Transforming business through data-driven personalization

19.06.2018
Marcel Kling, IATA Aviation Data Symposium 2018
Transforming business through data-driven personalization

Marcel Kling
Director
Program Lead Personalization
Program SMILE Lufthansa
The markets of aviation are changing
Liquid expectations are changing our customers
Digital entrants disrupt competitive arenas
...and we respond with a SMILE
Getting information off the Internet is like taking a drink from a fire hydrant.”

Michael Kapor

Customers deserve relevance
Companies need data-driven decisions

“...all others, bring data”

W.E. Deming
Digital demands better collaboration
SMILE is data-driven personalization every step on the go
The SMILE Customer Journey
Personalization of flight offers

Last Search
Personalization of flight offers

Personalized lufthansa.com
Personalization of ancillary offers
Lounge offer
Personalization of ancillary offers
Advanced seat reservation

Would you like more legroom, a window seat or to sit next to your loved ones? For your flight from Zurich to Barcelona, you can use "Manage my booking" to easily book your preferred seat for a surcharge from just CHF 12.00.

Your advantages:
- Secure your favourite seat in advance
- Easy to book online at any time
- Make your way to the plane in peace and with greater pleasure
- Up to 48 hours before your departure possible

Explore the advantages of the Advanced seat reservation.
Personalization of customer service
Customer Retention Score
Collaboration and knowledge-sharing at heart
Data Privacy means that we are facing the task of...
...delivering personalized offers and services
...and safeguarding our customer data
Key Takeaways
Decision first
Data second
Durchstich third
Keep on smiling!
SMILE Behind the scenes
Seat Upgrade Affinity

Channel: Online Travel Agencies, Direct Channels, Retailer, Global Chains, Local Chains, Others, To Regional Acct, Unknown

Time between booking & departure: 0 days, 1 day, 2 to 4 days, 4 to 7 days, 1 to 2 weeks, 2 to 4 weeks, > 1 month, > 3 months

Number of passengers: 1, 2, 3, 4, >= 5

Segment distance in miles: < 250, 250 to 400, 400 to 600, 600 to 800, 800 to 1100, 1100 to 3500, 3500 to 7500

Affinity: YES, NO

Insights
SMILE Behind the scenes
Seat Upgrade Affinity

<table>
<thead>
<tr>
<th>Channel</th>
<th>Time between booking &amp; departure</th>
<th>Number of passengers</th>
<th>Segment distance in miles</th>
<th>Affinity</th>
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</thead>
<tbody>
<tr>
<td>Online Travel Agencies</td>
<td>0 days</td>
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<td>&lt; 250</td>
<td>YES</td>
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<tr>
<td>Direct Channels</td>
<td>1 day</td>
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<td>250 to 400</td>
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<td>Retailer</td>
<td>4 to 7 days</td>
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<td>400 to 600</td>
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<tr>
<td>Global Chains</td>
<td>1 to 2 weeks</td>
<td>2</td>
<td>600 to 800</td>
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<tr>
<td>Local Chains</td>
<td>2 to 4 weeks</td>
<td>3</td>
<td>800 to 1100</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>&gt; 1 month</td>
<td>4</td>
<td>1100 to 3500</td>
<td></td>
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<tr>
<td>To Regional Acc</td>
<td>&gt; 3 months</td>
<td></td>
<td>3500 to 7500</td>
<td>NO</td>
</tr>
<tr>
<td>Unknown</td>
<td>&lt;= 5 months</td>
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</table>
SMILE Behind the scenes
Seat Upgrade Affinity

Insights

Channel
- Online Travel Agencies
- Direct Channels
- Retailer
- Global Chains
- Local Chains
- Others
- To Regional Act
  Unknown

Time between booking & departure
- 0 days
- 1 day
- 2 to 4 days
- 4 to 7 days
- 1 to 2 weeks
- 2 to 4 weeks
- > 1 month
- > 3 months

