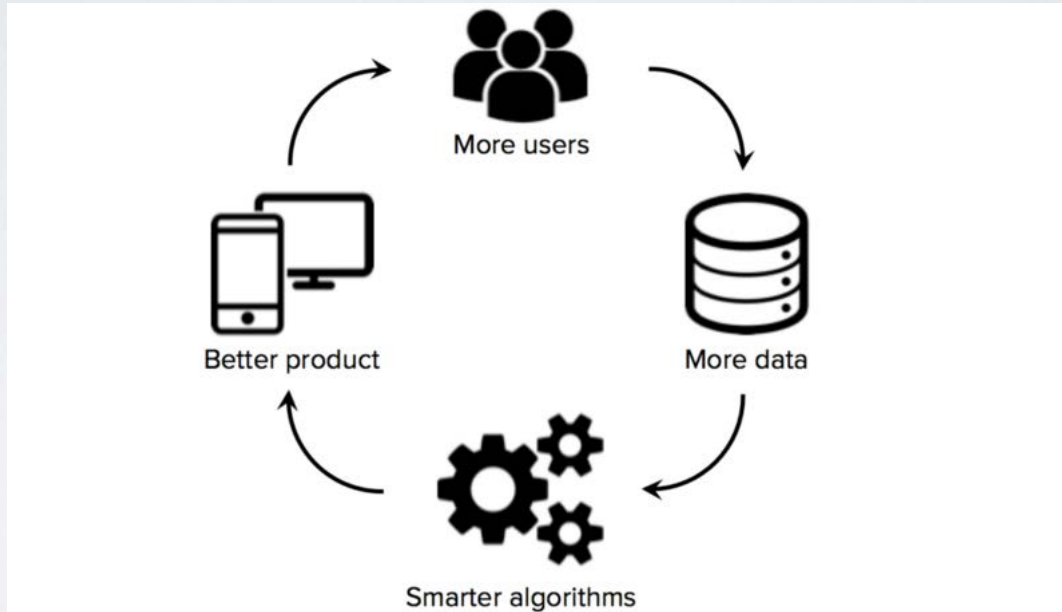
- What's the ROI?
- Do we have the data?
- Does the data set drift?
- What tools do we use?

TOOLS TO CONSIDER

- Machine Intelligence Landscape 3.0, from Shivon Zillis



WHERE TO START: FLYWHEEL



WHERE TO START: UNIQUENESS



UNIQUE

JUST BECAUSE YOU ARE UNIQUE DOES NOT MEAN YOU ARE USEFUL

IN SUMMARY

- Get started now so that you build an understanding of A.I. before we hit the knee of the curve
- Look for your highest value applications
- Find your flywheel

QUESTIONS?

- @robmay
- rob@talla.com
- sign up for inside.com/ai



My First AI Project - Where to Start

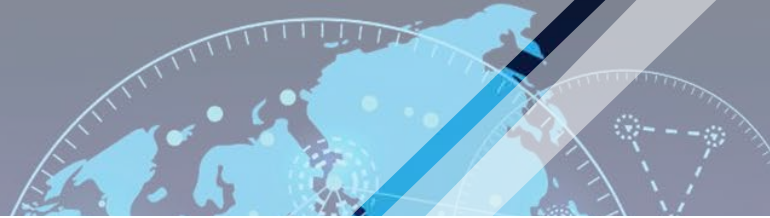
➤ Conrad Lennard

Executive, Featurespace

➤ Juan Ivan Martin

Head of Innovation, IATA





- My first AI project -



ADS – Miami - USA

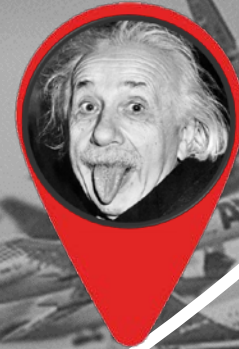
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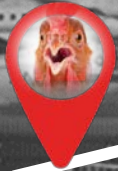
Intro

▶ Spectrum of intelligence



Intro

▶ Spectrum of intelligence

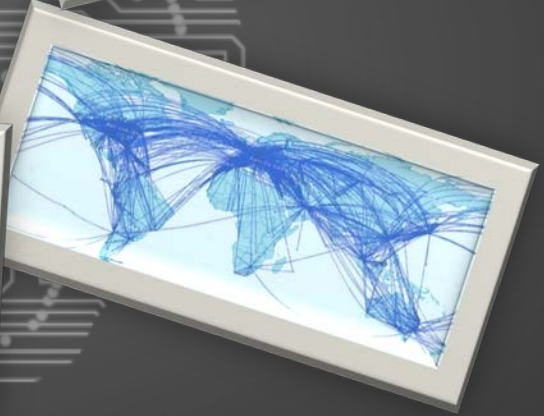


Intro

▶ Spectrum of intelligence



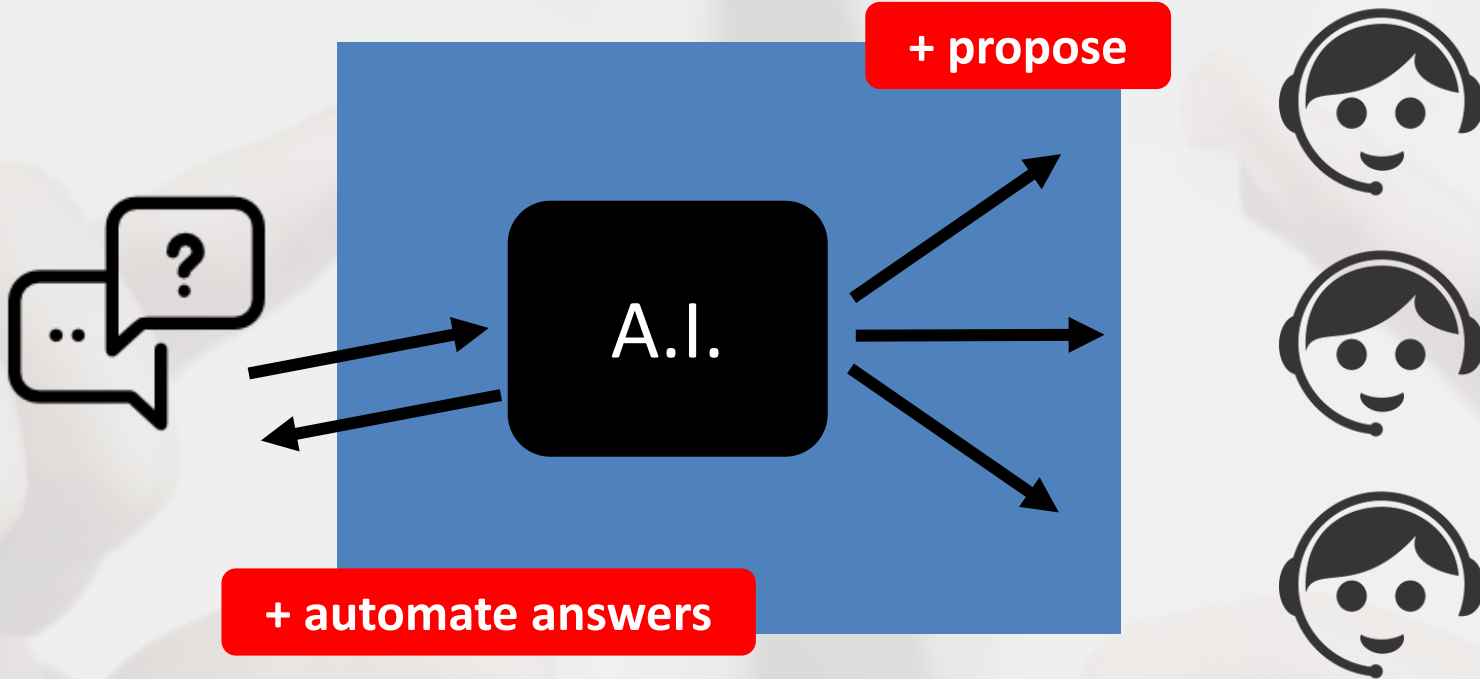
AI in aviation Industry



IATA projects around AI

- 1 Customer Service
- 2 Autonomous vehicles
- 3 Publications/training
- 4 Fraud/default prevention
- 5 Remittance Holding Capacity
- 6 TIP

1. Customer Service



2. Autonomous vehicles

nextt.iata.org



OFF-AIRPORT ACTIVITIES

Flexibility in what can happen before and beyond airport

ADVANCED PROCESSING

Increasing use of digital identity management, automation and robotics

INTERACTIVE DECISION MAKING

Linking everything together with trusted, real-time data throughout the journey



3. Publications/training

Transport policies:

- Dangerous goods regulations
- Commercial policies
- Military goods restrictions
- Export restrictions

Training

Watson – Cognitive Engine

Compliance warnings

Compliance supervision

Hyperledger permissioned blockchain

COI

PL

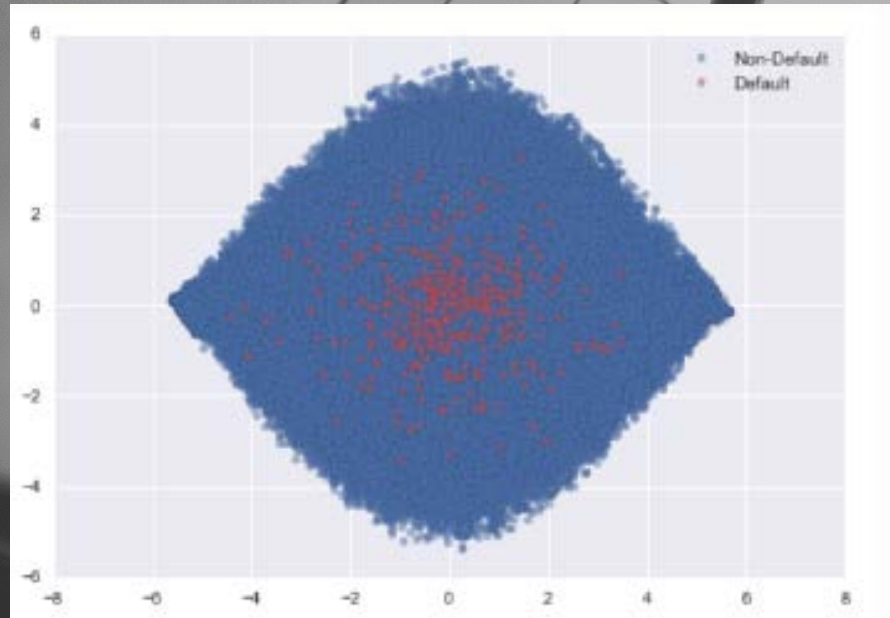
DGD

HWB

AWB

4. Fraud and default prevention

▶ Default



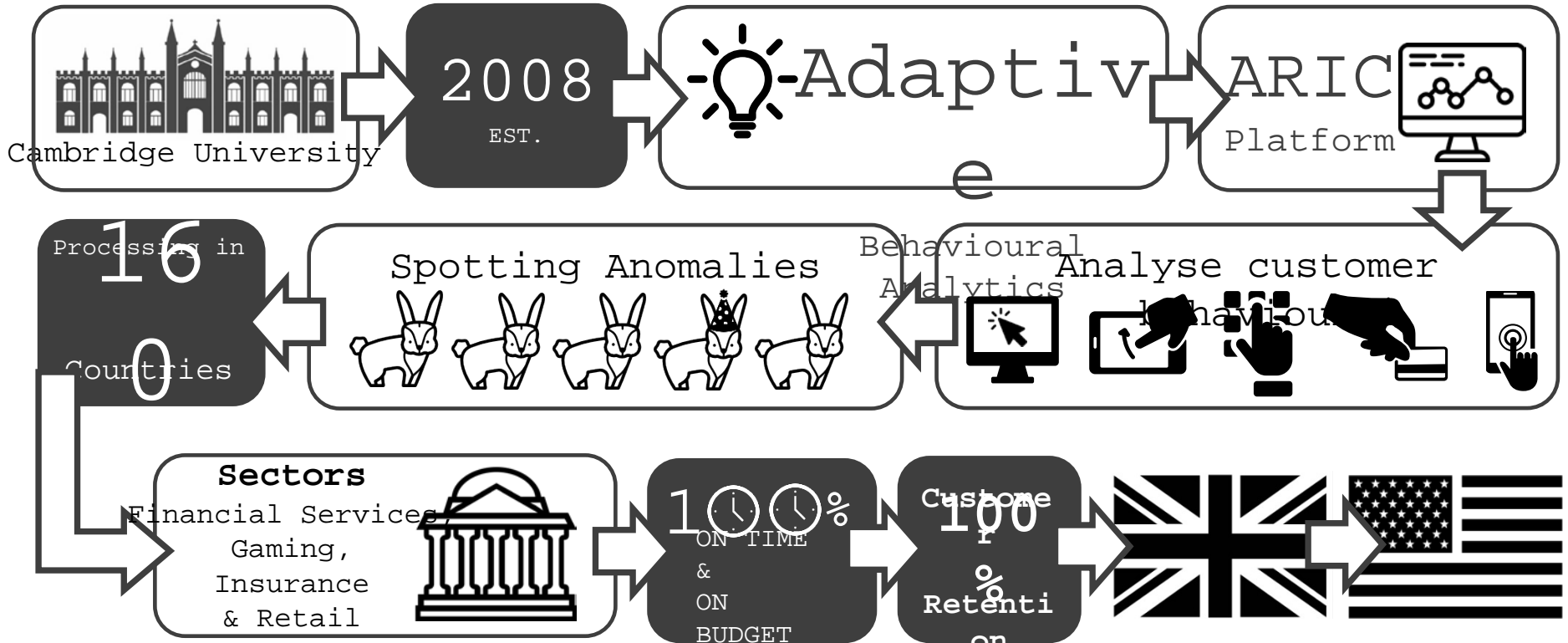
▶ Fraud



5. Remittance holding capacity

Who We Are

We are world leaders in adaptable behavioural analytics for fraud detection

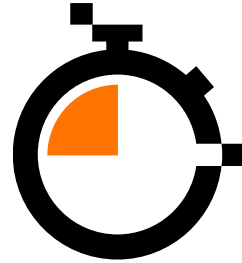


Company Overview | ARIC™ Machine Learning Platform

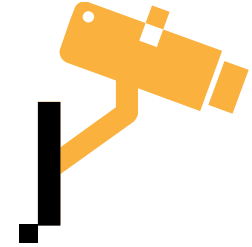
Our core technology is built, deployed and providing decisions in authorisation streams



