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# Smart Airlines Baggage Management and improving Customer Experience

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eBIW

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# Agenda

- 1 Baggage Handling Processes and Costs
- 2 Data Consolidation
- 3 IOT, Streaming and Smart Tracking
- 4 Maximizing Customer Satisfaction



# Agenda

- 1 Baggage Handling Processes and Costs
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Chicago  
Airport  
Lines this  
summer,  
up to 3  
hours wait  
time, to  
board a  
domestic  
flight!

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# 23.1

million

Checked bags.

**Mishandled** (delayed, damaged, or lost)

In 2015

\* Source SITA

BAGGAGE TRIAL  
21<sup>st</sup> May 2012 15:00-17:00  
As part of BAA Heathrow's preparation for the Olympic and Paralympic Games this area is being used for a baggage trial. BAA Heathrow is taking place and does not affect check in procedures for your flight. Please continue to follow the displayed on the flight information screens. BAA Heathrow wishes to thank you for your cooperation.  
Heathrow

# Costs to Airlines

Break-down of the mishandled bags

<b>NORMAL HANDLING</b> cost / bag = \$10	<b>NORMAL OPERATING</b> cost / passenger = \$185
<b>DELAYED BAG</b> cost / bag = \$100	<b>LOST BAG</b> cost / bag = up to \$3300



Source: SITA

In addition **erosion of Customer Satisfaction** due to mishandled bags

## Baggage Related Satisfaction

- Among the two-thirds of passengers who check baggage for their flight, **52%** indicate they had to **wait 15 minutes** or longer to receive their baggage, among whom satisfaction is 711, compared with 751 among those who experience a shorter wait time. •
- Satisfaction among passengers who **pay for checked baggage** has **improved steadily** during the past five years to 700 in 2015 from 637 in 2011.
- The above data implies that other expanded services can be sold to passengers around baggage, provided it reduces/eliminates wait and has lower delays/damages to the bags.

[http://www.jdpower.com/sites/default/files/2015057%20NA%20Airline\\_%20\(FINAL\).pdf](http://www.jdpower.com/sites/default/files/2015057%20NA%20Airline_%20(FINAL).pdf)

# How Airline Baggage Handling Systems Work

- A baggage-handling system has three main jobs:
  - Move bags from the **check-in** area to the departure gate
  - Move bags from one gate to another during **transfers**
  - Move bags from the **arrival gate** to the baggage-claim area
- The measure of a successful baggage-handling system is simple: Can the bags move from point to point as fast as the travelers can?
- If the bags move slower, you'll have frustrated travelers waiting for bags, or bags failing to make connecting flights on time.
- If the bags move too fast, you might have bags making connecting flights that passengers miss (is that important?)

<http://science.howstuffworks.com/transport/flight/modern/baggage-handling.htm>

# Transparency is #1 Aviation Impediment

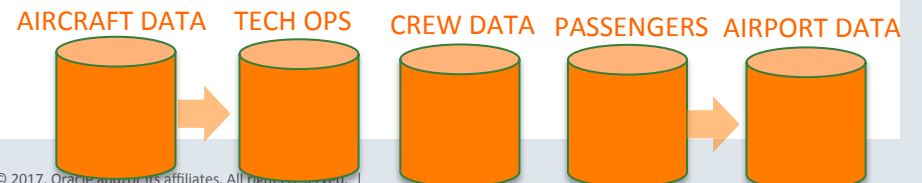
## Data Silos, Situational Awareness, Interoperability

IoT can provide shared, real time awareness & coordination



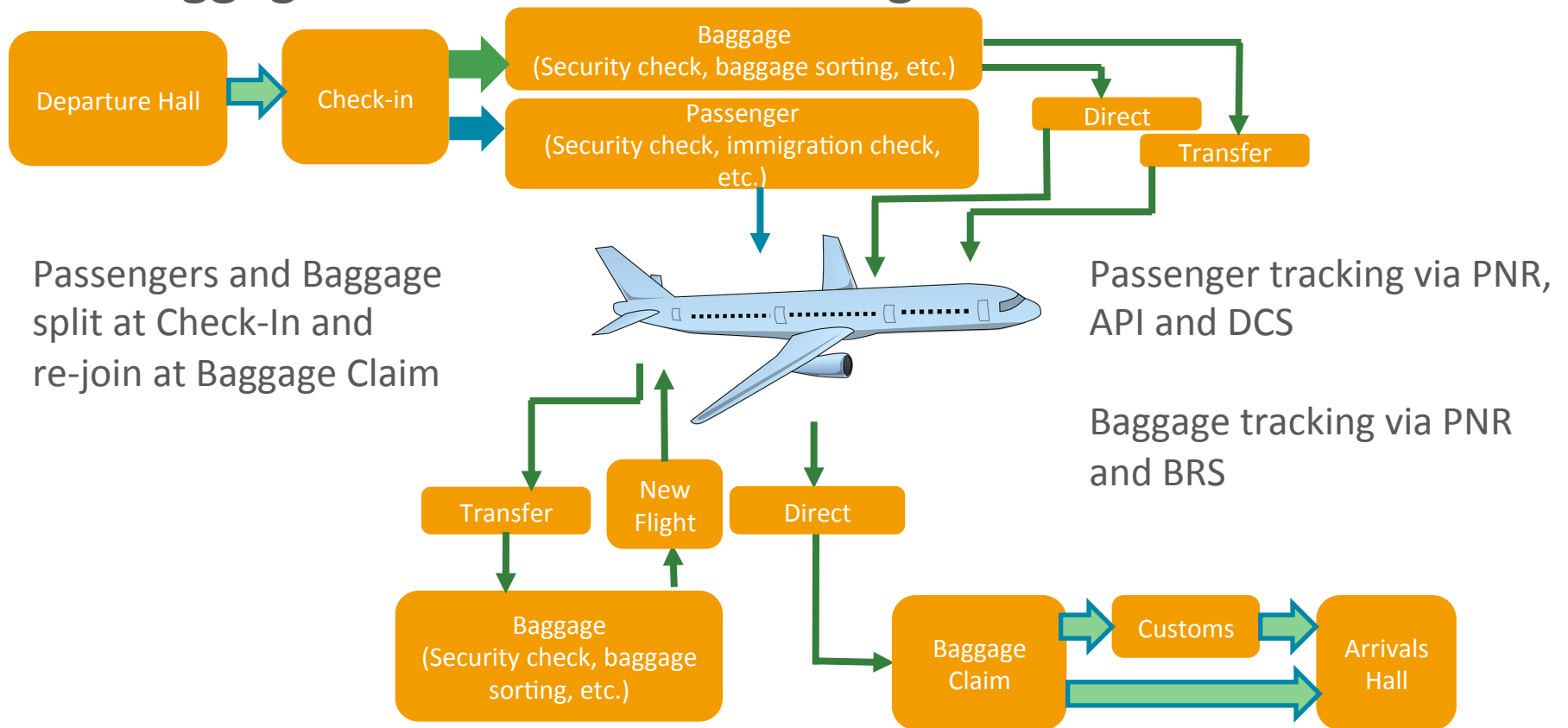
Historical Data Silos have made for a Dysfunctional Ecosystem