Number of passengers
- 1
- 2
- 3
- 4
- 5

Segment distance in miles
- < 250
- 250 to 400
- 400 to 600
- 600 to 800
- 800 to 1100
- 1100 to 3500
- 3500 to 7500

Affinity
- YES
- NO
The Future of in-Flight Duty Free is Around the Corner… and its Also About Data

Kian T. Gould
(Founder & CEO at AOE)
The World’s No.1 Travel Retail Digitalization Company

22 airports/airlines currently in rollout, tender or consulting phases
Global Travel Retail: Digitally Disrupted or Digitally Evolved?
Yesterday’s Travel Retail Shopping | Banking 100% on Impulse Purchasing
But is this still the reality of consumer behavior?
4.8 Bn. mobile devices yet only 4.2 Bn. toothbrushes worldwide
The average European spends close to 4h daily on their smartphone.
25% of all eCommerce sales are made on mobile in the USA.
In China it is already approaching 75%.
So is this today's (No-)Shopper?
The disruption has begun | A look at the global Travel Retail market
The 67 billion USD (2017E) global Travel Retail market is contracting

Europe
- 29.7% MS
- $18.8bn
- ↓7.9%

Americas
- 17.1% MS
- $10.9bn
- ↓7.5%

Middle East
- 8.9% MS
- $5.6bn
- ↓2.4%

Africa
- 1.2% MS
- $0.8bn
- ↓2.7%

Asia Pacific
- 43.1% MS
- $27.4bn
- ↑10.4%

2015 - 2016

Asia Pacific growth driven by Down-Town Duty Free +17.7% vs. Airports +1.5%

- Global Airport Shopping +0.4%
- Airlines -6.6%
- Ferries -2.7%
- Other Shops & Sales +7.3%

Source: TFWA
But the market is still growing!? Market yes, spend per passenger no...

### Passengers in (billion)

- 2014: 3.328
- 2015: 3.561
- 2016: 3.810
- 2017: 4.081

### Travel Retail market (in billion)

- 2014: 63.48
- 2015: 62.00
- 2016: 63.50
- 2017: 67.00 (E)

### Spend per Passenger in USD

- 2014: $16.4
- 2015: $15.5
- 2016: $15.0
- 2017: $16.0
Is this why some have give up already?
But look at the potential: Here is what these same passengers roughly spent when not traveling...

$540 online

$6,030 in Retail

SOURCE: eMarketer
Planned vs Impulse Purchase

Planned in advance: 71%
Bought on impulse: 29%

83% 79% 75%
44% 42% 40%

SOURCE: m1nd-set Research
The need for Omnichannel Digital Travel Retail

- **PRE-TRIP ONLINE TOUCH POINTS**
  - **34%**
    - Search for / see information about DF shopping online
  - **53%**
    - Make the decision to buy in DF before travelling
  - **40%**
    - Would like to do online DF shopping before the trip
  - **62%**
    - Book their flight directly online
  - **83%**
    - Find mobile check-in to be the most convenient

SOURCE: m1nd-set Research
The dominance of Online search

79% of today’s purchasing methods involve Online search

Source: Gartner 2018
So the consumers want to shop digitally, but most airlines still try to sell from carts...
Frankfurt Airport | How we started digitalizing the travel retail world….
Frankfurt Airport | Some promising signs of success

Customer Growth Rate

- 62% beyond business plan

Additional spend (by FRA Rewards members)

- +90 €

Repurchase rate

- 30%

Avg. Basket increase (online vs. offline)

- 230%

Avg. Cross-/Upsell

- 35%

300,000+ Loyalty sign-ups to-date
The webrooming effect in numbers...

For every 100,000 unique visitors to the airport e-Commerce platform, physical retail sales increase by 500-750k EUR.
The new Quaternity of Travel Retail

**CUSTOMER INFORMATION**
Airports/Airlines know much more about passengers than most retailers do

**PARTICIPATION**
in the international eCommerce growth

**INTEGRATED ADVERTISING**
Via Wifi, Smart-panels and InfoTerminals offer unique abilities

**DIGITAL DEVICES**
create new transaction and communication channels

**DIGITALIZATION**
of the travel journey creates new touchpoints

**CUSTOMER EXCELLENCE**
Attractive digital offers and services form a unique customer experience
The future of Airline E-Commerce is at your fingertips
A sophisticated, simple and engaging shopping experience.