Adaptive, self-learning models



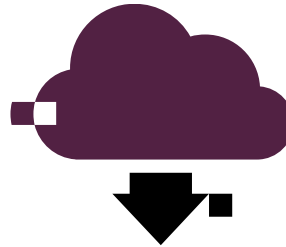
Real-time decisions



Individual monitoring at event level



Change point detection spots anomalies



Delivery: on premise or cloud hosted



Integration at lowest cost and in minimal time

Company Overview | Customers & Awards

Insurance,
Retail &
Travel



Financial
Services



Gaming



Awards



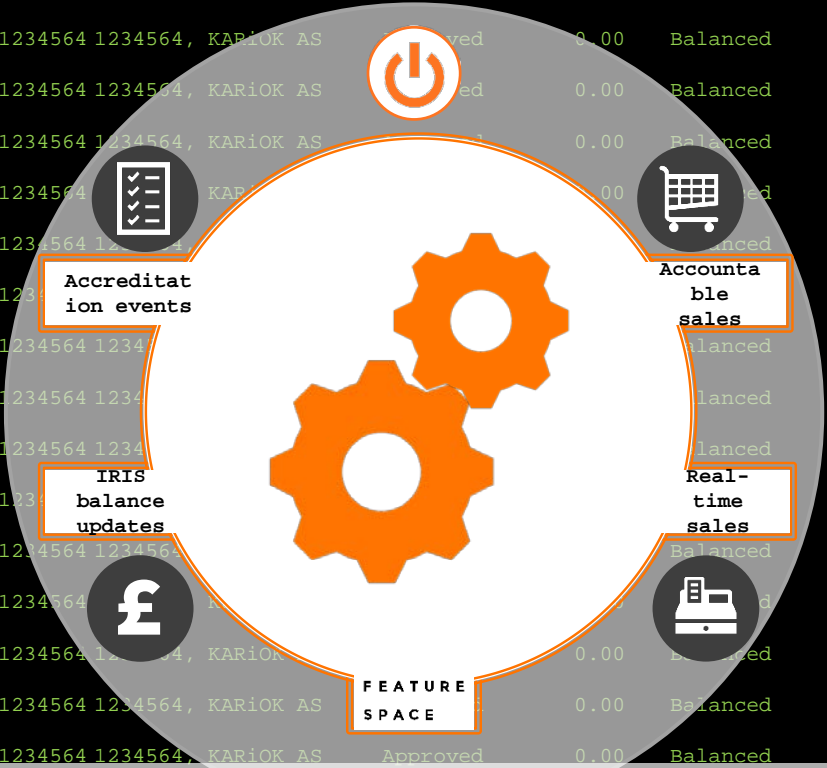
- > Real-time transaction monitoring
- > Data models to identify bust-outs and other changes in behaviour early
- > Alerts for Remittance Holding Capacity (RHC) - by agent and parent entity
- > Firm grounding around core business rules
- > System to be live by the end of 2017

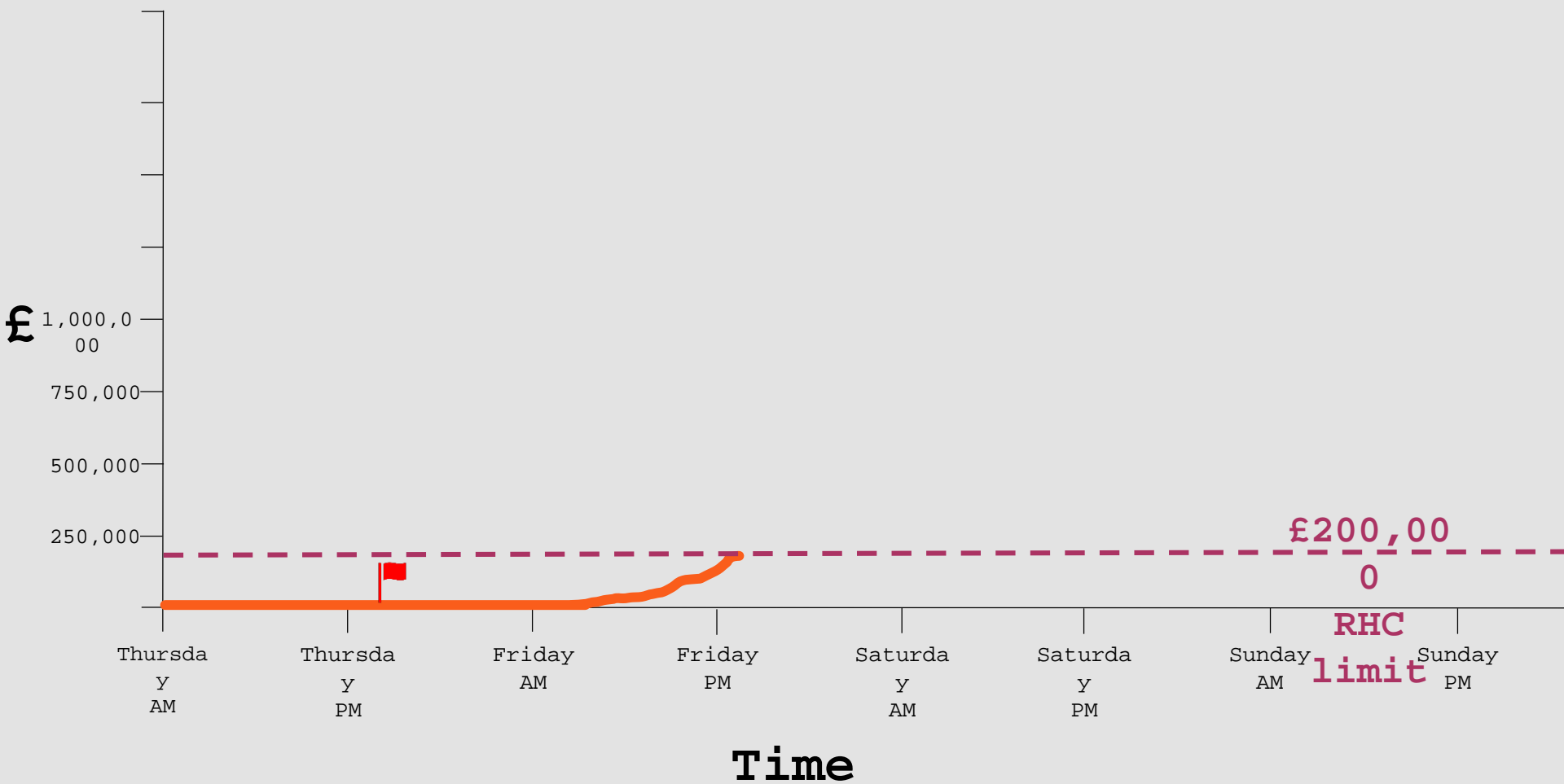


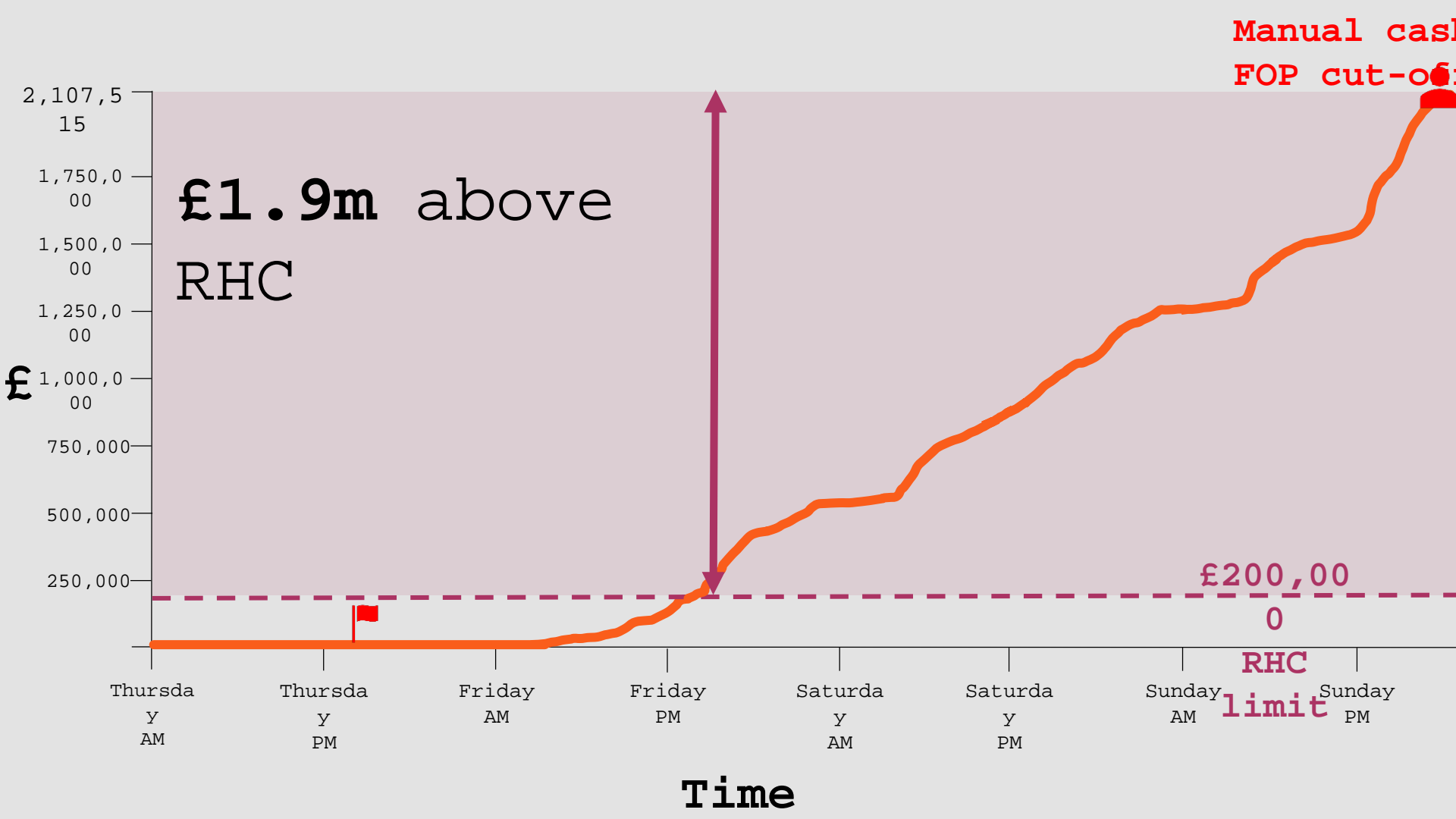
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JHO_n_JFHI, ADFHDSJ BSP	20170102W	1234564 1234564, KARIOK AS	0.00	Balanced	154,845.00	0.00	0.00	154,845.00	
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170103W	1234564 1234564, KARIOK AS	0.00	Balanced	454,565.00	0.00	0.00	454,565.00	
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170104W	1234564 1234564, KARIOK AS	0.00	Balanced	111,237.45	0.00	0.00	111,237.45	
0.00 0.00 0.00	0.00								
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0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170202W	1234564 1234564, KARIOK AS	0.00	Balanced	244,884.00	0.00	0.00	244,884.00	
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170403W	1234564 1234564, KARIOK AS	0.00	Balanced	656,598.00	0.00	0.00	656,598.00	
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170404W	1234564 1234564, KARIOK AS	0.00	Balanced	5,682.75	0.00	0.00	5,682.75	
0.00 0.00 0.00	0.00								
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0.00 0.00 0.00	0.00								
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0.00 0.00 0.00	0.00								
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0.00 0.00 0.00	0.00								
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0.00 0.00 0.00	0.00								
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0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170502W	1234564 1234564, KARIOK AS	0.00	Balanced	546,541.10	0.00	0.00	546,541.10	
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170203W	1234564 1234564, KARIOK AS	0.00	Balanced	47,841.00	0.00	0.00	47,841.00	
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170804W	1234564 1234564, KARIOK AS	0.00	Declined	546,414.20	0.00	0.00	158,126.39	-546,414.20
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170204W	1234564 1234564, KARIOK AS	0.00	Approved	487,445.66	0.00	0.00	487,445.66	0.00
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170804W	1234564 1234564, KARIOK AS	0.00	Flagged	158,126.39	0.00	0.00	158,126.39	-158,126.39
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170803W	1234564 1234564, KARIOK AS	0.00	Approved	456,471.31	0.00	0.00	456,471.31	0.00
0.00 0.00 0.00	0.00								
JHO_n_JFHI, ADFHDSJ BSP	20170804W	1234564 1234564, KARIOK AS	0.00	Declined	145,235.14	0.00	0.00	158,126.39	-145,235.14
0.00 0.00 0.00	0.00								