Improvement happens at the Interface between Ecosystem Partners



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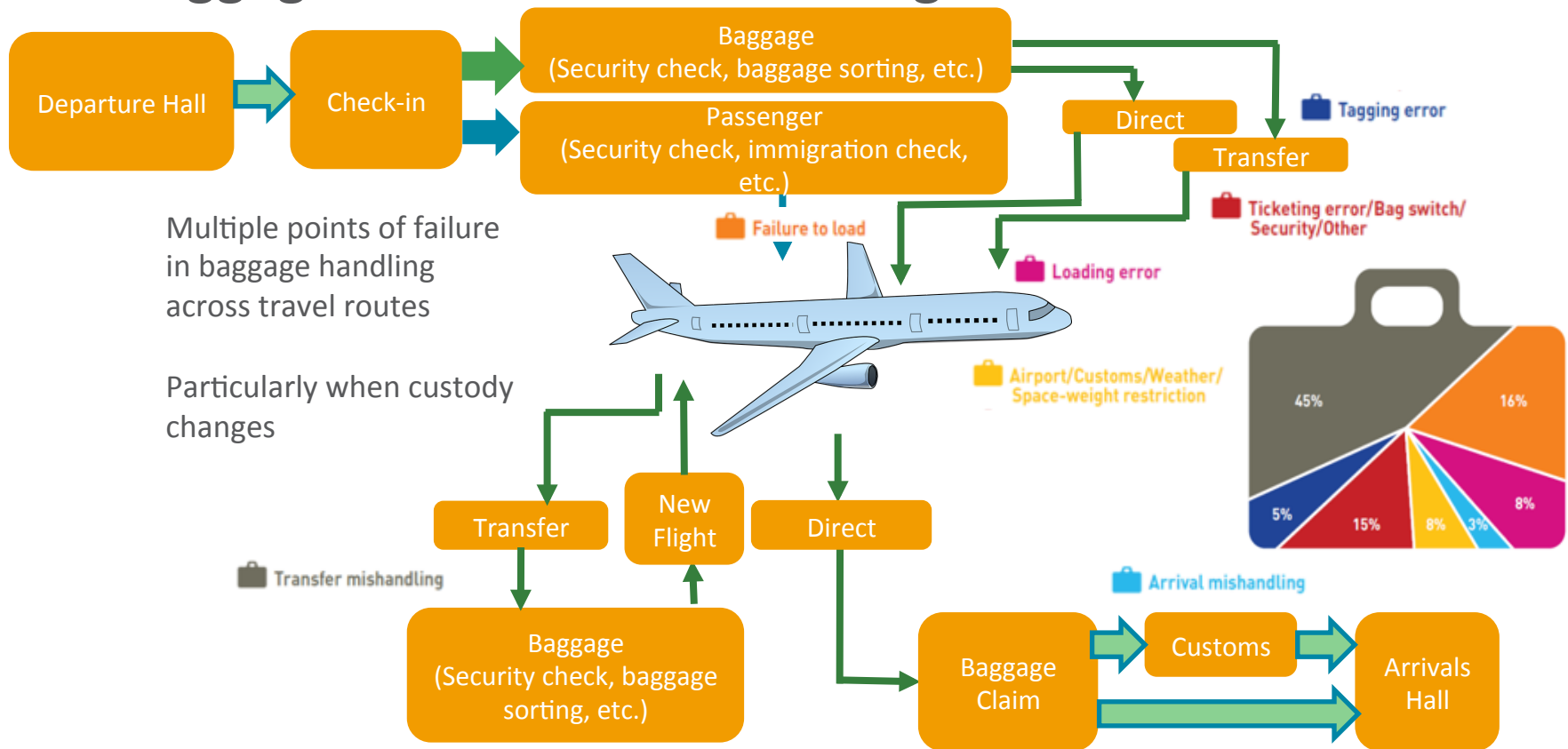
# Baggage Flow and Mis-handling



PNR = Passenger Name Record API = Advance Passenger Information DCS = Departure Control System BRS = Baggage Reconciliation System

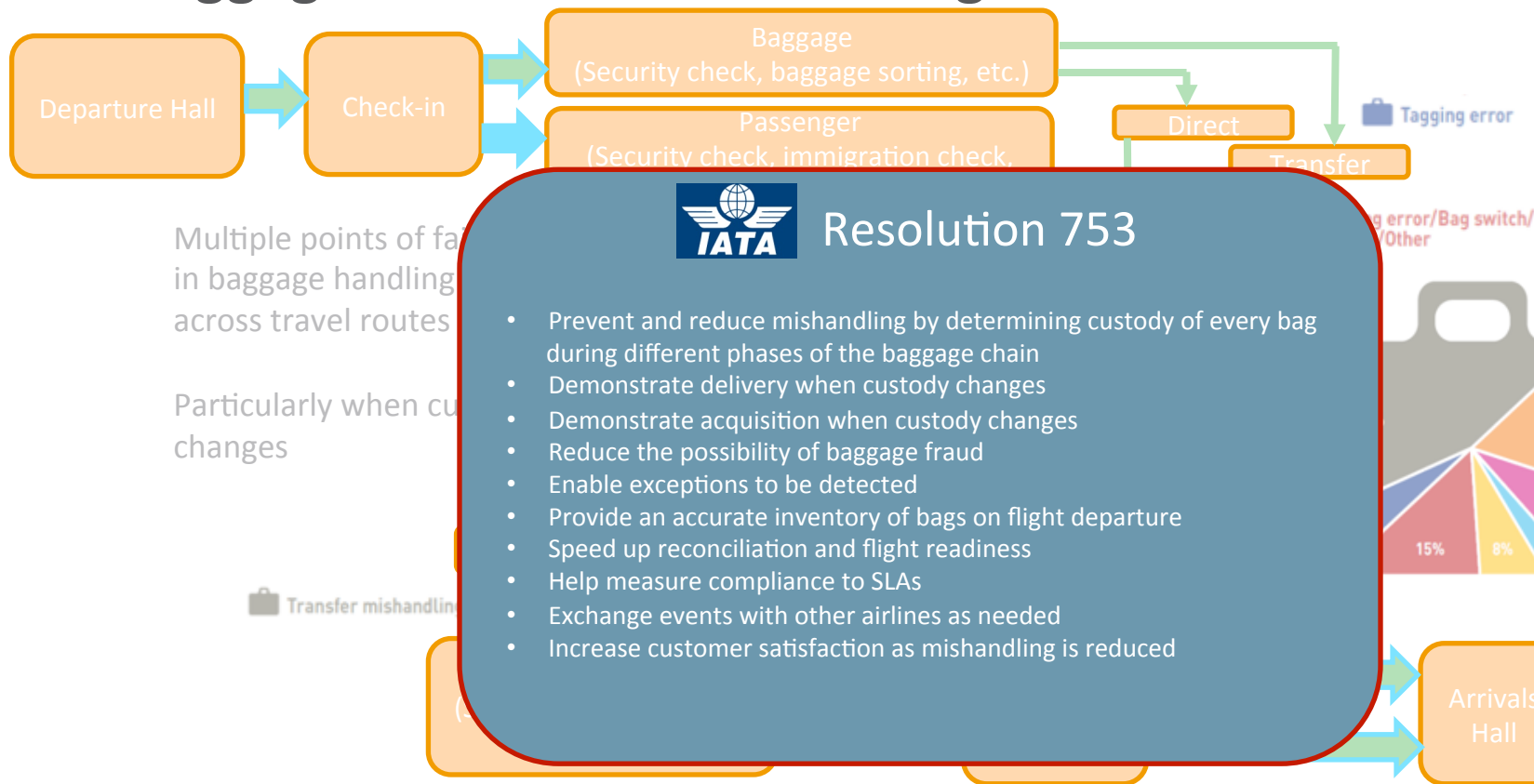


# Baggage Flow and Mis-handling



PNR = Passenger Name Record API = Advance Passenger Information DCS = Departure Control System BRS = Baggage Reconciliation System

# Baggage Flow and Mis-handling



## Resolution 753

- Prevent and reduce mishandling by determining custody of every bag during different phases of the baggage chain
- Demonstrate delivery when custody changes
- Demonstrate acquisition when custody changes
- Reduce the possibility of baggage fraud
- Enable exceptions to be detected
- Provide an accurate inventory of bags on flight departure
- Speed up reconciliation and flight readiness
- Help measure compliance to SLAs
- Exchange events with other airlines as needed
- Increase customer satisfaction as mishandling is reduced

PNR = Passenger Name Record API = Advance Passenger Information DCS = Departure Control System BRS = Baggage Reconciliation System