**Personalised recommendations**
Based on browsing/purchase history and preferences

**Targeted visual banners**
Based on flight/destination booking profiling
Keeping the checkout process short and effortless.

Flexibility and choice that consumers expect.
Leverage the power of mobile payment.

Reward loyalty with instant Miles earnings
No Wi-fi? No Problem. Keep browsing.

Contextual notification
...at the airport
...when connected to Wi-Fi
...up to 30 minutes before boarding

Control and Choice
...choose categories
...manage data settings

Full browsing
...of cached and downloaded content
Welcome Ms. Rodríguez, we wish you a pleasant flight.

Wi-fi on board this flight is complementary whilst using the Emirates App.

Search: Perfume

Result: Chanel N°5 Perfume for 125.00

Adds to cart

Sees a special offer: Gucci Bloom fragrance

20% Off

TR Exclusive

Available on this flight

Adds to cart

Selects lounge delivery

Selects delivery to seat

Pays with Apple Pay

One-Touch Miles Sign-up

Browses the in-flight catalogue

Scans what she likes to add to her shopping list, for later...

In-flight, in-app.
Bridging the gap.
App meets printed catalogue.
With image recognition.
Provide instant and seamless gratification by providing instant earn & burn with Miles.
Continue the journey In-Flight
To provide a first class, seamless shopping experience for every airline customer, at any time and during every stage of their travels.

Personalized, contextual, innovative

Website

Mobile

IFE

With or without connectivity

At home, at the airport, in-flight, at destination

Online Shopping is about...
The OM³ Suite | Digitalizing the entire non-aviation revenue stream

Passenger Experience

- E-Commerce Marketplace
- Personalized Offers
- Fast track
- Parking

On-Premise Fulfillment

- Mobile Shopping

Non-Aviation Revenues

- VIP Services
- Loyalty
- Lounge Access
Everything Mobile – Everything at your fingertips

Touchpoints

Voice

Mobile

API

Airline Marketplace

Shopping

Services

Payment

Services

Retail / Shopping

Loyalty

Fast Track

F&B Ordering

Flight Data

Hotels

Parking

Maps

VIP Services

Lounge

Rental Cars

...
What would you think are best-sellers in digital travel retail?
Frankfurt Airport sold 5 premium Leica cameras online in February 2018 alone.
Singapore Airlines makes more profit selling wine fridges than actual wine.
Heathrow might be the only airport that can sell you a 35k JAEGER-LECOULTRE online.
While our TCP technology at Auckland Airport fulfills $150+ million in downtown purchases.
With the highest ever single watch purchase exceeding $1.2 million!
Is it surprising many brands don’t want to be sold like this anymore?
Digital won't replace physical travel retail, but it's where future growth lies…
Questions?
kian@aoe.com
Maximizing Quality Revenue at a Customer Level

Brandon Meyers, CRO, ADARA

@meyersb brandon.meyers@adara.com
Why Are We Here?

There’s a clear need for advancement in a company’s ability to measure and optimize yield on a customer level.

How Do We Better Inform Both LT Customer Loyalty and ST Revenue Maximization?

How Do We Maximize Quality Revenue on a Customer Level?

What’s Our Share of Wallet?
WHAT DOES A GDPR FUTURE LOOK LIKE?