Risk Management Engine

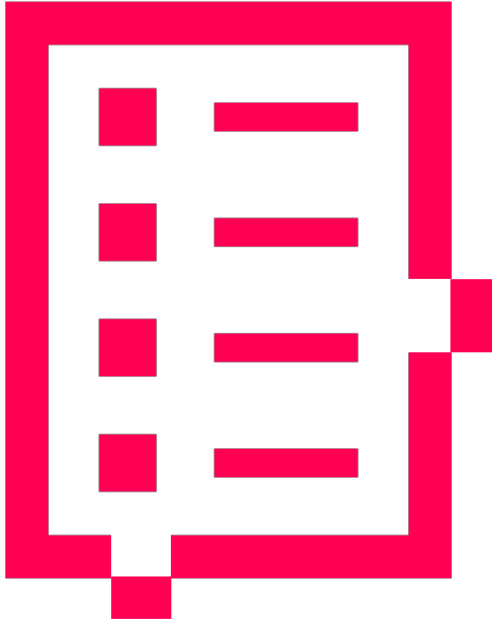






6. TIP

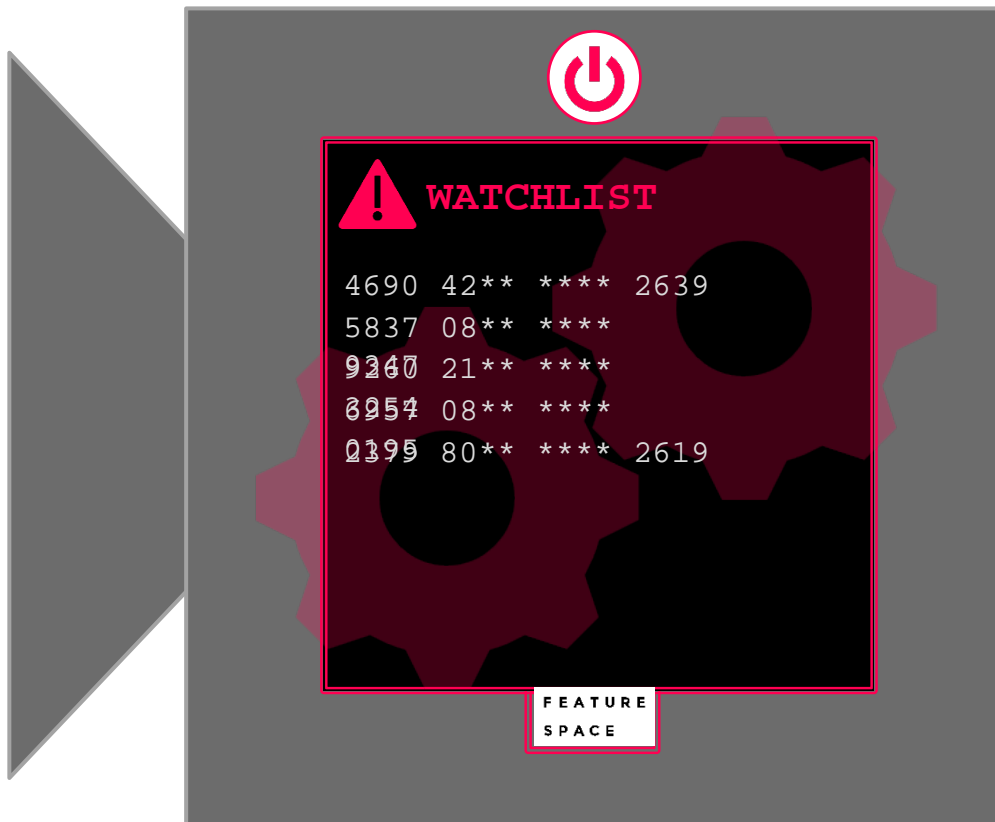




- > Deliver Transparency in Payments (TIP)
- > Safeguard Airlines against expensive alternative payment methods (APMs) and Virtual Account Numbers (VANS)
- > Monitor payments in real-time to identify APMs and VANS
- > Use Adaptive Behavioural Analytics to identify changes in APM and VAN usage
- > Give Airlines options to accept or reject APMs and VANS



Risk Management Engine



Add
surchar
ge

Accep
t

Reject

THANK YOU!



Juan Iván Martín

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A Major Airline Case Study on Artificial Intelligence Implementation and Benefits

➤ Rogier van Enk,

VP Distribution, Commercial Excellence & Data Science, Finnair

➤ Jonathan Newman

➤ Commercial Director, Caravelo





Finnair's NDC Journey & Caravelo's Chatbot

IATA Aviation Data Symposium

Rogier van Enk
VP Distribution, Commercial Excellence & Data Science

Jonathan Newman
Commercial Director, Caravelo



(caravelo)



**ABOUT
ME**



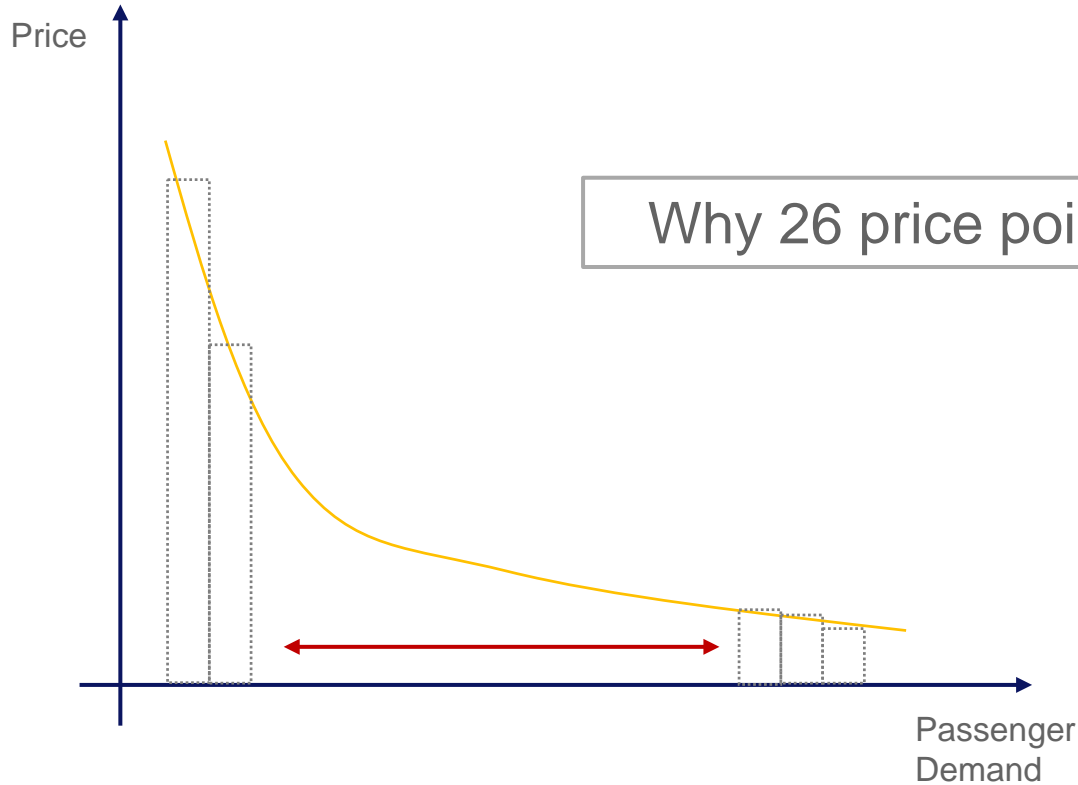


Four important things about our industry



1

The airline industry is rooted in history



The airline industry is complicated



Our network:

7000 origin destinations

50 points of sale

26 price points

2x corporate products

2x codeshare choices

8x agent types

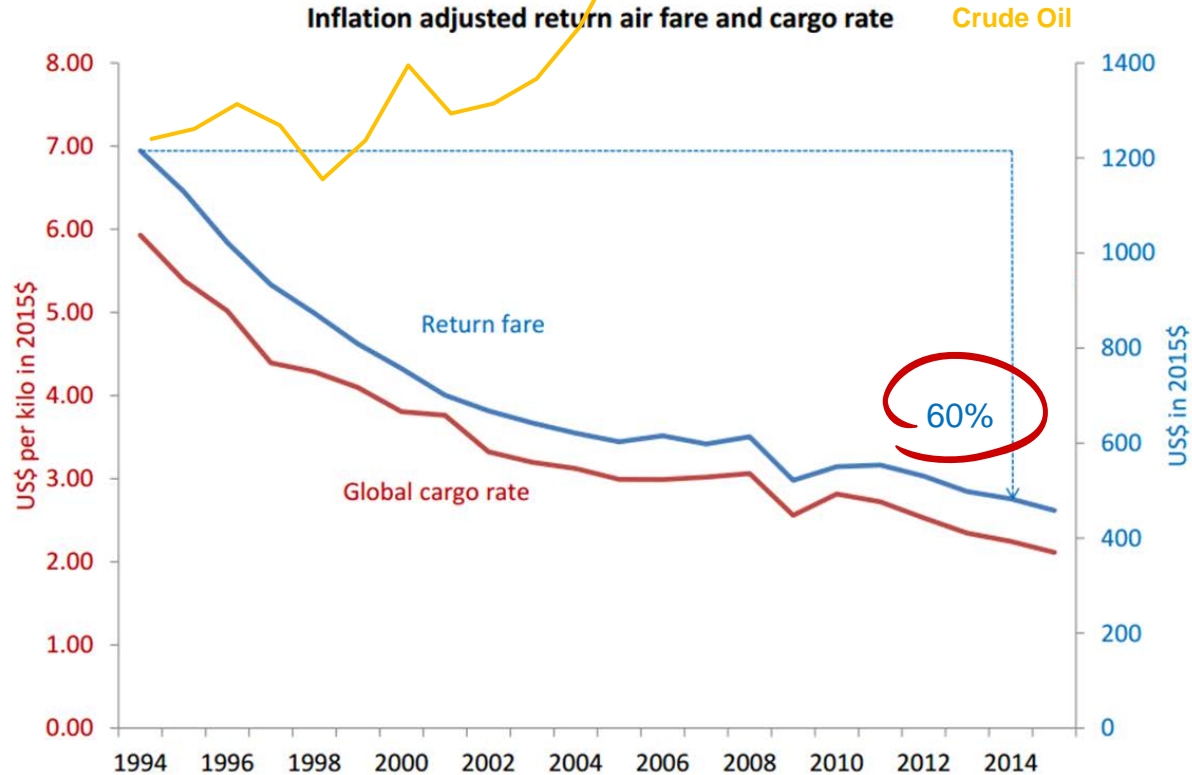
7x payment types

13x distribution systems

~ 46 billion combinations

3

Traveling by air is cheaper than ever

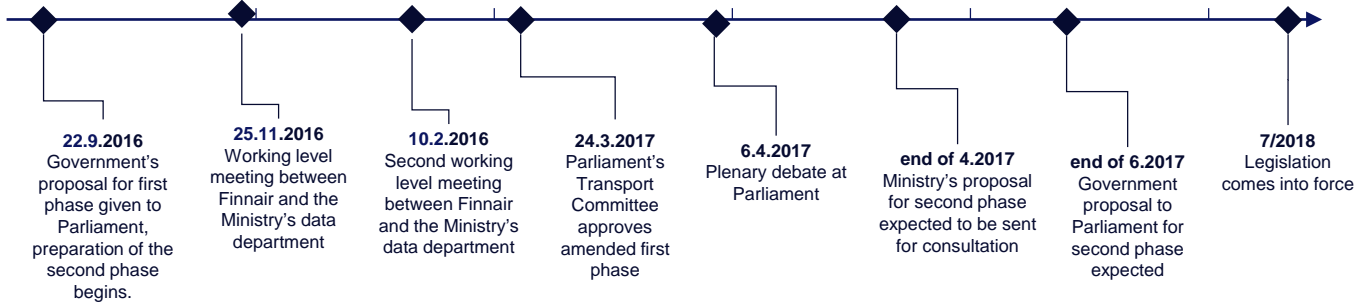


Source: IATA

SOURCE CRUDE OIL PRICE: US Dept of Energy

4

Liikennekaari (Transport Code) – open APIs become mandatory in Finland



First phase

- All transport modes: Opening of essential information
- Road and rail: Compatibility and openness of distribution
- Public procurement (=Hansel) only allowed from transport companies with compatible and open distribution systems.