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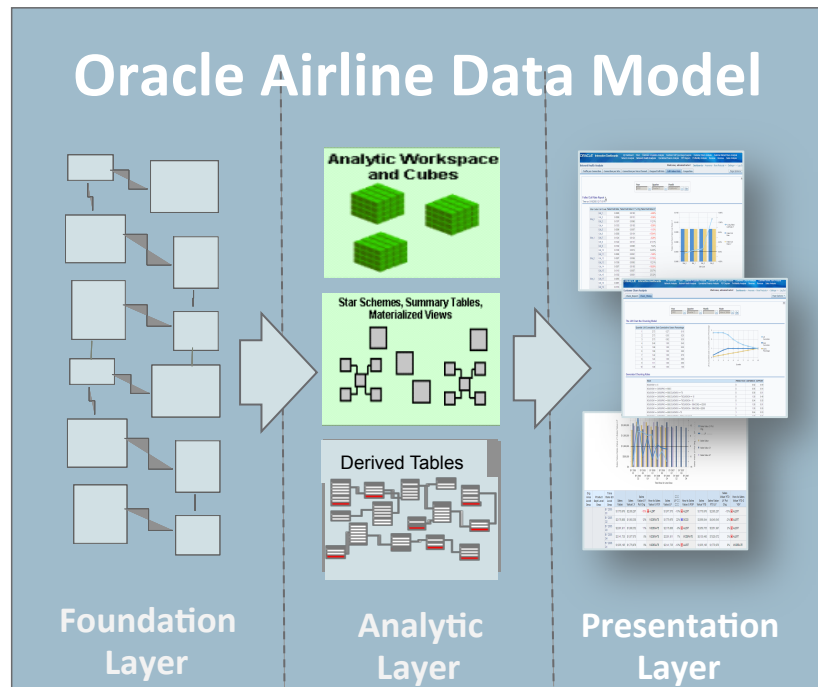
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# Oracle Airline Data Model

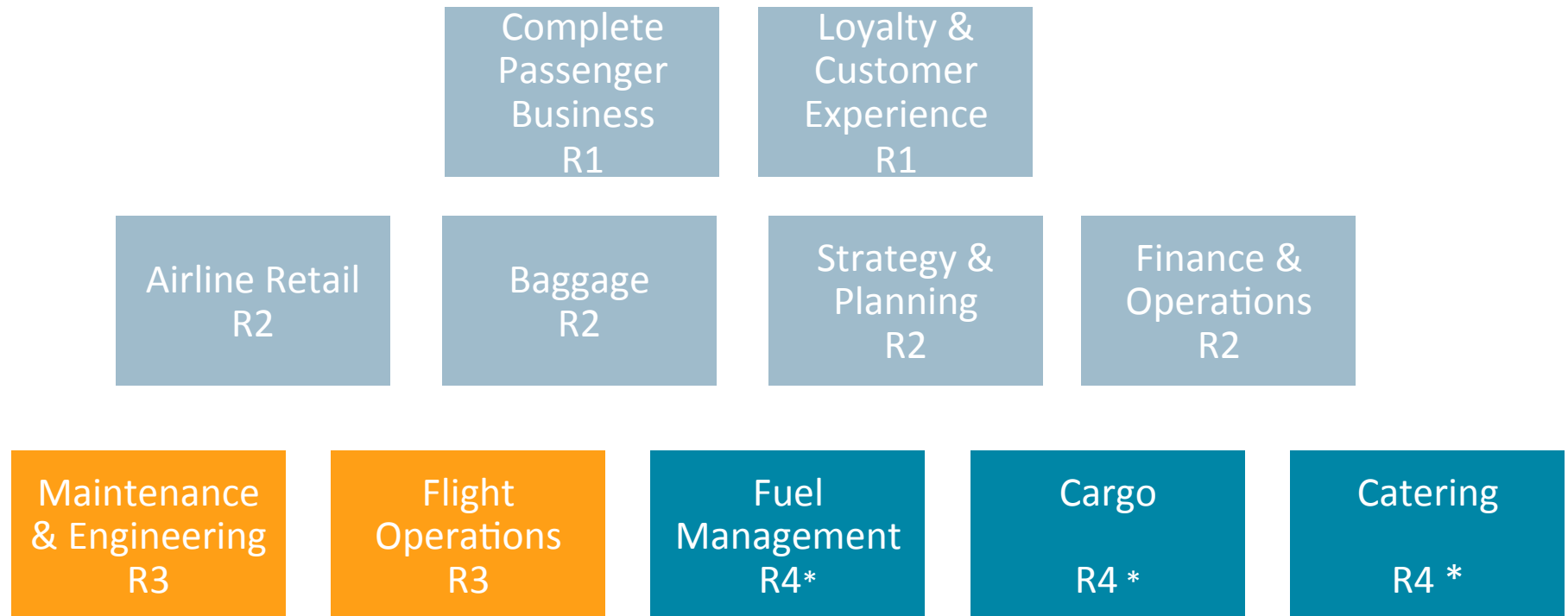
*More Than Just a Data Model*



- Industry-standard compliant based Enterprise-wide Data Model
- Contains Logical and Physical Data Models Third Normal Atomic, Dimensional Schema
- Industry specific Airlines Measures and KPI
- Automatic Data Movement Among Layers
- Extensive business intelligence metadata
- Easily extensible and customizable
- Usable within any GDS, CRS/DCS Applications
- Central repository for atomic level data
- Pre-built Analytic Models and Reports
- Cloud enabled for DBCS

# The Oracle Airline Data Model

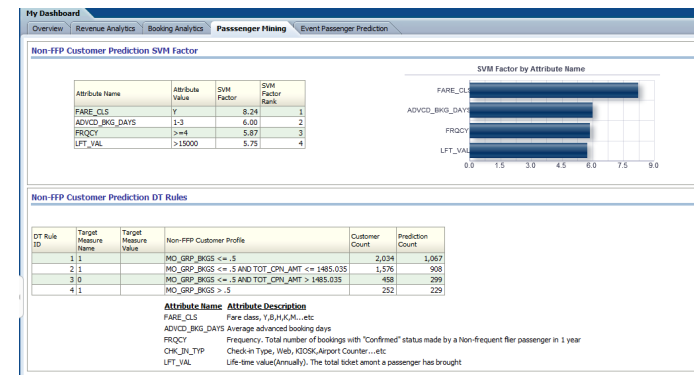
*Product Roadmap – by line of business*



\* R4 To Be Confirmed Based Upon OADM CAB Priorities

# Pre-Built Mining Models

- Customer Segmentation Analysis
  - FFP
  - Non-FFP
- Customer Loyalty Analysis
- Customer Life Time Value Analysis
- Frequent Flyer Passenger Prediction



## Non Frequent Flyer Customer Mining

Customer Travel Doc Number	Customer SVM Prediction	Customer SVM Prediction Probability	Customer DT Prediction	Flag
00150444	0	0.82	1	01
012345678	0	1.00	1	01
017373329	1	0.82	0	10
02YK37247	1	0.82	0	10
038543178	0	0.82	0	00
038621441	1	0.82	1	11
040533435	1	0.82	1	11
050326571	1	0.82	1	11
050411618	1	0.82	1	11
060135436	1	0.82	0	10
060654399	0	0.82	1	01
06A856180	1	0.82	1	11
070504826	1	0.82	0	10
070857346	1	0.82	1	11
072021835	0	1.00	1	01
077213661	1	0.82	1	11
07C110041	1	0.82	0	10
093244540	1	0.82	1	11
094191140	0	0.82	1	01
094285203	1	0.82	0	10
094463411	1	0.82	1	11
0967489753	0	0.82	1	01
099023990	0	0.82	1	01
099035982	1	0.82	1	11
099080275	0	0.82	0	00
099082730	1	0.82	1	11
099127975	1	0.82	1	11
099152822	1	0.82	0	10
099193810	1	0.82	1	11
09AT65894	1	0.82	1	11
09PC18174	1	0.82	1	11
101396025	1	0.82	1	11

Rows 1 - 32  
Print - Export

## Customer Loyalty Analysis

- Identifies factors that may have more influence on customer loyalty to airlines
- Leveraging Support Vector Machine(SVM) algorithm and Decision Tree (DT)
- The output from the model is twofold:
  - The discovered rules provide correlation between the customer loyalty to Airlines and Customer attributes.
  - The prediction can be made on current base customer's data for the next month/quarter/year using the model built on historical data.