Brands and marketers are held responsible to do more with less

Customer level engagement is the answer not the aftermath

Success comes through: clarity, value, and diligence
Maximizing Revenue: It’s More Than Just Selling Seats

TOTAL YIELD: $500

- Unknown traveler
- Limited Search & Trip Data
- Unknown avg purchase

Compares dest. brands, price through aggregators
No additional purchases
No engagement

Buys through OTA
Complains about leg room on Twitter
Upgrades to economy plus after manual research

Unknown traveler
Limited Search & Trip Data
Unknown avg purchase
Customer Level Connections Drive Business Value

85% of travel consumers say personalized content has affected their purchase decisions
*Source: Accenture Report 2017

61% of marketing execs feel that they lack a clear roadmap to getting personalization right.
*BCG study - May '17

PERSONALIZATION PROVIDES...

50% Reduction in acquisition costs
*Source: HBR - Nov 16

5 - 15% Lift in revenues

10 - 30% Increase in marketing efficiency
Barriers To Quality Customer Connections

- Lack of data, analysis, & technology
-Disconnected media and marketing solutions
-Incomplete measurement & view of effectiveness
Introducing
Customer Yield Intelligence

Customer Yield Intelligence is an evolutionary business approach that enables travel brands to drive quality revenue and enhance yield at a customer level.
Core Pillars of Customer Yield Intelligence
Companies Need an Integrated Approach to Maximizing Revenue at the Customer Level

- Data / Customer View
- Omni Channel + Content Personalization
- Measurement & Analytics

CYI
(Learn, Act, Measure)

- Improved Customer Experience
- Higher Incremental Revenue
- Increased Loyalty
- Improved Marketing Efficiency
Maximizing Revenue At A Customer Level

- Platinum Status with Airline X
- Dest./Activity/Alt. Dest. Search Data
- $600 avg. purchase size
- High ancillary propensity

**TOTAL YIELD: $750 + CLV**

- Targeted across dest. search with upfront pricing
- Offered free lounge access
- Receives activity suggestions in dest.
- Buys brand direct (offered bonus miles)
- Joins loyalty program + redeems miles
- Purchases lounge access + bus. class upgrade
Examples In Market

Using Data & Technology To Achieve Personalization at Scale

Develop smarter, more effective media buying models and scale across all touchpoints in the customer journey.

Combined contextual 1st & 3rd party data to create a predictive model with granular layers.

More than twice as many bookings at same spend, and saw 40% lower cost per booking.
Examples In Market

Using Data & Technology To Make The Booking Experience More Effective

- Leverage 1st & 3rd party data to better understand each step of traveler journey
- Adapted displays & product offerings put in front of travelers to drive direct-booking
- Grown loyalty program to 69M+ members and seen record downloads of app
Examples In Market

Using Data & Technology To Deliver A Personalized In-Flight Experience

Check-in Recognition Program
- Equipped attendants with mobile seat-recognition tool

Identify details of passengers’ loyalty status, in-flight buying habits and insight into past experiences with the airline

Exceeded high-quality traveler’s expectations. Lift in loyalty & revenue
Individual Traveler Engagement Meets Enterprise Impacts

- Deeper Customer Understanding
- Engage And Persuade More Quality Travelers
- Measure And Maximize Revenue At The Customer Level
Story Flow / Narrative

1) Customer Journey (Limitations to Inventory Based Approach)
2) Value of Driving Customer Level Connections
3) Barriers To Quality Customer Connections
4) The Solution: Introducing CYI Approach
6) Outcomes of An Integrated Approach To Customer Level Connections
7) Customer Journey (Customer Level Approach)
8) Where We Are Headed
How do you maximize quality revenue at a customer level?

- The travel industry is undergoing a radical shift due to technological and data advancements which are changing customer behaviors and expectations.

- The airline industry is shifting from inventory to individuals as revenue maximization and yield optimization drivers. A winning strategy is no longer based on simply filling inventory. It is based on filling inventory with the right person, at the right time, at the right price to maximize the value beyond a single transaction and drive yield from lasting customers - not perishable inventory.