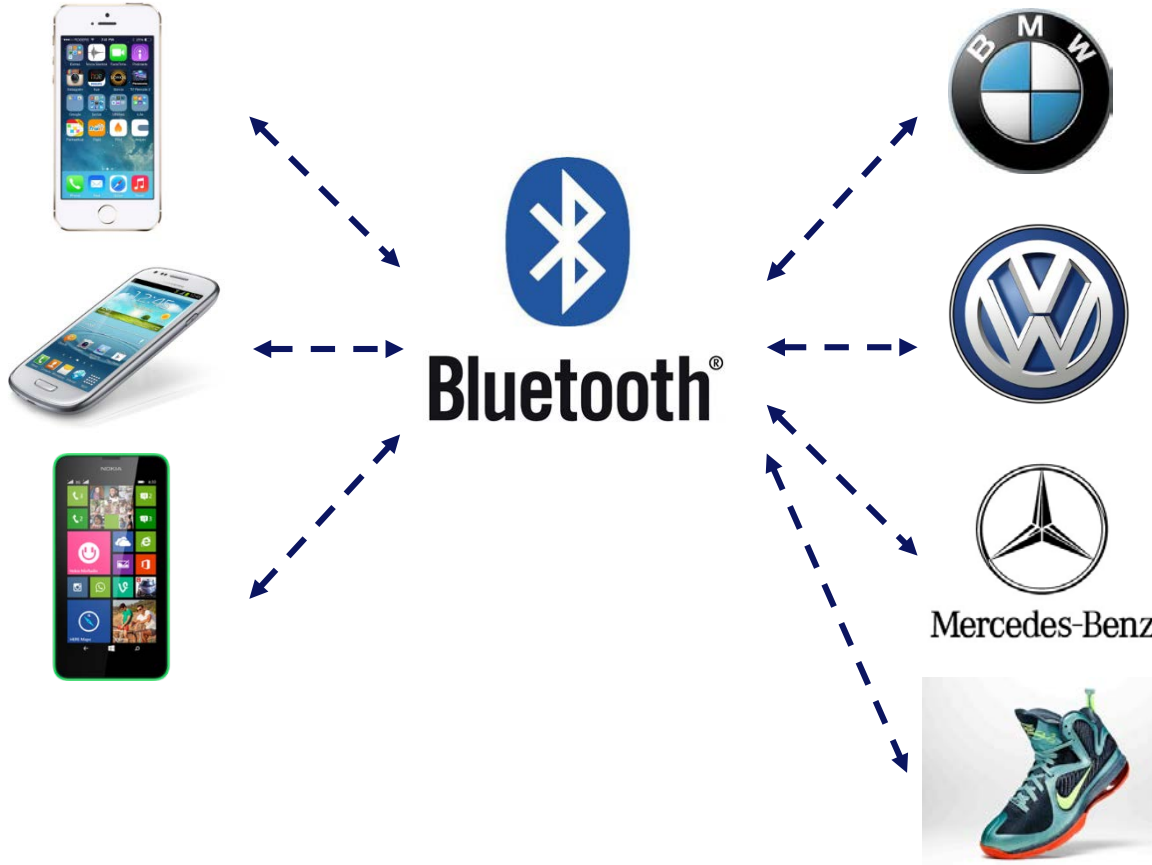
Second phase

- Aviation included



So we need an API!

And not just any API; but the NDC API



1. it's open
2. it's flexible
3. it will spur innovation
4. it's rich in content
5. it's bringing airline distribution to an internet age

We have connected two platforms to our NDC API



Launch of Finnair chatbot “Finn” –
our adorable cloud



We worked together with a startup on this
– easy, fun, innovative, fast



Successful implementation of facilitated
booking flows through Skyscanner –
technology works, expected to be a multi-
million € channel for us

Many more in the pipeline



Top 5 things that will accelerate
in a NDC world

1 Attribute shopping becomes easier



They know the customer

Booking.com | **Helsinki: 53 available properties** | 33 Hotels 6 Hostels 14 Apartments 1 Vacation homes

Sort by many parameters

Personalized deals

Recommended | Price | Review Score | Stars | Location | Ge Genius

Hellsten Helsinki Senate **★★★★** **Ge** **Value Deal** **Very good 8.1**
Eteläinen Suurpiiri, Helsinki
Score from 676 reviews

There are 2 people looking at these apartments.
Latest booking: 55 minutes ago

Studio Apartment (2 Adults) **-21%** ~~€ 103~~ **€ 81.81**
9 more apartments | Free cancellation available

Arthur **★★★★** **Ge** **Value Deal** **336**
Suurpiiri, Helsinki
Score from ...

There are 7 people looking at this hotel.
Latest booking: 9 minutes ago

Standard Twin Room **Breakfast included** **Just booked!**
12 more room types | Free cancellation available

SATO HotelHome Lapinlahdenkatu **★★★★★** **Ge** **Value Deal** **418**
Eteläinen Suurpiiri, Helsinki
Score from 558 reviews

Latest booking: 17 hours ago

Your Search
Helsinki
1 Night (Dec 25 - Dec 26)
2 adults
Change search

Filter by:

- Popular for business travelers
 - Wi-Fi (53)
 - Breakfast included (29)
 - Fitness Center (18)
 - Parking (43)
 - Airport Shuttle (5)
- Price (per night)
 - € 0 - € 39
 - € 40 - € 79
 - € 80 - € 119
 - € 120 - € 159
 - € 160 +

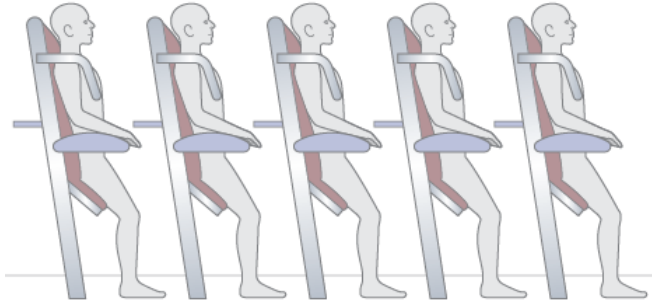
Filter by differentiating factors

View on the discount received

Reviews and user scores

2

Increased investments in CX



We are making flying great

3

For the agent: Improved ancillary processes

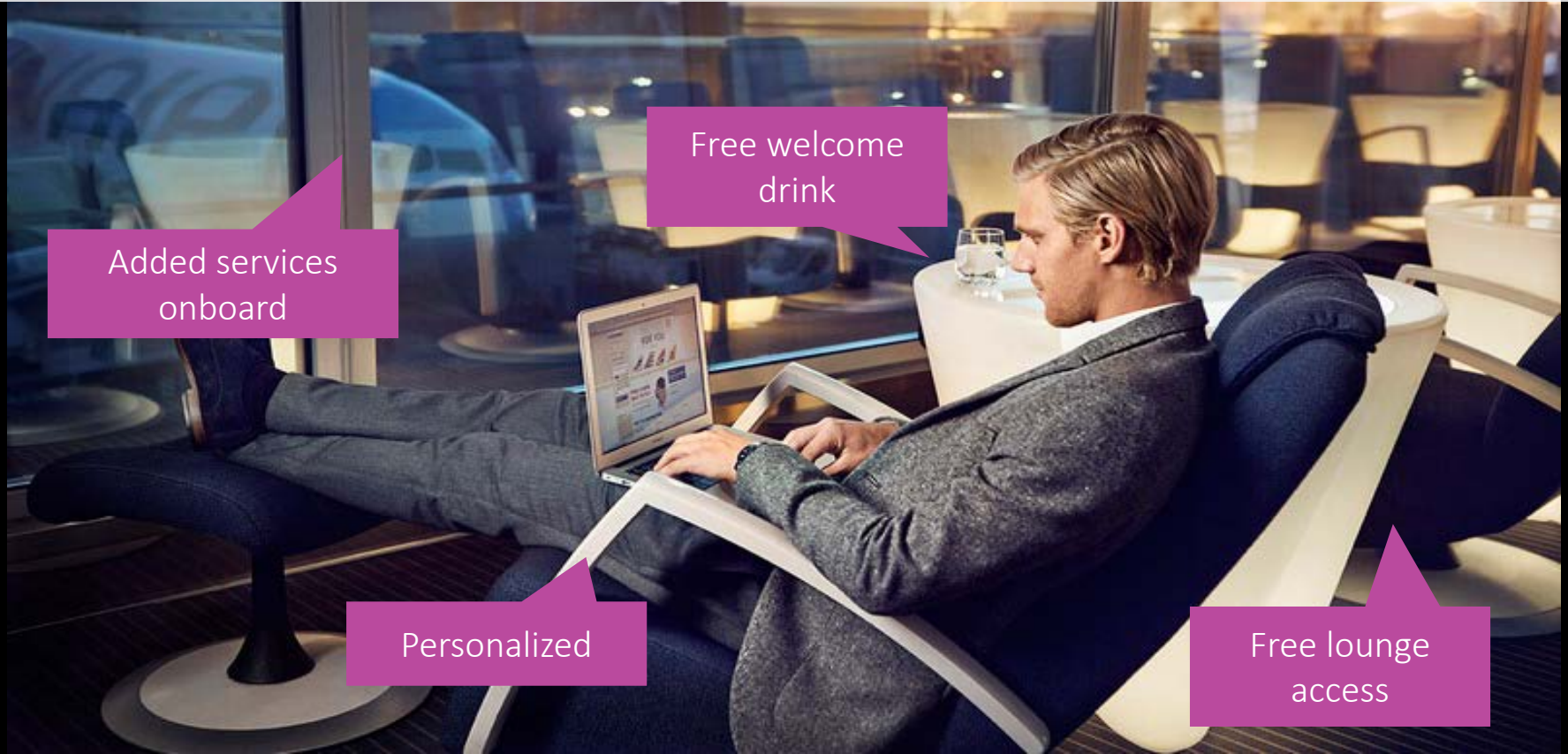


- All **airline content** becomes available in a fast and efficient way
- Easy access to **sell ancillaries or fare up-sell**
- Rich Content
- Easy and transparent access to **product information**
- Better ability to cater **different customer needs**: product quality, service level, schedules and price
- Increase **customer satisfaction** and retention



4

For the buyer: Same control on your spend, but dynamic fares & bundling to reward your travelers for their business



Added services
onboard

Free welcome
drink

Personalized

Free lounge
access

5 Startups, innovation, hackathons



NDC Hackathon SILICON VALLEY



CALIFORNIA 25-27 AUGUST AT LINKEDIN OFFICES

*Taking **AIRLINE**
RETAILING to
the **NEXT LEVEL***



Finn – our lovely chatbot



Host Airlines

UNITED  

Gold Sponsors

IBM  

Create success. Together

(caravelo (

Bringing airlines and customers together

IATA Data Symposium: Miami, November
2017





NDC Hackathon
Business traveler journey prize
\$5,000

- + Trip for two in Geneva, Switzerland, to present your idea at IATA Business Travel Summit on June 21-22
- + Incentive program to help grow your project