## Customer Life Time Value Analysis

- Identify/predict the customers who are likely to represent the highest value of revenue over their life time
- Regression model used to find out relationship between customer information and their potential value
- Model can be used to predict future revenue for any new or existing customer over next 1-5 years (# years can be adjusted in the model)
- Leverages Generalized Linear Model (GLM) and SVM algorithm



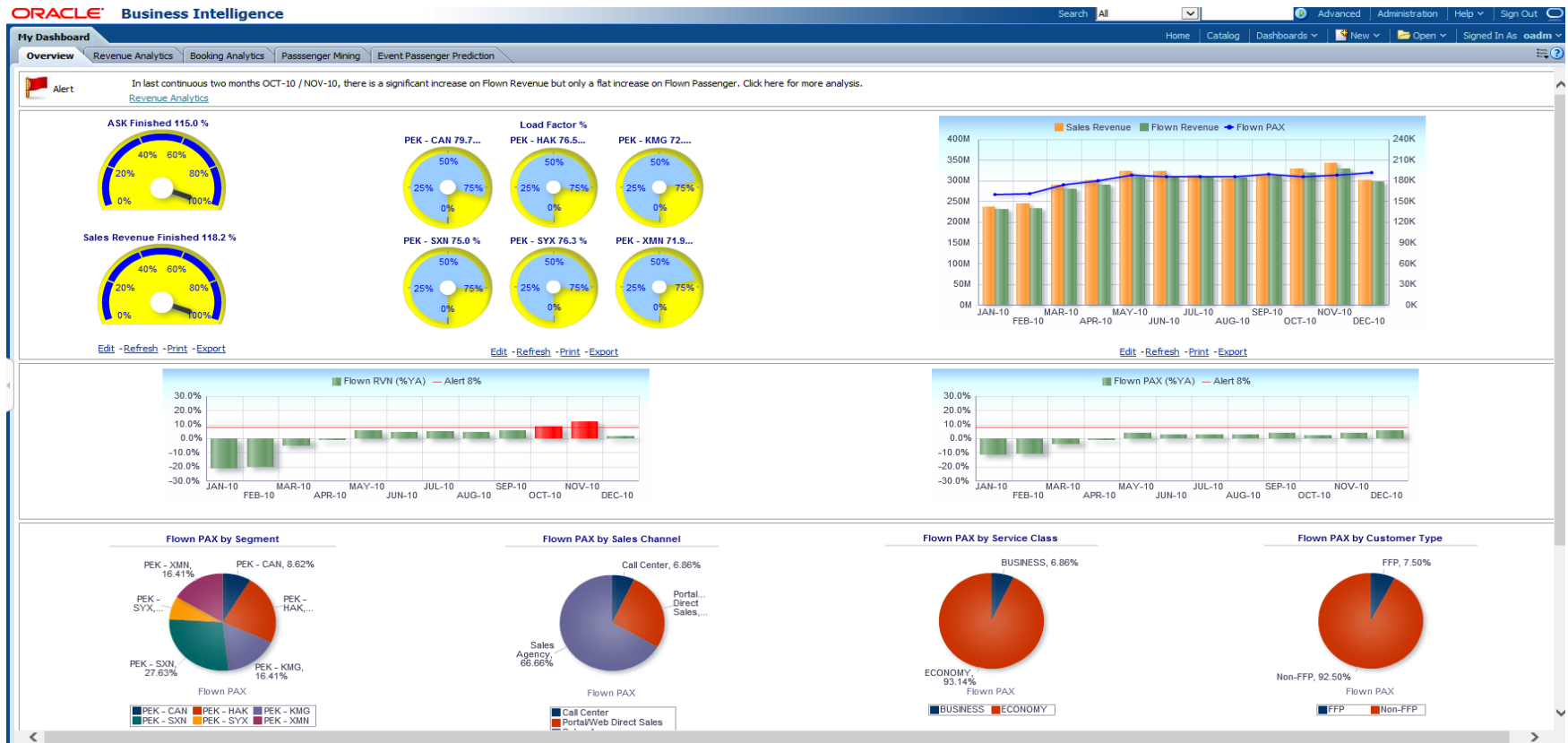
## Frequent Flyer Passenger Prediction

- Identify/predict the Non-FFP(Non Frequent Flyer Passenger) customers who are likely to become a FFP
- Classification algorithms, Support Vector Machines (SVM) and Decision Tree (DT) are used in this model
- The training data would be mix of Non-FFP passengers and FFP passengers. FFP passengers are those who became FFP from Non-FFP in the last 1 year time period.

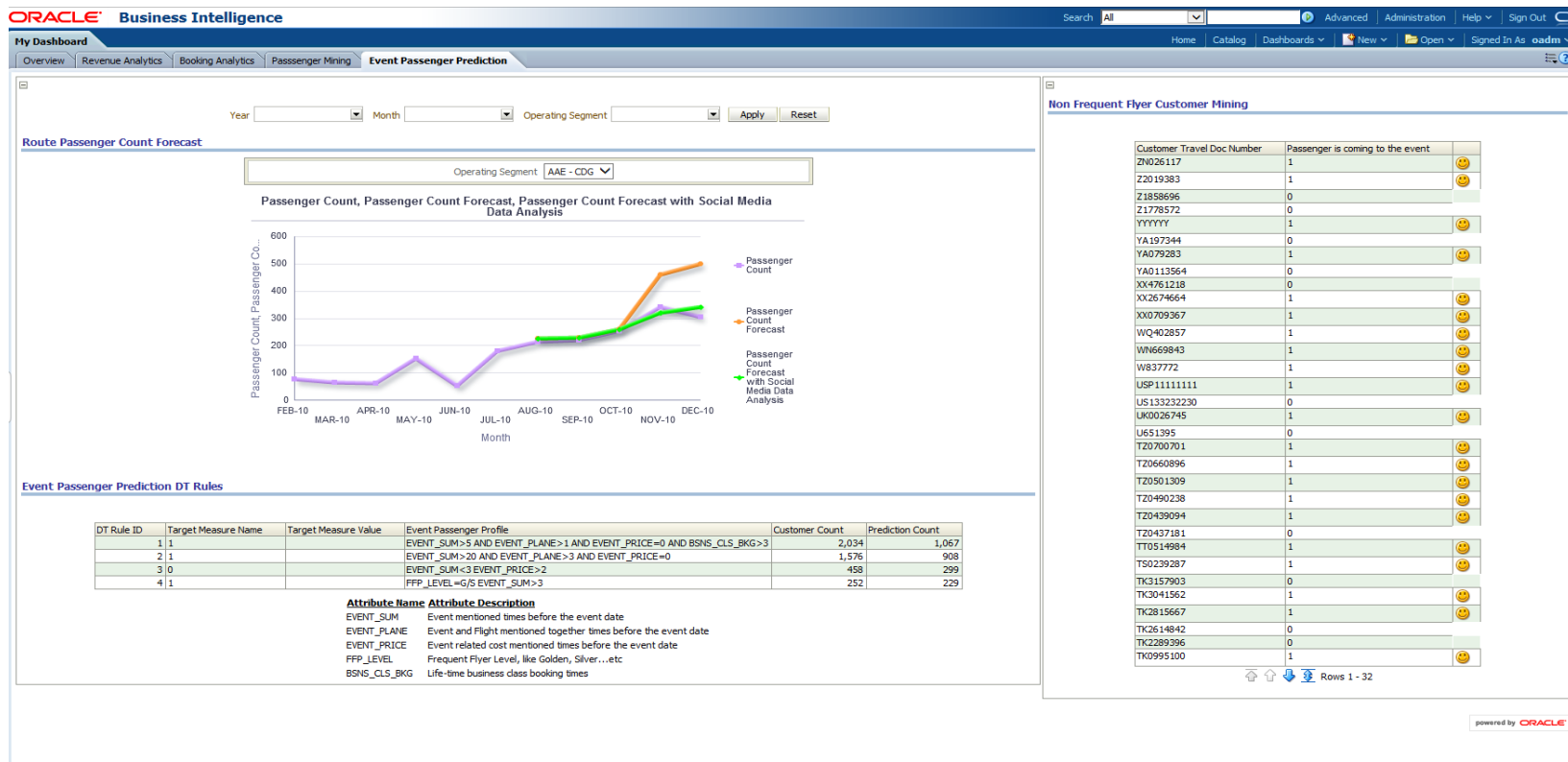
# Customer Segmentation Analysis

- Groups customers based on customer demographics, flown history, booking patterns, profitability, etc.
- Business analysts can further look into each identified segment to better understand each customer group
- Clustering rules draw profile of the customers; show most important similar characteristics of each group.
- Leverages K-means clustering algorithm