- ADARA’s CRO, Brandon Meyers addresses how to leverage a shared data & people-based approach for smarter decision making at the customer level.
Personailization Stats

78% of U.S. Internet users said personally relevant content from brands increases their purchase intent. -[Link](#)

Increasing personalization in more channels can increase overall consumer spending up to 500%. -[Link](#)

Personalization reduces acquisition costs as much as 50%, lifts revenues by 5-15%, and increases the efficiency of marketing spend by 10-30% -[Link](#)

(96% of marketers agree that personalization helps to advance customer relationships)

88% think their prospects and customers expect a personalized experience

The majority (55%) of marketers feel that the industry is not currently getting personalization right

Only 30% are very or extremely satisfied with their current personalization efforts

66% of marketers are seeing a 1-20% improvement in their KPIs from personalization -[Link](#)
Travel marketers should benchmark their digital spend as a share of their total budgets against the industry-wide average of 61% as well as their competitive set. Are you ahead of – or behind – your competitors?

As online booking has grown, so has digital ad spend. Well over half of all travel marketing spend is now going to online channels. The industry-wide average for the U.S. travel market is 61%
“Airlines will also have to deal with privacy and data security, a hot-button issue in the EU—where the European Parliament recently enacted new data protection rules—and elsewhere. Customers’ privacy concerns are paramount; customers must see the benefit of giving up their personal information and know that the data is secure. If they see a clear benefit from an enhanced relationship, they will be more willing to share information. The burden will be on the airline to take a careful and progressive approach, to show tangible benefits early (and avoid any gaffes), and to make sure that the value customers see outweighs any possible concerns about the amount and sensitivity of the collected data. This is a difficult balance to strike, especially for international carriers, because customer attitudes toward privacy and security (not to mention local laws and regulations) vary significantly among jurisdictions.”
Personalization through Machine Learning

June 21, 2018
Agenda

- Analytics at United
- ML & Personalization
- Case Study
Machine Learning at United Airlines

CEO

C-Suite

Chief Digital Officer

Business Units

Enterprise Analytics

IT
Enterprise Analytics Projects

- WiFi
- Gate Bags
- Cargo
- Maintenance Logs
- Upgrades
Our Tech Stack

**Modeling**
- Python
- R
- H2O.ai
- Spark MLlib

**Data Processing**
- Hive
- SQL
- Apache Spark

**Data Storage**
- Hadoop
- Teradata
- Microsoft SQL Server
Airlines are Complex
Personalization Drives Revenue and Satisfaction
Personalization 101

- Flight Attributes
- Passenger Attributes
- Other Passengers
The Model Life Cycle

- Design
- Develop
- Test
- Analyze
…or Life Cycles

- Design
- Develop
- Test
- Analyze

- Design
- Develop
- Test
- Analyze
Personalized Search

Why: Seamless experience

Where: United.com search

How: Collaborative Filtering
Personalized Destinations

- **Why**: Inspire travel
- **Where**: Homepage, United.com search, email, online advertising
- **How**: Collaborative Filtering
### Personalized Ancillaries

**Non-Member**

- **Bundle offer 1**
  - 1. Economy Plus®
  - 2. Premier Access®
  - + $205 per person
  - Select

- **Bundle offer 2**
  - 1. Economy Plus®
  - + $255 per person
  - Select

**Former Elite**

- **Select Offer**
  - 1. Economy Plus®
  - + $205 per person
  - Select

- **Choice Offer**
  - 1. Economy Plus®
  - 2. Extra checked bag
  - + $290 per person
  - Select

- **Why**: Simplify choice
- **Where**: United.com and mobile app booking path
- **How**: Bayesian Model, GBM
Conclusion

- Machine learning is becoming a fundamental tool at United

- Personalization is helping us improve the customer experience and drive incremental revenue
Sales is an integral part of a Commercial group and represents one of several levers to influence the acquisition of revenues.

The Passenger Sales organization in most airlines is charged with the responsibility of acquiring revenue by managing the business to business (B2B) relationships with third party sellers, resellers, and buyers of airline seats.

Buyers are traditionally defined as Corporate Managed Accounts (Banks, Telecom, Government, etc.).

Resellers are wholesalers, leisure and group accounts where contractual commitments are made to purchase airline seats.