Old airline IT Systems



New customer requirements



Personalized Retailing



Actual Loyalty



Real time interaction



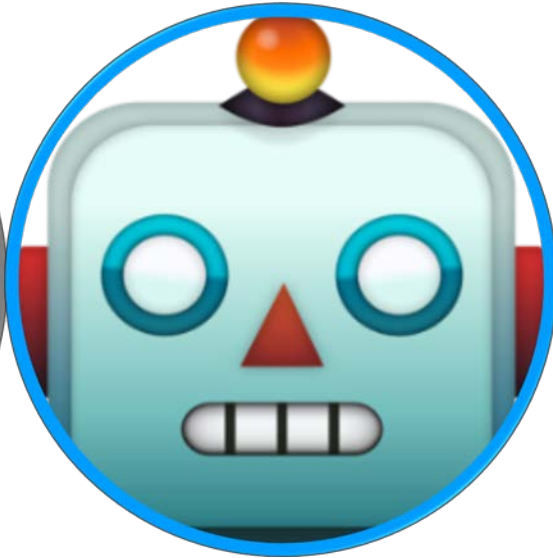
New customer channels

Fallible

Available 8 hours a day

Expensive to recruit, train and retain

Sometimes gets grumpy



Infallible

Available 24 hours a day

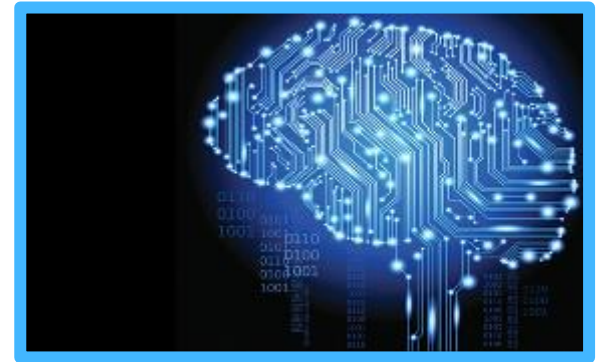
Relatively cheap to build or buy

Is the perfect personification of your brand

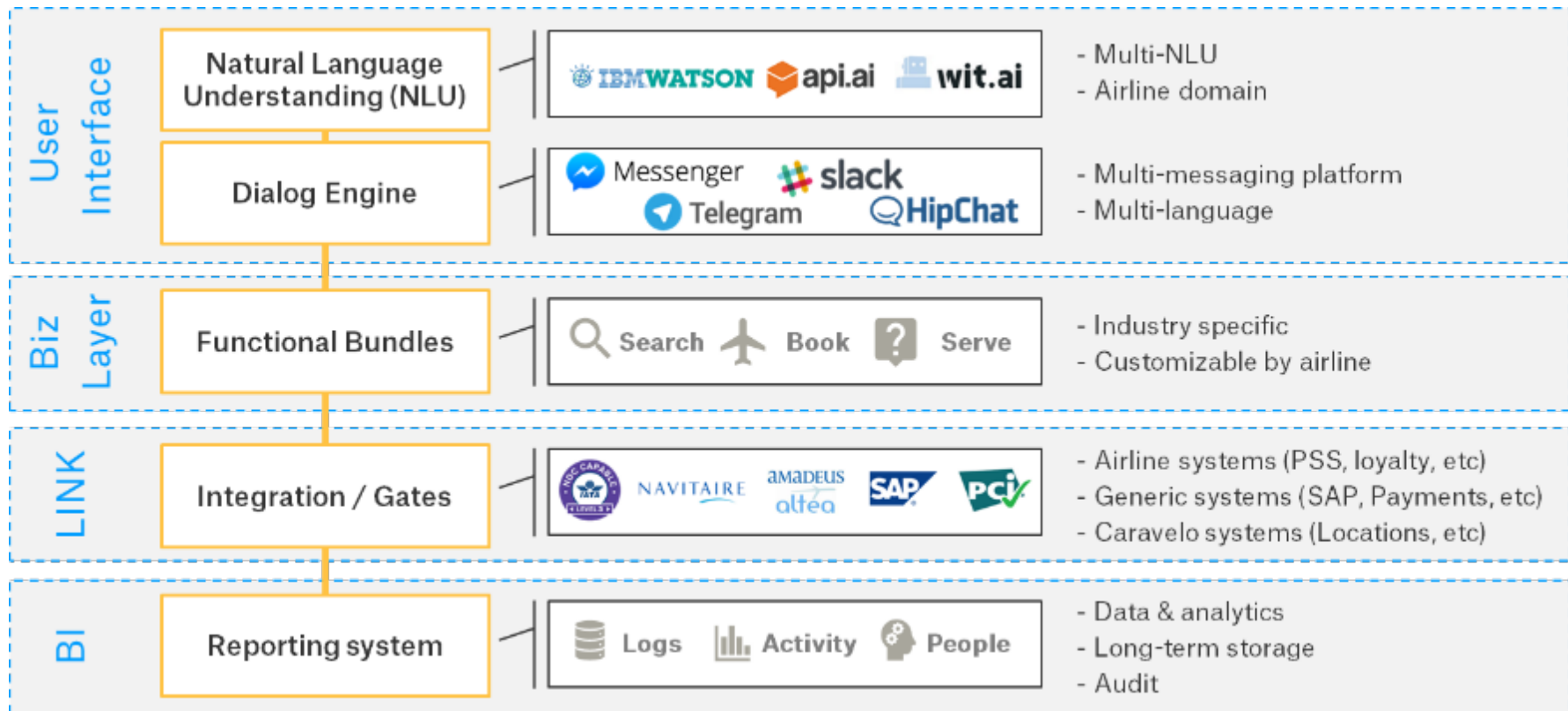
Still requires training



New Airline Systems



How our bots come to life



A.I. in Bots is about understanding



wit.ai



Dialogflow



IBM Watson



Machine learning

Specific airline model created

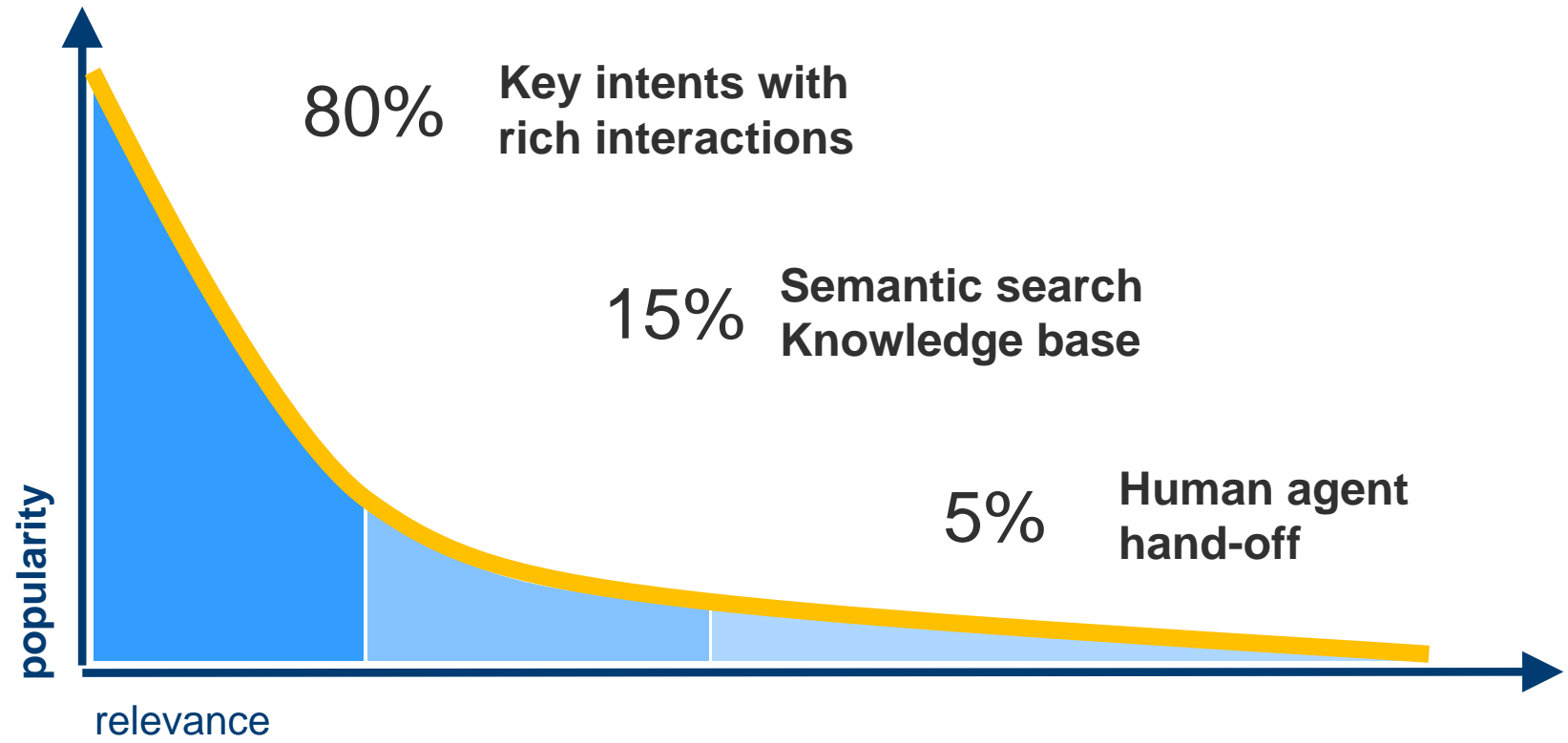
Human training



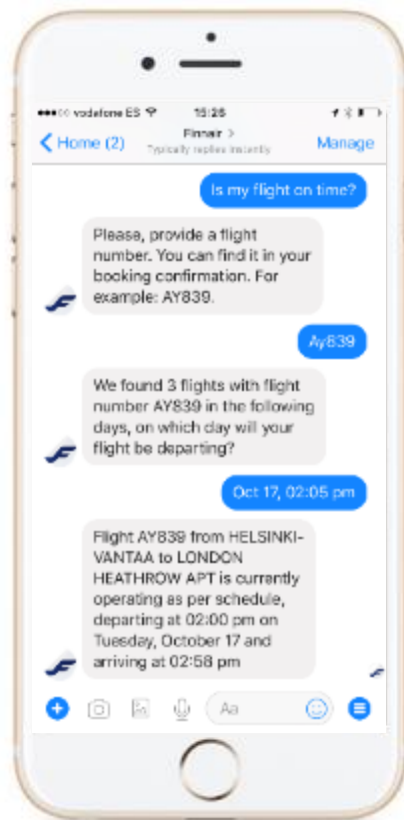
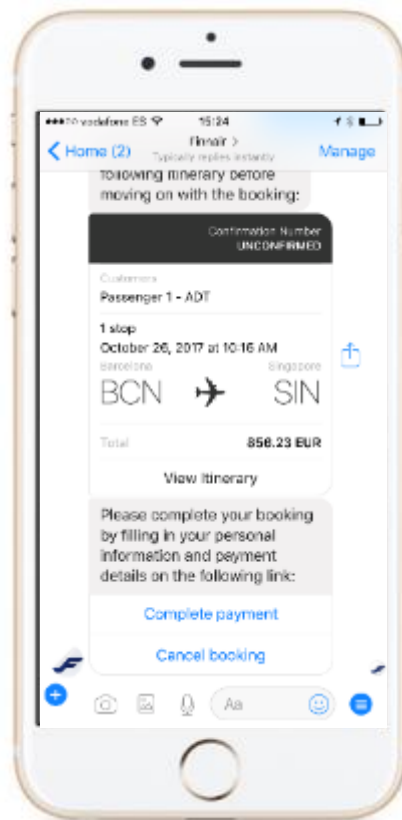
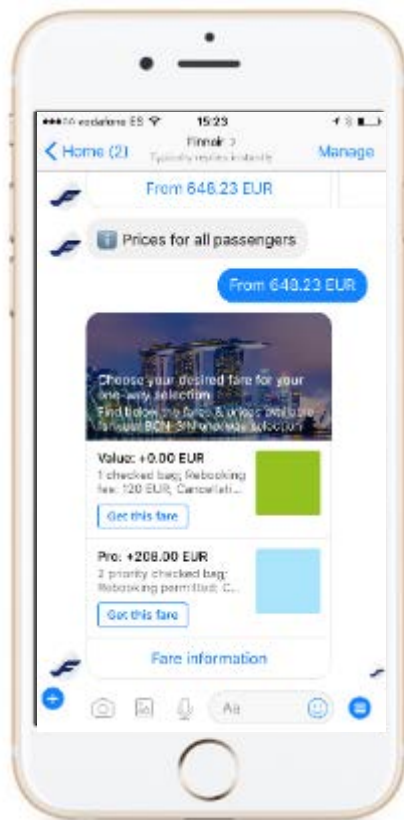
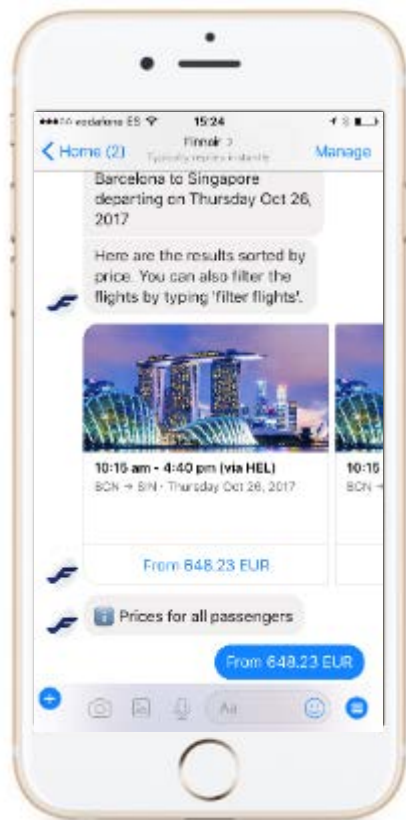
We have trained 250 intents:
25,000 utterances, machine
learning (ML) does the rest



Understanding drives Scale

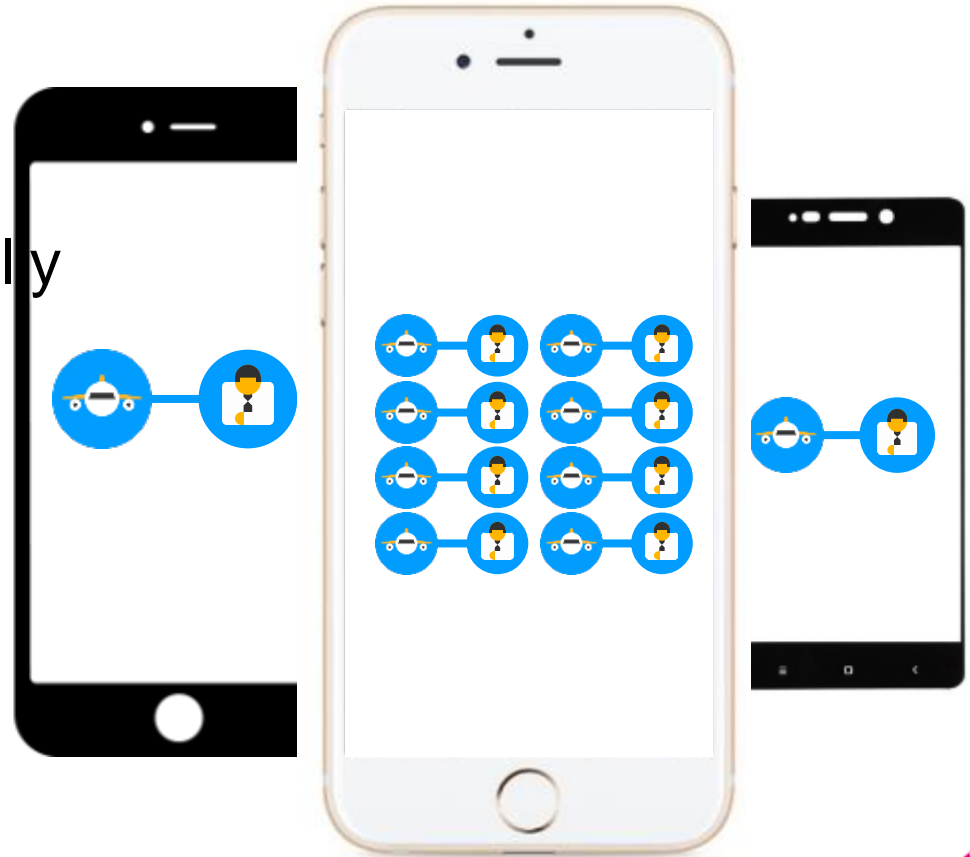


Understanding drives Utility



Understanding drives Insight

Imagine a one on one conversation with potentially every customer you serve



The future

More understanding, more utility, more insight

More languages, more platforms

What can bots do for internal customers?