# Sample Reports - Passenger Booking Revenue Report Sample



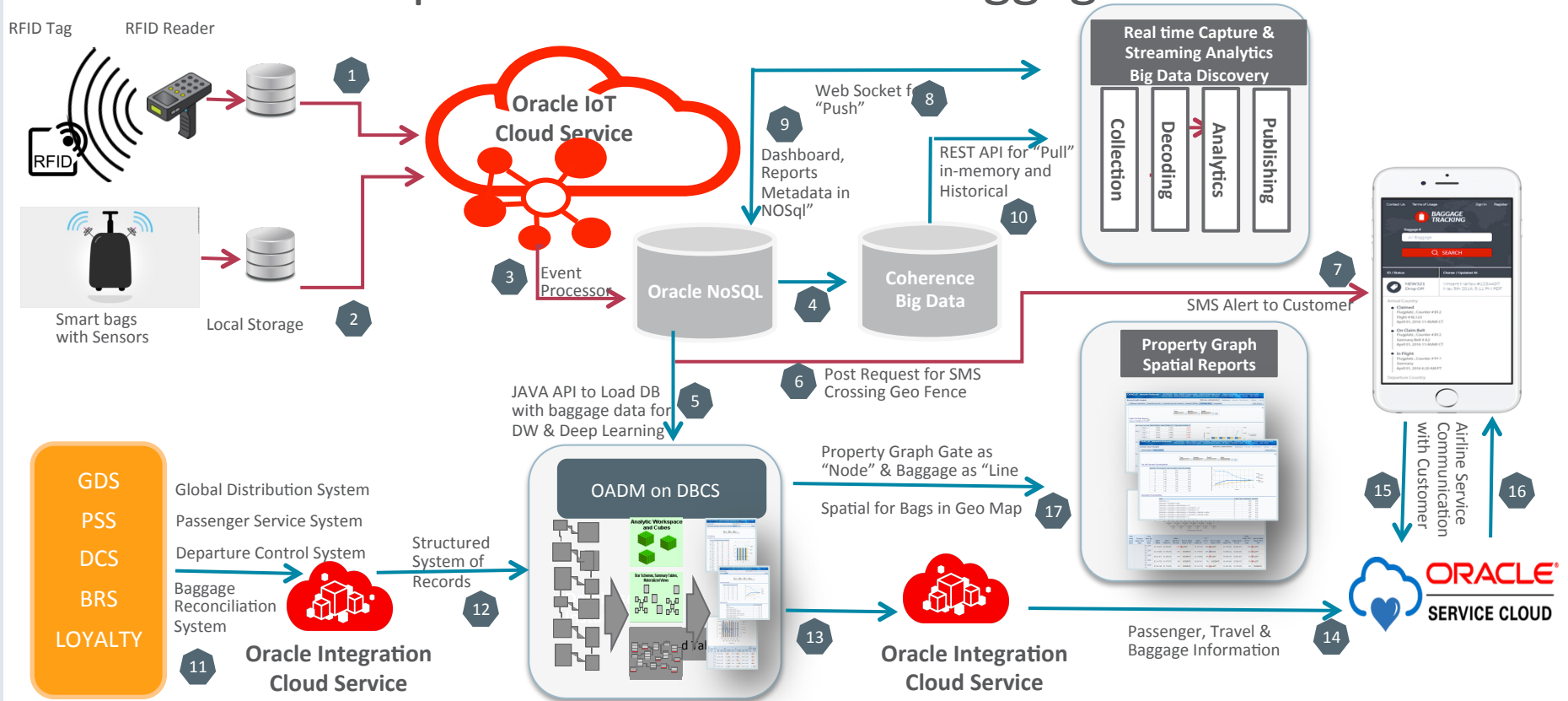
# Sample Reports - Passenger Volume Event Base Prediction



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# Proof of Concept for Smart Airlines Baggage