Sellers are defined as travel agents, Online Travel Agents (OTA) any other distributor who actively sells airline seats directly to consumers.

Revenue acquisition directly with consumers is normally held within the commercial group under e-commerce, direct marketing, and loyalty programs, Call Center, and City Ticket Offices (CTO).
Sales Data in Channel Management

Marlene M. Garcia

June 20, 2018
Berlin, Germany
My Profile

39 years
in the airline industry

33 years
of Sales experience and responsibility

Active member of DDS Customer Advisory Group

Previous ARC Board Member

Graduate of Florida International University Business School

• Leadership roles
• Development of Sales Programs (Agency/Corporate)
• Development of Employee Incentive Programs
• Sales and Leadership Training
• Development of Innovative Sales Solutions and Data Sources
United Airlines
Our success depends on 87,000 people working together for one cause

- 13,000 Pilots
- 25,000 Flight Attendants
- 10,000 Technicians
- 28,000 Airport Personnel
- 10,000 Management
We fly more than 150 million people every year

The equivalent of ten Tokyo’s

Coming from 56 countries

Flying 46 billion miles

Enough to fly a volleyball team to Pluto and back
We are making rapid progress toward our goal of being the best airline for operational reliability.
We are pioneering new products for our customers
We serve our customers through our strategic hub locations

United Airlines’ Hubs

- **San Francisco**
  - Best gateway to Asia Pacific
  - Booming local tech market

- **Los Angeles**
  - Second largest market in the country
  - Profitable international gateway

- **Denver**
  - United’s most profitable hub
  - Ideal geographic location

- **Chicago**
  - Third largest market in the country
  - Ideally positioned for connecting traffic

- **New York / Newark**
  - Largest market in the country
  - United has only true connecting hub

- **Washington D.C.**
  - Strong international position from nation’s capital

- **Houston**
  - Strong gateway to Latin America
  - Energy capital of the world

- **San Francisco**
  - Best gateway to Asia Pacific

Top Metro Areas by GDP

- **New York** 1,603
- **Los Angeles** 931
- **Chicago** 641
- **Houston** 503
- **Washington** 491
- **Dallas** 486
- **San Francisco** 432
- **Philadelphia** 411
- **Boston** 397
- **Atlanta** 339

Source: Bureau of Economic Analysis
But we’re not resting on our laurels: we’re investing in new planes, new markets, and a world class product.

<table>
<thead>
<tr>
<th>New Markets</th>
<th>New Planes</th>
<th>New Products</th>
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<tr>
<td>Houston</td>
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<td>United Polaris</td>
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<td>Buenos Aires</td>
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Sales Industry
Data & Challenges
Most Used Sales Airline Industry Data Sources

- MIDT
- DDS
- QSI
- ARC
- BSP
- TCN

Flown Revenue
Data Challenges and Gaps

Booking vs. Ticketed
Data Gap
Monetized Value
Cost
O&D – Marketing/Operating vs. Issue
Robust Data
Data Processing
Airline enterprise business intelligence

- Revenue Management
- Sales
- Distribution Planning
- Other Divisions
- Market Analysis
- Portfolio Management
- Sales Programs and Tools
- Sales by Distribution Channel
- Ad Hoc Reporting
Business Intelligence
Sales engagement has changed

THEN

Consultative
Collaborate

Dashboards
Mobile
Solution tools

DATA

INTERNAL SITE

INTERNAL SITE (CRM)

EXTERNAL SITE (PORTAL)

Performance Insight

Business Insight

UNITED JETSTREAM

salesforce
Building a professional online presence. Be present, be visible, be found.

Learning about our industry, our customers, and more via social channels.

Engaging with our customers and industry experts to broaden and grow relationships.

Creating and sharing relevant and engaging content to inform and inspire our followers.