Utilize the power of personalization





We turn messenger platforms into a channel for **servicing** and **retail**



Predicting Disruptions Using Deep Learning: Lessons Learned

Wayne Matrose

Senior Business Development Consultant
SITA



amadeus

PREDICTING DISRUPTIONS USING DEEP LEARNING AI LESSONS LEARNED



November 16, 2017
Wayne Matrose

SITA

Create success. Together

FRAMING OUR CONVERSATION

- Research & Discovery Mission
- Project Motivation
- Project Approach
- What We Found
- What Needs To Change
- Summary & Close



RESEARCH & DISCOVERY



SITA RESEARCH & DISCOVERY

DRIVING
INNOVATION

- SITA Lab: Harnessing the power of emerging IT
- Committed resource and funding for the industry's future
- Investing around 5% of revenue for R&D
- Innovation ecosystem of partners

“By working in partnership with our customers, SITA Lab is revolutionizing the passenger experience.”

Jim Peters, CTO, SITA

- Big data, business intelligence and predictive analytics
- Beacons
- Wearable computing
- Holographic GUI
- Biometrics & Identity Management
- Social booking & check-in
- API platform for air transport: developer.sita.aero
- Mobile boarding pass API
- Cabin crew tablets
- iPad kiosks
- Near Field Communication

CREATING SUCCESS



- 2017 FTE Supplier Innovation for ControlBridge Hololens (Helsinki Airport)
- 2017 FTE Supplier Innovation for Mobile Application integration with US CBP (Miami Airport)
- 2015 FTE award for Easyjet Host (SITA APIs)
- Winner: 2014 Wearable Conference (with Virgin)
- 2014 FTE 2 awards (with Virgin and AA)
- IT Company of the Year – Air Transport News 2013 Awards
- Aviation IT Service Provider of the Year – Africa (African Airlines Association) 2013
- Winner: 2013 PMI Atlanta Chapter Project of the Year Award
- Airport IT Solutions Provider of the Year, Frost & Sullivan, Asia Pacific 2011
- 2011 Global Customer Value Enhancement Award in border control
- SITA and Malaysia Airlines scoop CAPA IT innovation award
- Best IT Services Provider Emerging Markets Airports Awards (EMAA) 2010 & 2011 & 2013
- Tnooz THack Gold Medal 2011



PROJECT MOTIVATION

OUR INDUSTRY ISSUE



- 26 million flights in total



- \$25Bn global cost of delay
- \$3,971 per delayed flight



- 76.2% global OTP
- 51 mins average flight delay time

Data from the 2017 SITA report, "The Future is Predictable"

CHANGE REQUIRED



Flying on [redacted] without a delay is highly unlikely...Always delayed.. One reason I have not flown with them nearly as much this year!
[redacted]



FLIGHT-DELAYED.CO.UK Home

PROBLEMS WITH YOUR FLIGHT?

Was your flight delayed, cancelled or overbooked? You may be entitled to compensation of up to £ 434 per person.

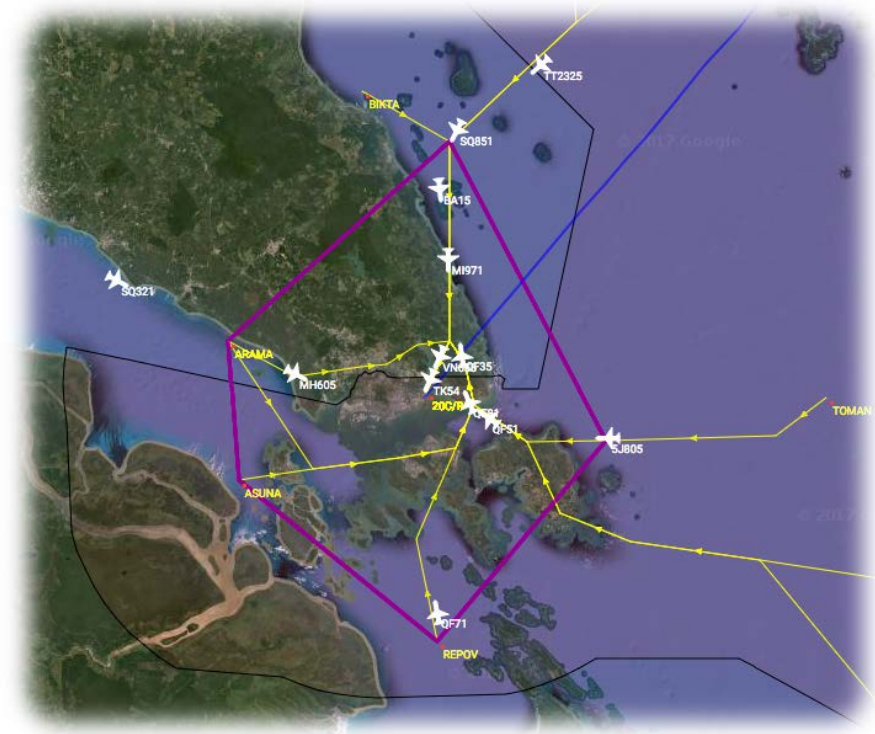
✈ Flight num 📅 Flight date [CHECK MY FLIGHT](#)

Rating: ★★★★★ 4.9 out of 5 stars



PROJECT MOTIVATION

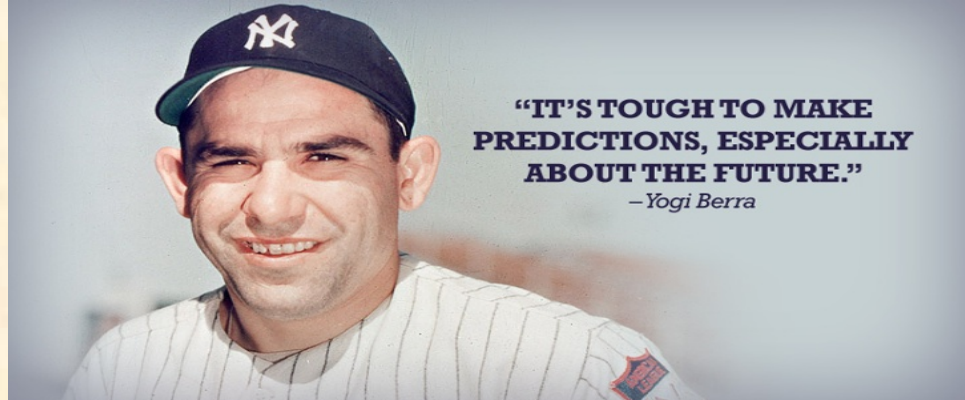
- Limited visibility on arrivals
- A-CDM not implemented
- Aircraft not visible until entering ATC-controlled area
- Notification 20 – 60 minutes before touchdown



HOW DO WE SOLVE THIS?



**PAST PERFORMANCE IS
NOT A GUARANTEE OF
FUTURE RESULTS**



**“IT’S TOUGH TO MAKE
PREDICTIONS, ESPECIALLY
ABOUT THE FUTURE.”**

– Yogi Berra



**BUT WHAT IF DEEP-LEARNING ARTIFICIAL
INTELLIGENCE DOES “THE MATH”?**



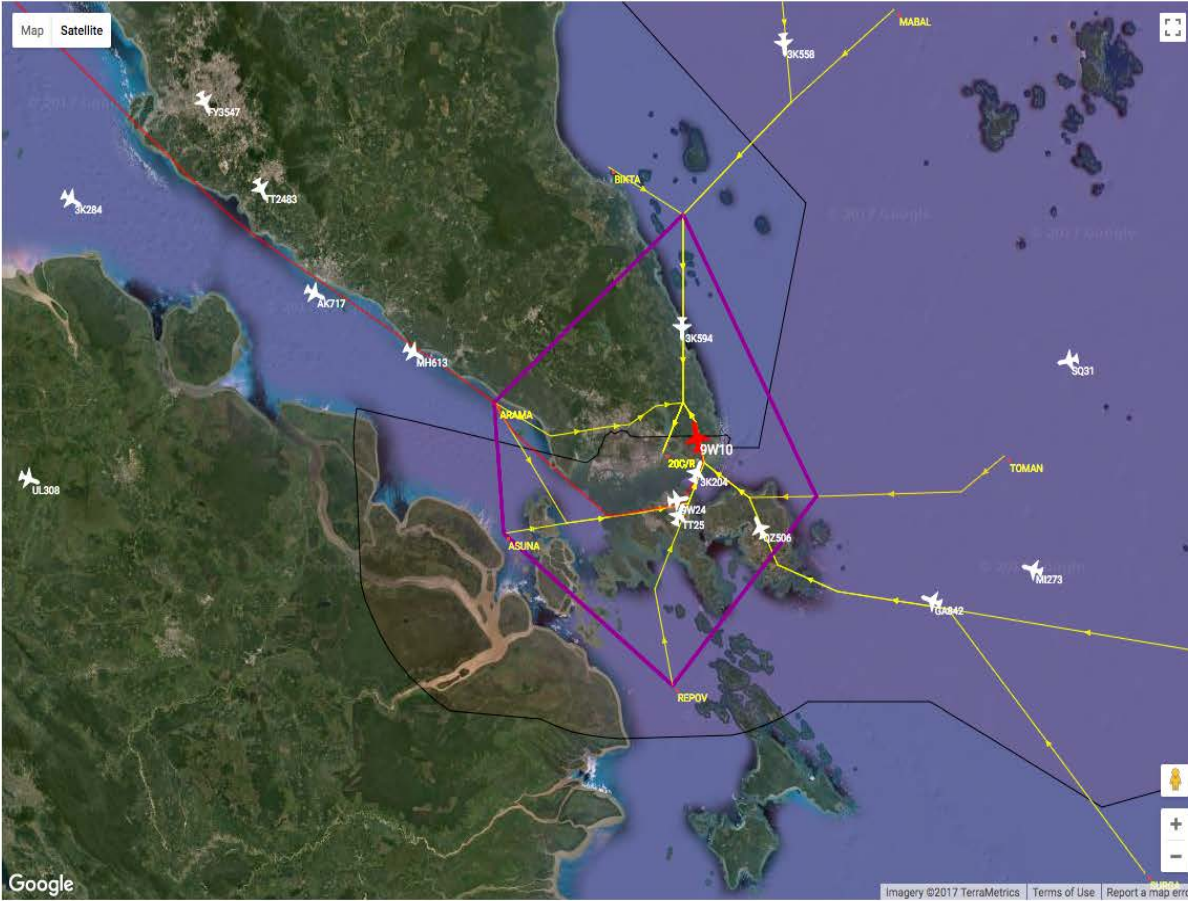
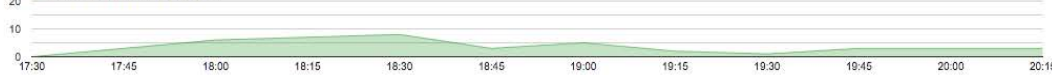
APPROACH