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Dashboard



Device Model



Data and Explorations



Integration

## Integrations

2 Items



\* Statistics are updated every 60 seconds



**RFID Listener**  
RFID listener

**Messages**  
Last 7 Days

363.6k

**Average Latency**  
Last 24 Hours

262.48ms

**Messages**  
Waiting For Data...



**SmartTrackerListener**  
Smart Tracker Listener

**Messages**  
Last 7 Days

90.7k

**Average Latency**  
Last 24 Hours

216.04ms

**Messages**  
Waiting For Data...





Dashboard



Device Model



Data and Explorations



Integration



Device Selection

## Modified



Last modified by



Mon, Sep 19, 2016 10:41:15 PM

## Messages Last 7 Days

460.4k

Messages



0

Alerts



T

W

T

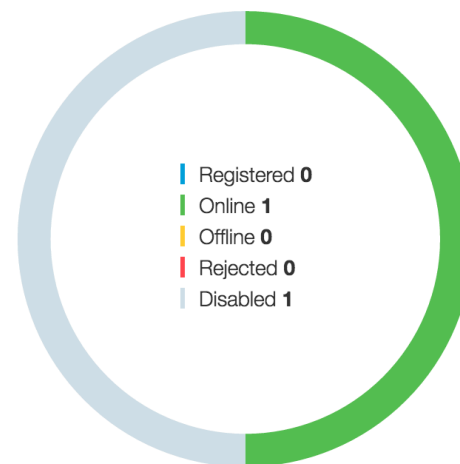
F

S

S

M

## Device Status



0

Connected via Gateway

2

Directly Connected Device





Dashboard



Device Model



Data and Explorations



Integration

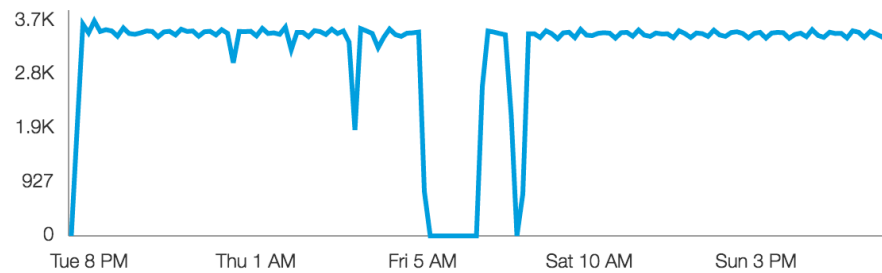


Device Selection

## Data and Explorations

Alerts **Messages** Explorations

\* From 09/13/16 10:40 PM \* To 09/19/16 10:40 PM Go



451.4

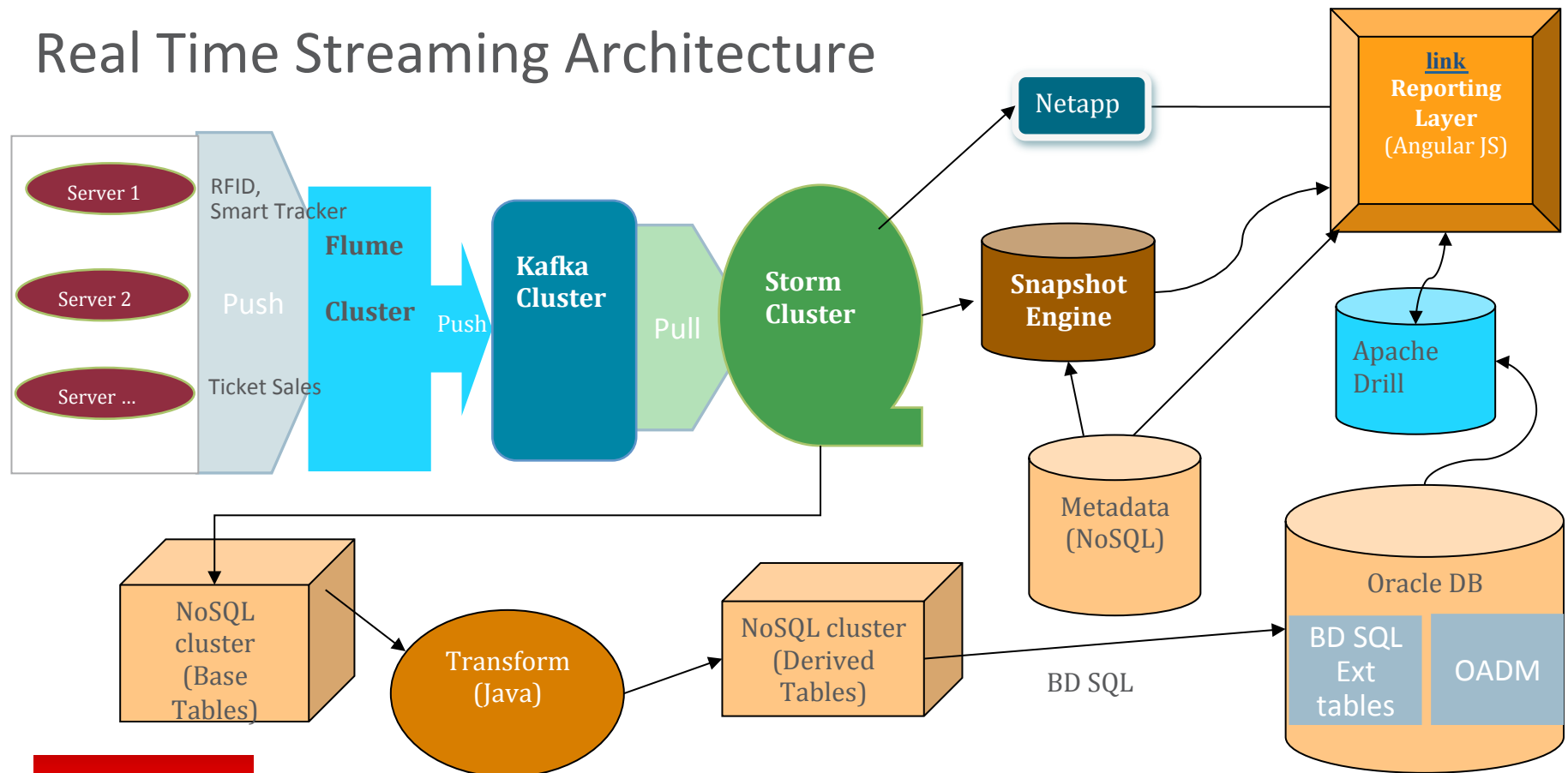
K  
Incoming  
Messages

☐ Auto Refresh Interval

5 Seconds

	Source	Message Format	Message Content	Priority	Direction	Received Time
1	0-UIHQ	urn:com:oracle:iot:device:rfidSimulat...	status = drop_off	Low	From Device	Mon, Sep 19, 2016 10:40:0
2	0-UIHQ	urn:com:oracle:iot:device:rfidSimulat...	status = drop_off	Low	From Device	Mon, Sep 19, 2016 10:40:0
3	0-UIHQ	urn:com:oracle:iot:device:rfidSimulat...	status = drop_off	Low	From Device	Mon, Sep 19, 2016 10:40:0
4	0-UIHQ	urn:com:oracle:iot:device:rfidSimulat...	status = drop_off	Low	From Device	Mon, Sep 19, 2016 10:40:0
5	0-UIHQ	urn:com:oracle:iot:device:rfidSimulat...	status = drop_off	Low	From Device	Mon, Sep 19, 2016 10:40:0

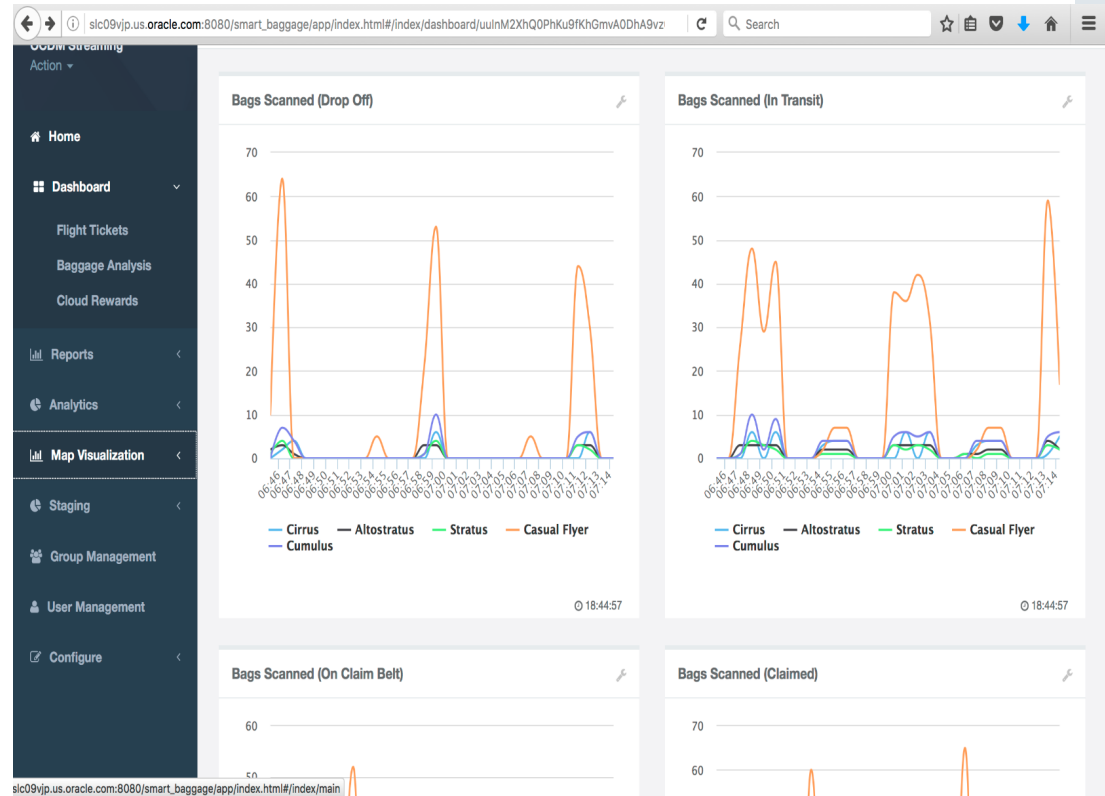
# Real Time Streaming Architecture





**Airline logistics monitor and analyze the flow of bags with real-time streaming analytics**

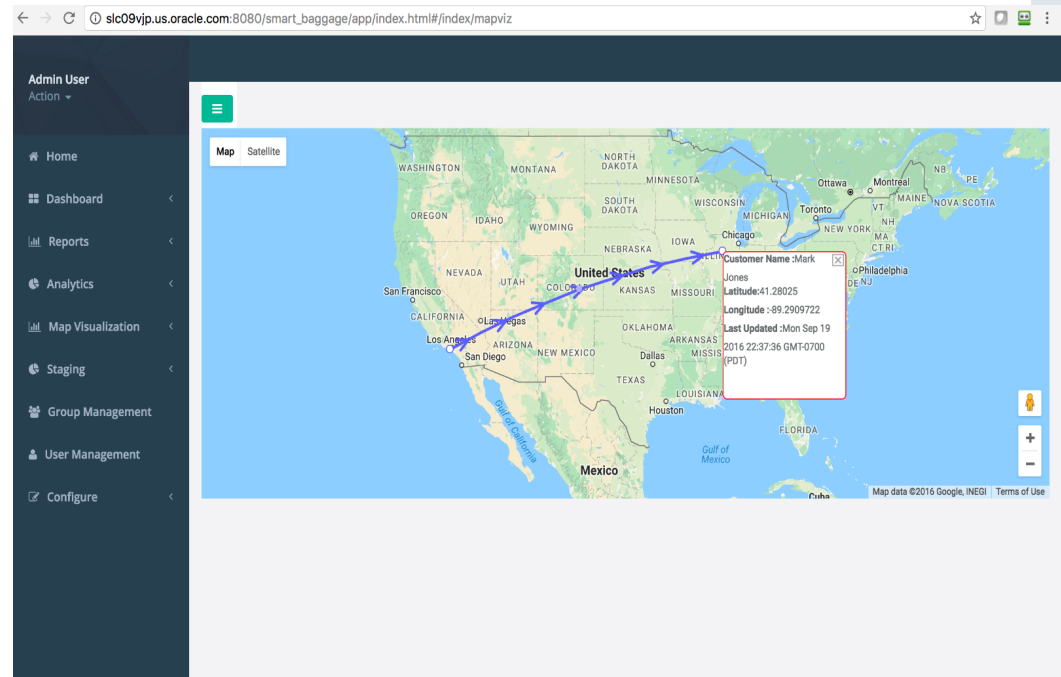
**Misrouted or stuck baggage can trigger alerts, and support incidents**