**Building relationships. Sharing knowledge.**

**ENGAGING WITH OUR CUSTOMERS ON SOCIAL MEDIA**

**BUILD**

**RESEARCH**

**ENGAGE**

**SHARE**
About me

Moscow University Math Department
Russian Presidential Academy
London Business School

Finance
Online travel agency
Ecommerce chain
Aeroflot Russian Airlines
Aeroflot Group 2017 results & overview

50.1 mln passengers (+15.4% y-o-y)
130 222 mln RPK (+16.2% y-o-y)
158 unique destinations in 52 countries

domestic and charter mid-price hubs in VKO & LED

national carrier premium product hub in SVO

LCC short and mid-haul based in VKO

Source: Aeroflot website
Definitions

Definition for mathematicians:

“orthogonality is the generalization of the notion of perpendicularity to the linear algebra of bilinear forms”

Definition for business:

“new data that can be linked to already existing data set to improve understanding of the underlying processes and make better informed decisions”

The usual

Data sources
- PNRs
- DCS
- SAP
- DDS IATA

Channels
- Direct online
- Direct offline & callcenter
- Agencies online
- Agencies offline
- TMC

VS

Metrics

Periodic reporting & KPI
AdHoc reports
The challenge

Data sources
- PNRs
- DCS
- SAP
- DDS IATA
- Loyalty data

Channels
- Direct online
- Direct offline & callcenter
- Agencies online
- Agencies offline
- TMC

VS

Channel Performance
- New routes planning
- O&D profitability
- Cost of distribution
- Competition response
- Disruption plans

What new data do we need to make better decisions?
You are here
The galaxy of orthogonal data

- PNRs
- Airport data
- Price history/volatility
- Google Analytics
- Bank data
- Yandex
- Baidu
- Customer location data
- DDS IATA
- RM data
- Loyalty CRM
- SAP
- Mail.ru
- Application data
- Weather
- Economic data
- Social networks
- PNR history
New office example with orthogonal data

- **SZX**: Shenzhen Bao'an International Airport
  - Large airport with
  - Population: 12.7mm
  - Distance: 40km/25mi

- **HKG**: Hong Kong International Airport
  - New bridge (2018)
  - Population: 7.4mm
  - Distance: 40km/25mi

Numbers do not reflect real life case, for demonstration purposes only.

Source: Google maps, Google flights
New office example with orthogonal data

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
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<tbody>
<tr>
<td>Hong Kong</td>
<td>3179</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>786</td>
</tr>
<tr>
<td>Macau</td>
<td>205</td>
</tr>
</tbody>
</table>

Where: HKG: Shenzhen Bao'an International Airport

Numbers do not reflect real life case, for demonstration purposes only.
GDS history


- American Airlines
- Japan Airlines
- SABRE
- TravelSky
- Galileo
- Travelport
- Google
- Reservor
- ReserVec
- Air Canada

Source: companies websites
When did we start collecting or using data?

Collecting – from the very beginning.

At least last 10 years of data available.

Are we using it? Is it in our DNA? How much data do we have?
Data is the king

From sharing to buying data?

What data should we buy?

What data do we need?

Have you asked your agents\TMCs about data?
Data lifecycle

Identify new data source

Acquire new data

Clean, check and link

Use new data

Share and benefit

Retire\recycle data source
Other things to consider

NDC

One order

GDPR

IATA Airline Data Model

Oracle Industry Data Model

Source: Oracle, IATA, EU GDPR
Thank you!

Konstantin Demanov
Deputy Sales Director
Aeroflot Russian Airlines
kdemanov@aeroflot.ru
Passenger Distribution & Sales Panel: 
Sales Data Usage in Effective Channel Management

Moderator:
- Marc Rosenberg, President, STRATACONNEX and retired Air Canada VP Sales and Distribution

Panelists:
- Marlene M. Garcia, Director Sales Information Systems, Sales, United Airlines
- Konstantin V. Demanov, Deputy Director of Sales, Aeroflot Russian Airlines
- Emre Pekesen, SVP Sales and Network Planning, Pegasus Airlines
Effective data usage in sales channel management, and future of channel management

Berlin, 19th of June 2018
Last Century.....
A world of Legacy Carriers
And Traditional Travel Agencies...
And no less traditional travellers....
Beginning of the new Century until now...
Legacy Carriers still...