APPROACH TO DATA SCIENCE

- Full-Stack Programmers & Data Engineers
- “Beautiful Mind” Mathematicians
- Extensive ATI Domain Knowledge
- Communications & Visualization Expertise
- Innate Curiosity
- Full-Blown DEVOPS – Rapid Deployment & Continuous Integration



of Arrivals per 15-Minute Window



TIME

USER

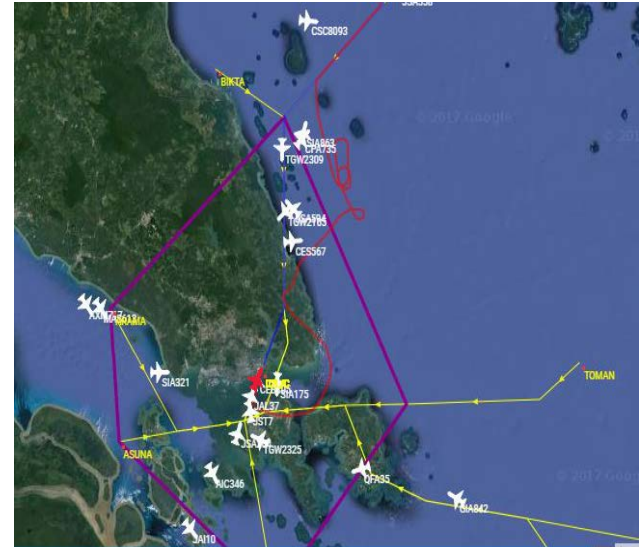
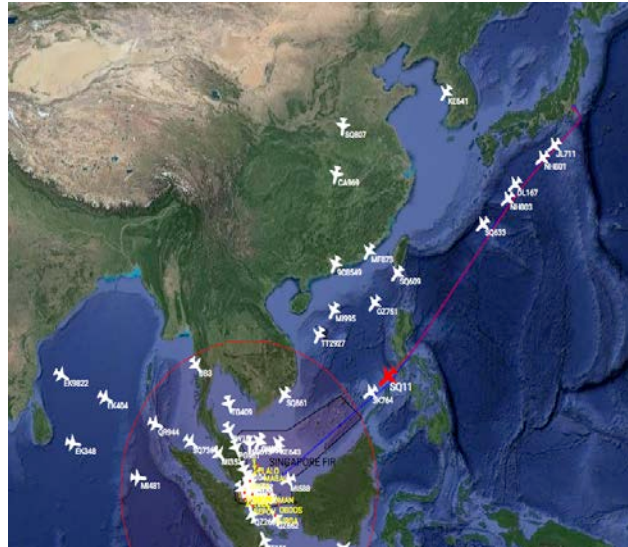
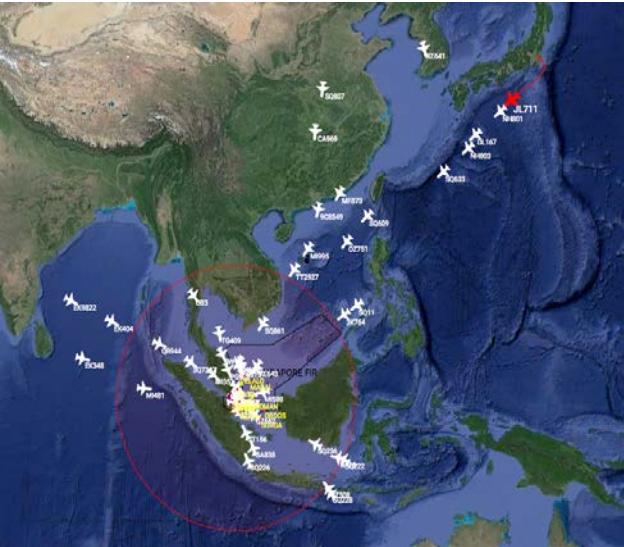
CODES

IATA



FLT#	AIRCRAFT	TAIL	TYPE	ORIG	OFF	STATUS	DATA	APPROACH	TOUCHDOWN	?	
UA336	PK8MU	B738	CUK	15:43:41	18:00:00	landed	REPVO1B	17:18:27	17:43:00	17:54:20	17:40:00
5Q321	9VSKS	A388	LHR	04:55:00	landed	ARAMA1B	17:14:14	18:10:00	17:46:32	17:41:54	
TT2105	9VTAT	A320		15:35:00	landed	BIKTA1B	17:24:19	18:10:00	17:47:40	17:44:10	
9W110	VTJWS	A333	BOM	12:51:44	on approach	ARAMA1B	17:26:42	18:00:00	17:53:10		
3K204	9VJSM	A320	CGK	16:35:00+	on approach	REPVO1B	17:32:07		17:57:41		
3K394	9VJSA	A320	PNH	16:26:31+	on approach	ELALO1B	17:22:09		17:57:49		
Q2506	PKAXS	A320	DPS	15:31:47	on approach	SURGA1B	17:21:06		18:00:12		
TT25	9VCFI	B788	MEL	10:09:00	on approach	REPVO1B	17:34:50	18:15:00	18:00:28		
9W24	VTJBH	B738		14:01:55	on approach	ARAMA1B	17:30:33	17:55:00	18:02:41		
G4842	PKGNC	B738	DPS	15:32:29	on approach	SURGA1B	17:30:54	18:20:00	18:09:40		
3K558	9VJSB	A320	SGN	16:40:01+	on approach	ELALO1B	17:36:43		18:11:14		
MI273	9VMGA	B738	MDC	15:01:35	on approach	OBDO51B	17:36:36	17:40:00	18:14:55		
MH613	9MFFF	B738	KUL	17:28:44+	on approach	ARAMA1B	17:48:09	18:25:00	18:15:26		
AK717	9MAFC	A320	KUL	17:19:38	on approach	ARAMA1B	17:50:36		18:19:12		
5Q31	9VSMQ	A359	SFO	03:05:21	departed	KARTO1B	17:47:45	19:00:00	18:20:39		
5Q252	9VSVI	B772	SYD	10:56:00	departed	OBDO51B	17:44:30	19:15:00	18:22:05		
3K510	9VJSI	A320		16:22:02+	departed	BIKTA1B	17:58:32		18:23:15		
PX392	P2PXW	B763	POM	12:25:08+	departed	OBDO51B	17:47:57	18:30:00	18:27:38		
TT2483	9VTRL	A320	IPH	17:24:00+	on approach	ARAMA1B	17:55:56	18:45:00	18:27:50		
5Q248	9VSSD	A333	MEL	10:56:00	departed	OBDO51B	17:50:56	18:30:00	18:31:17		
5Q286	9VSWQ	B77W	AKL	08:50:16	departed	SURGA1B	17:49:33	19:00:00	18:32:00		
5Q183	9VSTT	A333	SGN	16:48:00	departed	BIKTA1B	18:08:11	18:55:00	18:32:57		
3K284	9VJSL	A320		17:24:46+	departed	ARAMA1B	18:02:22		18:36:40		
MI515	9VMGG	B738	RGN	15:39:00	departed	BIKTA1B	18:11:05	18:50:00	18:38:22		
5Q977	9VSTV	A333		16:19:00	departed	BIKTA1B	18:11:30	18:55:00	18:39:07		
UL308	4RABN	A320	CMB	14:49:02+	departed	ASUNA1B	18:12:23	18:55:00	18:39:46		
FY3547	9MFYB	A772	IPH	17:19:43+	departed	ARAMA1B	18:15:26		18:42:29		
5L104	HSLUQ	B738	DMK	16:42:50+	departed	BIKTA1B	18:22:30		18:51:36		
Q2266	PKAZI	A320	CGK	17:11:47	departed	REPVO1B	18:24:12		18:54:06		
Q2662	PKAXR	A320	WAH	17:19:19+	departed	SURGA1B	18:20:23		18:57:04		
VN659	VNA365	A321	SGN	17:31:51+	departed	ELALO1B	18:28:08	19:25:00	19:00:59		
PG961	HSPGX	A319	USM	17:35:58	departed	BIKTA1B	18:40:52	16:50:00	19:02:10		

UNDERSTANDING WHERE THE DIFFICULTY LIES





WHAT WE FOUND

IT'S ABOUT APPLYING THE RIGHT APPROACH TO THE MATH



- Estimate which STAR will be used
 - Easy: **Simple Calculation**
- Current position to STAR-entry:
 - Moderate: **Simple Calculation**
- STAR-entry to touchdown:
 - Difficult: **Machine Learning**
- Runway direction/configuration change:
 - Extremely difficult: **Machine Learning**



TECHNOLOGY RESEARCH CONCLUSION

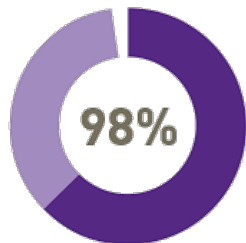


- Deep-Learning AI can make an appreciable dent in this ATi challenge
- Feature engineering is of paramount importance with AI
- Accuracy of and gaps in real-time situational awareness data can be a challenge
- Don't assume to know what data is important to the AI
- Black swan events will continue to be a challenge

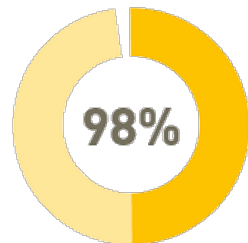


WHAT NEEDS TO CHANGE

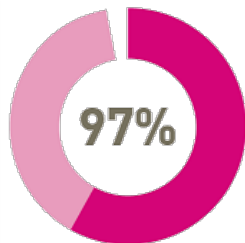
A COMPREHENSIVE SOLVE



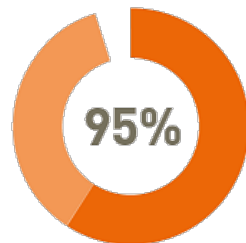
Operating common or well integrated systems



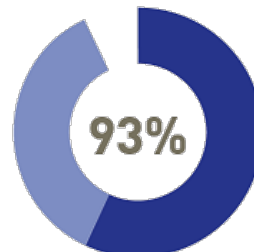
Disruption management best practices in place



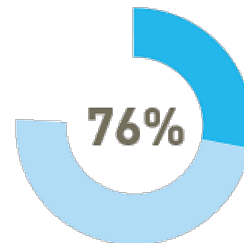
Sharing data quality and analysis



Improving data quality and analysis



Setting standards to enable better systems



Implementing sophisticated techniques to predict disruption



High Priority



Priority

% of airlines stating priority factors to enhance disruption management capabilities

Data from the 2017 SITA report, "The Future is Predictable"

CHANGE PROGRAMME COMPONENTS



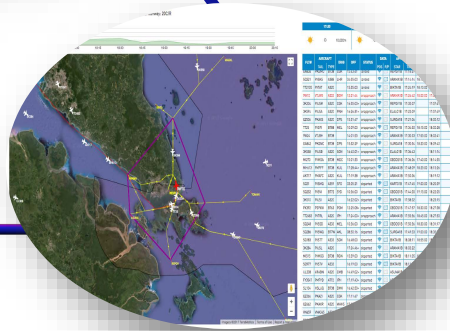
OPERATIONAL MODEL



WORK PRACTICE CHANGE MANAGEMENT



WORK ENVIRONMENT




TECHNOLOGY



SUMMARY

LET'S SUM UP

- We are at the precipice of a new chapter in ATI operational performance
- Deep-Learning AI will play a significant role
- Advancement in tools will get us only so far
- SITA stand committed and ready to do our part



Beware of low
flying aircraft

OUTDOOR SYSTEMS

THANK YOU



Networking Coffee Break

Thank you to our Sponsor

mcmillan





The Data Revolution Requires a New Mindset

Pascal Clement

Head of Travel Intelligence

Amadeus IT Group



amadeus



The data revolution requires a new mind-set

Aviation Data Symposium

Pascal Clement

Head of Travel Intelligence
Amadeus IT Group
15 / 16 November

It's a data revolution!

Differentiate or lose out to competition

- _ **Data-driven strategies** are now key to competitive differentiation
- _ **Innovative technology** is providing **competitive value** all along the customer journey
- _ Now Airlines must employ **data-driven approaches**
 - for more sophisticated Personalization, Intelligent Merchandising, Improved Operations, etc..
- _ Successful Airlines will harness **data analytics**
 - for their operational and customer experience transformation

Airlines must focus on value as a starting point

Example: Schedule Recovery

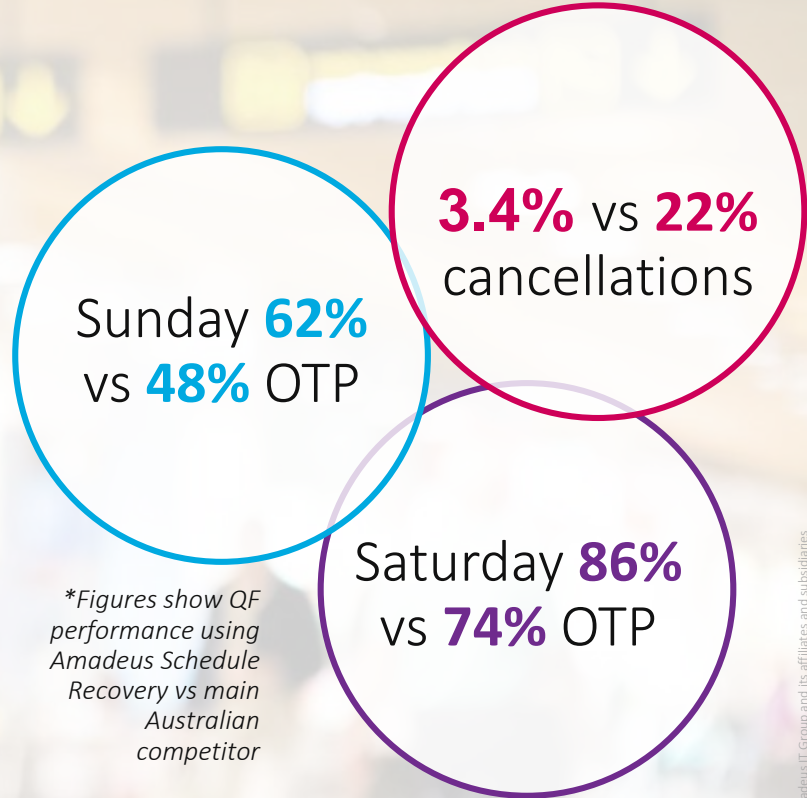
Use of data to intelligently predict outcomes is proving to be really valuable to airlines involved in recovering schedules.