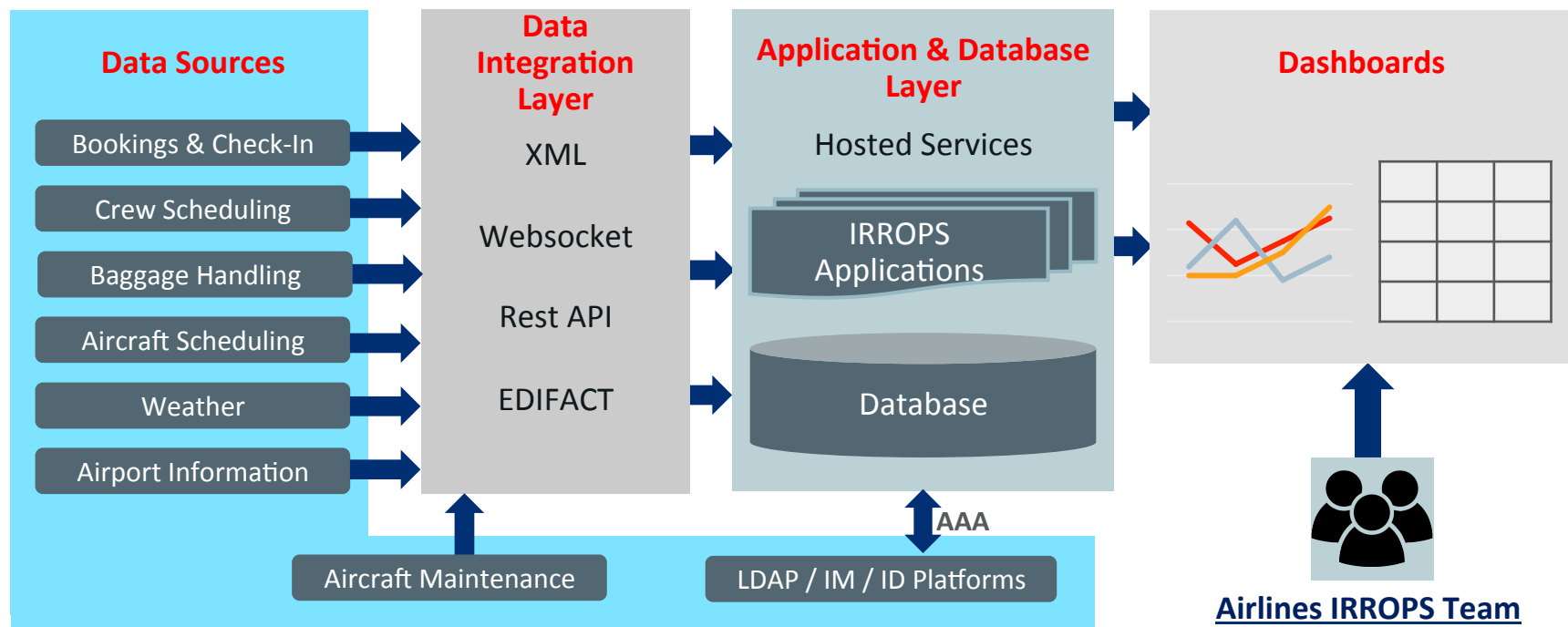
**Logistics can also follow the golf bag thru the airport, and across the country\*, using real-time maps generated from the tracker's GPS data and Oracle Spatial technologies.**

\*FAA requires that Smart Tracking devices to be deactivated while onboard the aircraft



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# eBIW Solution Architecture



# IRROPS Dashboard Sample

Single view for Flight, Crew and Seat (Capacity, Check-In, Boarded)

Can be configured to show desired data points, in customized report formats

Date08/22/2016AirportDMKFlightFD-508

ApplyReset

Flight Information

Aircraft Type	Aircraft Registration	Flight	Departure Time	Gate	Destination Airport
TURBO	VT-201	FD-508	8/22/2016 9:30:00 AM	B	HKG

Seat Availability

Flight	Passenger Class	Seat Capacity	Booking Count	Checkin Count
FD-508	FIRST CLASS	15	12	12
	BUSINESS CLASS	30	6	6
	ECONOMY CLASS	120	18	18

Crew Information

Flight	Roles Of Crew	Name	Airport
FD-508	pilots	Rian Bhattacharya	DMK
	co-pilots	Reena Roy	DMK
	air hosts/hostesses	Vijay Varadwaj	DMK
	Flight Service Manager (FSM)	Debasis Rana	DMK
	Cabin Service Director (CSD)	Dev Mukhaje	DMK

# Cargo Reports

Single view for all Cargo related data.

Drill-down to Month-wise, Week-wise performance.

**\$666.08**

Cargo Revenue

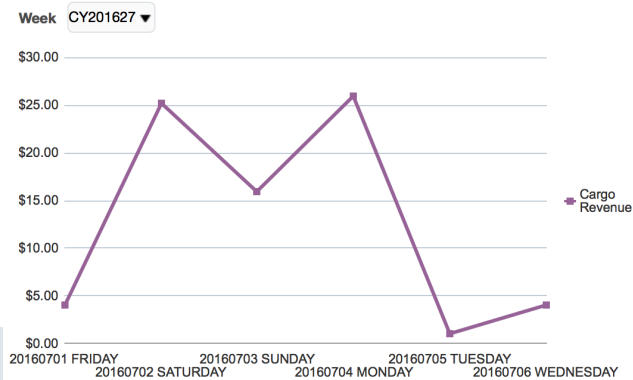
**43**

Delivery Count

Cargo Revenue by Cargo Category



Cargo Revenue



			PROPELLER	TURBO	
Year	Month	Week	F-GUGJ	VT-100	VT-201
CY 2016	JUL-16	CY201627			\$76.20
		CY201628			\$96.20
		CY201630			\$115.88
		CY201631			\$63.00
	AUG-16	CY201631		\$1.50	\$111.15
		CY201632		\$14.40	
		CY201634	\$36.00		\$51.00
		CY201635			\$42.75
	SEP-16	CY201635			\$18.00
		CY201639		\$14.00	
		CY201640		\$5.00	\$21.00

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# Airline CX & Big Data Architecture for Passenger Business



Social



Mobile



Online



Travel Agencies

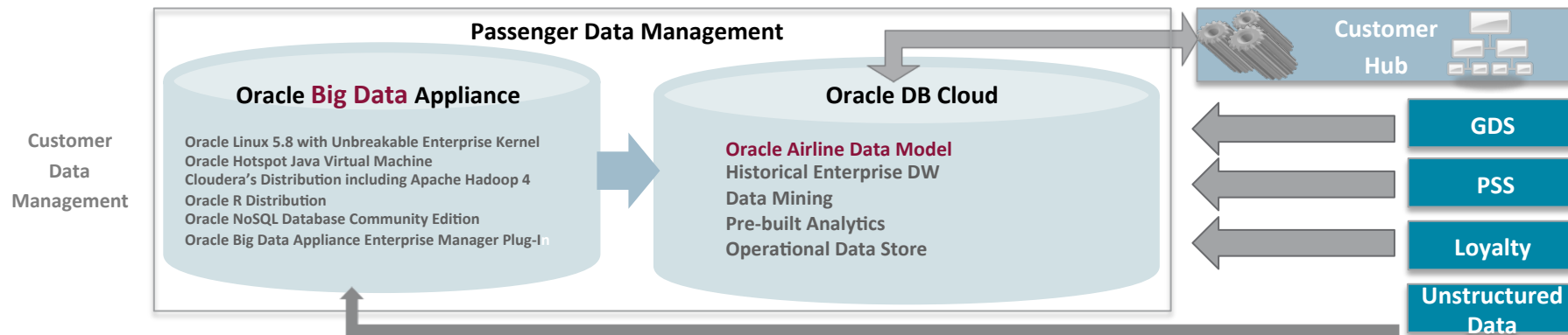
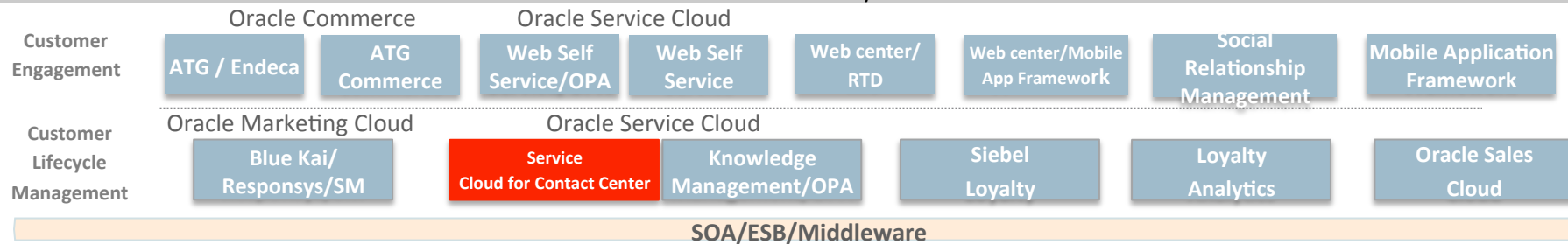


Call Center



Reservations

Customer Life Cycle



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## Mark Purchases his trip...