But some guys have joined the party....
TMC, Travel Agents, OTAs, Airline.com
Some figures...

- 80+ Million pax per annum
- 130+ Million pax per annum
- 50+ Million pax per annum
- 50+ Million pax per annum
- 40+ Million pax per annum

1.2 Billion Pax!
What happened?
Data Analysis....
Wherever I see people doing something the way it’s always been done, the way it’s ‘supposed’ to be done, following the same old trends, well, that’s just a big red flag to me to go look somewhere else.

Mark Cuban
Looking to the future...
Oups... sorry... wrong slide..
Are We In Continuous Evolution Or Beginning Of Revolution
A few questions

Are the Travel Air Bookings declining on Travel Agents Sales?

YES?

NO?

YES?
“Travel agency air bookings up 6.3% for Amadeus”

Thursday, March 1, 2018
Posted by Travelweek Group
A few questions

What is the % of Online Travel bookings in the US?
Answer

30%

Article “The Relationship Between Airlines and Online Travel Agencies (OTAs)”, Yieldr, Ryan D'Souza
A few questions

What is the % of Online Travel bookings in China?
“Distribution in China Is Almost Entirely Through OTAs”

77.5%
A few questions

How many Millennials intend to use the services of a Travel Agent in the next two years?

17%?

18%?

More%?
“Millennials Are Relying on Travel Agents in Record Numbers”

33%
A few questions

What is the % of Bleisure Travel in Business Travel?
According to Booking.com, 49% of business travellers have extended their business trips to further enjoy their destination.
What the future holds....
Last questions....

What does it mean for Airlines?
What does it mean for TMCs?
What does it mean for OTAs
New Business Relationships
New offer
New Technology
Thank you for your time
Data analysis - getting the full picture with simulation

Pains and gains in data analysis - Are you seeing the full picture?

Dr. Michael Frank, Opremic solutions GmbH
We cannot get the full picture from data alone

- Bookings with different pricing?
- On-time performance with different blocktime calculation?
- Maintenance costs without predictive maintenance?
A test case is usually a very bad idea ...
A classic analytical approach

Real life → Forecast → Results

Real data → Calibration → Analytical model

Simulation, Time series, Regression, ...
What is the problem with this approach?

Real data → Calibration → Analytical model A → Results A

Analytical model B → Result B → Analytical model C → Results C
Take them all!

- Expected results
- Real data

Aggregation

Results A
- Analytical model A: 70%
- Analytical model B: 20%
- Analytical model C: 10%

Result B
- 70%
- 20%
- 10%

Results C
- 10%

Aggregation
Example – analysing new pricing structure

Scenario A
- Willingness to pay estimators
- Customer segment A
- Customer segment B
- Customer segment C

Scenario B
- Willingness to pay estimators
- Customer segment A
- Customer segment B
- Customer segment C

Scenario C
- Willingness to pay estimators
- Customer segment A
- Customer segment B
- Customer segment C

Booking class distribution
Example – analysing new pricing structure

<table>
<thead>
<tr>
<th>Customer segment A</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer segment B</td>
<td>Volume</td>
<td>Price</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer segment C</td>
<td>Volume</td>
<td>Price</td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Booking class distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
</tr>
<tr>
<td>18%</td>
</tr>
</tbody>
</table>

June, 19th, 2018

IATA Aviation data symposium
Summary

– Not every question can be answered with historical data. What-if questions are typical examples.
– Test cases do not deliver statistically valid results.
– In order to answer questions analytical models are necessary.
– These models are calibrated to find one parameter set. Parameters with a less accurate fitting are in most cases ignored.
– Modern hardware and big data methods enable to use more parameter settings for evaluation.
– Outcome of different models can be aggregated based on probability theory.
– Result is an analysis with a far more accurate picture about effects.