Schedule Recovery uses **computational capabilities to automate many actions** making decisions faster and better, with a **direct impact on the bottom line.**

“Improving our operations with Schedule Recovery has been enormously successful from a competitive point of view for us, which translates into market share and dollars.”



Paul Fraser
Head of
Operations, Qantas



**Figures show QF performance using Amadeus Schedule Recovery vs main Australian competitor*



Moving towards continuous re-optimization

With a data-driven process, Airlines can **replace** ad-hoc processes that “fix” a situation through marginal changes.

Using data analytics, airlines can pinpoint re-schedule conflict with crew regulations, resulting in a **smoother and quicker coordination** between Ops Control and Crew Control.

Combining multiple data sources to great effect

...Imagine mapping **Passenger shopping behavior profiles** against highest spending passenger to define where you sit them in order to maximize revenue!

...or Product design, packaging offers to customers shopping for travel, or refining the **passenger experience** based on social media sentiment analysis.

The biggest value will come from **combining multiple data sources** to find correlations. This requires a **global Data Infrastructure!**



A profound transformation is needed

5 steps to help you move to a data-driven approach

- 1** Business experts profiles to include **analytical skills**
- 2** Re-think where data can modify, create or replace the processes
- 3** Usage of data will be for **everyone** not just the data team
- 4** **Management drive** is key so that data models yield better decisions
- 5** **Traveler engagement** must be re-thought

Connecting technology and data towards a competitive advantage

Our vision is to help our customers harness the power of data



Providing a **platform-as-a-service model** that frees you to build what you need quickly.



We **co-innovate with customers** using data and analytics creating new models.



Predicting the future is difficult as it is an experimentation journey. But with our insight, technology and experience, we can help airlines through this transformation and **succeed together**.

Thank you!

Find out how to get more value for your business from Data Analytics at our **Travel Intelligence Kiosk** at the Technology Track.





Customer Flow & Data

➤ Jeff Hickey

Software Engineering Manager, Alaska Airlines

➤ Matt Hahnfeld

Software Engineering Manager, Loyalty & Revenue Management,
Alaska Airlines



Customer Flow and Data

Creating Remarkable Moments for Alaska's Guests

Jeff Hickey, Engineering Manager
Matt Hahnfeld, Engineering Manager



What up Alaska?



Different works.
More flights. More rewards. More to love.

Alaska + virgin america DifferentWorks.com



Forbes | 2016
**AMERICA'S
BEST LARGE
EMPLOYERS**

POWERED BY STATISTA



Our Purpose.

Create an Airline People Love.

Digital

Alaska
AIRLINES

© 2017 Alaska Airlines - Confidential



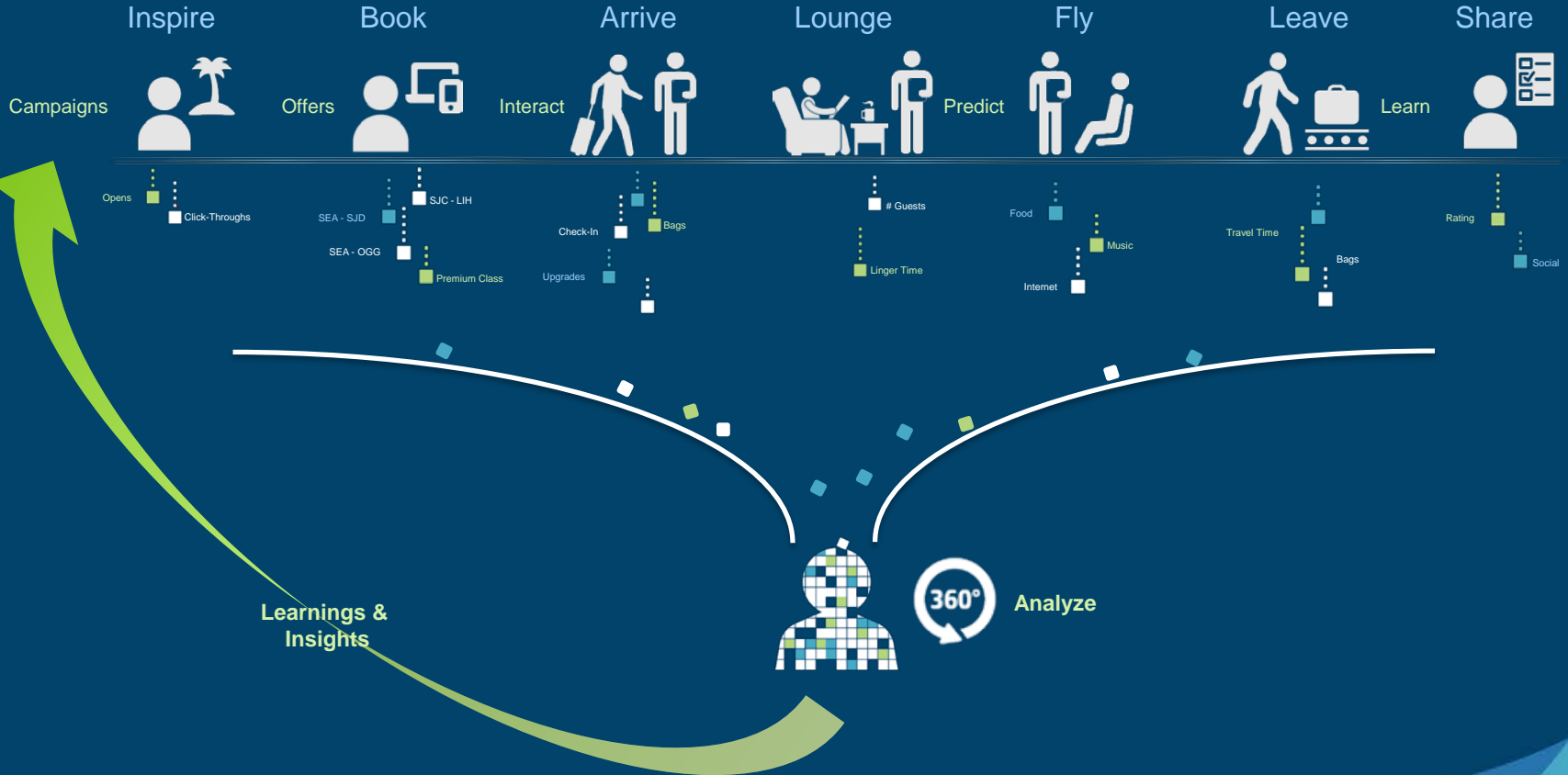


“Traditionally, analysts spent a lot of time developing reports for management to show them the things they already know. Big Data is all about using the company’s information to solve problems.”

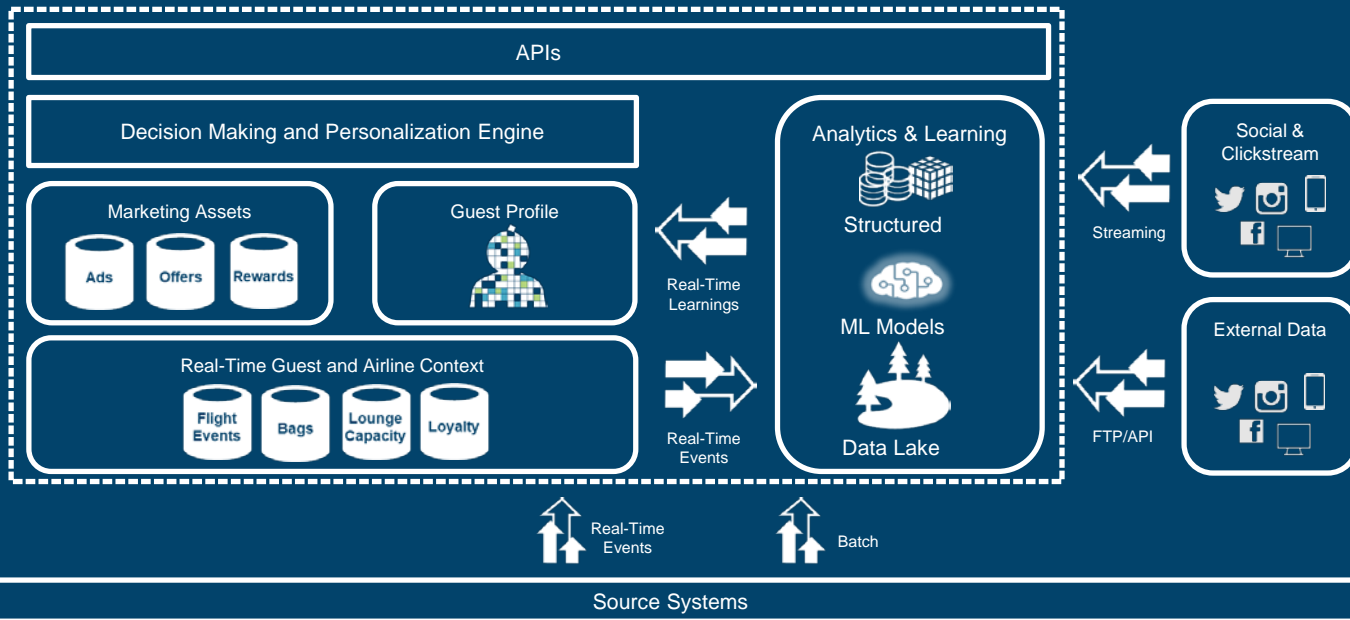
– Alaska Analyst



Remarkable guest experiences.



Remarkable guest platform.



10:47 AM Flight 3676 - 10/11/2017 Printer 42FAF4
 D-09-12 SEA - PAE 624QX ET75

****TRAINING MODE****

A		B		C		D	
AD3	AD3			AD3			
CHD	CHD						
AE4	AE4			AE4	AE4		
CHD	CHD						
AG3	AG3			AG3			
CHD	CHD						
AH5	AH5			AH5			UM
AH5	AH5			AM2	AM2		
AJ3	AJ3			AJ3			
AJ3	AJ3			AJ3			
AK3	AK3			AK3			
AL3	AL3			AL3			
CHD	CHD						
AM2	AM2			AM2			

Rodriguez, Jose
 Not Checked In
 Seat **12C**
 Group Code **AG3**
 Companions **12A,12B**

SWAP GUEST

Carrol, Don
 Checked In
 Seat **12D**
 Group Code **--**
 Companions **--**

SEA HI, Hayley Sign Out
 Q Input Flight No. 432, 97, 340

DEPARTURES ARRIVALS

2:00 am

AS 638 SEA → Las Vegas 2:00 pm N9

ON TIME TRACK FLIGHT

SEA 2:00 pm → **LAS** 4:29 pm **N9**

Departure Arrival Gate

SSRS	CONNECTIONS	STANDBY	UPGRADES	AIRCRAFT/CREW
FLIGHT INFORMATION		CREW		
Aircraft Type:	737-900R	Eric Steinhilber	CA	
Tail Number:	278	Renee Kilmer	FO	
Duration:	2hr 27min	Joel Wood	FA	
Capacity:	16/162	Lynly Wong	FS	
Open:	0/0	Donald Tucker	FC	
Checked In:	16/162	Kristi Frombach	FO	
Boarded:	16/162			
Aircraft:	←-6-7			

QX 1002 Portland 2:00 pm 3:55 pm CHD

QX 2100 Moscow 2:00 pm 3:55 pm CHD

QX 2002 Helsinki 2:00 pm 3:55 pm CHD

FLIGHTS TRACKED FLIGHTS SEARCH Q

Thank you.

jeff.hickey@alaskaair.com

matt.hahnfeld@alaskaair.com



Future of Technology

Slido.com #ADSTECH

Moderator

➤ Juan Ivan Martin, Head, Innovation, IATA

Panelists

- Didier Mamma, Global Head of Commercial for Travel Intelligence, Amadeus IT Group
- Rob May, CEO Talla
- Brendan McKittrick, CTO Accelya
- Ramki Ramaswamy, VP IT, Jetblue
- Matt Hanhfeld, Software Engineering Manager, Alaska Airlines
- Pierre-Yves Bénain, Portfolio Head e-Aircraft, Strategy & Marketing, Sitaonair





Wrap-up and Closing

Thank you to our Sponsor

amadeus





Networking Lunch