Mark is heading to play golf near Miami, he's planning to use his Smart Tracker to make sure he knows where his golf clubs are at all times during the trip



Mark is ready for his trip!

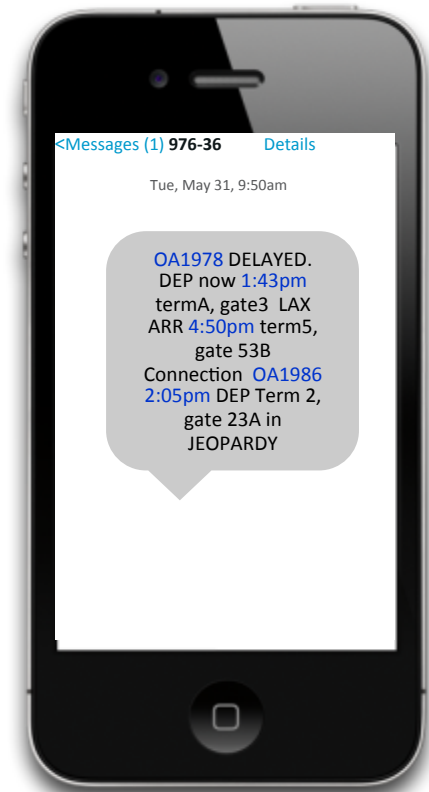


## Mark packs his bags

He includes the Smart Tracker he received from the airlines Loyalty Program in his golf bag. His other bag will use the RFID tracking



## Delayed Travel Notification – CX Save



## Delayed Travel...

Mark checked in for the flight but as he arrives at the LAX, he receives an alert that the flight is delayed. He's worried about making his connecting flight in Chicago and contacts a service agent



# Real-Time Data

Before addressing Mark's concerns, the agent, Sue, can see a snapshot of his reservation

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Home

Agent Oracle GE Air 157488 Available Available to receive interactions

Mark Jones

First Name\* Mark

Last Name\* Jones

Email mark.jones@oademo.com

Mobile Phone 1 (415) 654-8296

Passenger Type ADLT

Address Los Angeles CA United States (US)

Frequent Flyer Yes

Loyalty Program Cloud Rewards

Loyalty Level Cirrus

Customer Lifetime Value \$7498

Salesperson Agent Oracle GE Air

Free Upgrade Yes

Global Opt-in Yes

Incidents (4)

Status	Response Interval	Resolution Interval	Source	Reference #	Subject	Action
Unresolved	0h 0m	0h 0m	Contact Editor	160913-000002	flight delay	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>
Unresolved	0h 0m	0h 0m	Contact Editor	160913-000000	No Value	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>
Waiting	0h 0m	0h 0m	Workflow	160912-000000	No Value	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>
Solved	0h 0m	-24h 0m	Live Chat	160825-000000	Unable to find Offers	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>

Logged in as: Agent Oracle GE Air | Editing 2 objects (1 modified) | 100%

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# Real-Time Data

Sue sees Mark is an important loyalty customer

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Home

Agent Oracle GE Air 157488 Available Available to receive interactions

Mark Jones

First Name\* Mark

Last Name\* Jones

Email mark.jones@oademo.com

Mobile Phone 1 (415) 654-8296

Passenger Type ADLT

Address Los Angeles CA United States (US)

Frequent Flyer Yes

Loyalty Program Cloud Rewards

Loyalty Level Cirrus

Customer Lifetime Value \$7498

Salesperson Agent Oracle GE Air

Free Upgrade Yes

Global Opt-in Yes

Incidents (4)

Status	Response Interval	Resolution Interval	Source	Reference #	Subject	Action
Unresolved	0h 0m	0h 0m	Contact Editor	160913-000002	flight delay	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>
Unresolved	0h 0m	0h 0m	Contact Editor	160913-000000	No Value	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>
Waiting	0h 0m	0h 0m	Workflow	160912-000000	No Value	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>
Solved	0h 0m	-24h 0m	Live Chat	160825-000000	Unable to find Offers	<a href="#">Open</a> , <a href="#">Delete</a> , <a href="#">Print</a>

Logged in as: Agent Oracle GE Air | Editing 2 objects (1 modified) | 100%

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# Real-Time D

Sue could also see Mark's flight history, which was used to calculate his Customer Lifetime Value

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Home Display Page Setup

Agent Oracle GE Air 157488 Available Available to receive interactions

Mark Jones OA\_Passenger Itinerary OA\_Delayed Flights OA\_Passenger Flight History

First N	Last N	Passenger	Frequent	Loyalty	Passenger Checkin	Flight Nu	Origin Airpor	Destination Airp	Booking	Departure
Mark	Jones	ADLT	Yes	Cirrus	TXW18JH	OA-6893	PHF	LAX	P	08/27/2016 0
Mark	Jones	ADLT	Yes	Cirrus	UAF56LQ	OA-6892	LAX	PHF	P	08/24/2016 0
Mark	Jones	ADLT	Yes	Cirrus	FWP34ZA	OA-1488	HYA	LAX	H	08/21/2016 0
Mark	Jones	ADLT	Yes	Cirrus	PND27RF	OA-1487	LAX	HYA	P	08/17/2016 0
Mark	Jones	ADLT	Yes	Cirrus	TCQ12KX	OA-9148	TVL	LAX	P	08/14/2016 0
Mark	Jones	ADLT	Yes	Cirrus	CXP09YD	OA-9147	LAX	TVL	P	08/10/2016 0
Mark	Jones	ADLT	Yes	Cirrus	WDX16SL	OA-4355	OCE	LAX	P	08/04/2016 0
Mark	Jones	ADLT	Yes	Cirrus	PWE03VK	OA-4354	LAX	OCE	H	08/02/2016 0
Mark	Jones	ADLT	Yes	Cirrus	XZD28NQ	OA-7341	ISP	LAX	P	07/30/2016 0
Mark	Jones	ADLT	Yes	Cirrus	RPL06GK	OA-7342	LAX	ISP	P	07/27/2016 0
Mark	Jones	ADLT	Yes	Cirrus	ZOR11FN	OA-5291	SGF	LAX	P	07/25/2016 0
Mark	Jones	ADLT	Yes	Cirrus	CFQ9HU	OA-5290	LAX	SGF	P	07/23/2016 0
Mark	Jones	ADLT	Yes	Cirrus	PLK29HD	OA-2895	ECP	LAX	H	07/21/2016 0
Mark	Jones	ADLT	Yes	Cirrus	QSD34TY	OA-2894	LAX	ECP	P	07/18/2016 0
Mark	Jones	ADLT	Yes	Cirrus	SFT8NP	OA-8797	SCF	LAX	P	07/15/2016 0
Mark	Jones	ADLT	Yes	Cirrus	LRF15OR	OA-8796	LAX	SCF	P	07/11/2016 0
Mark	Jones	ADLT	Yes	Cirrus	KZM7XB	OA-6535	AGA	LAX	P	07/06/2016 0
Mark	Jones	ADLT	Yes	Cirrus	IAD24SV	OA-6534	LAX	AGS	H	07/02/2016 0
Mark	Jones	ADLT	Yes	Cirrus	GCB12UT	OA-1876	CHS	LAX	P	06/27/2016 0
Mark	Jones	ADLT	Yes	Cirrus	HBA45TS	OA-1875	LAX	CHS	P	06/24/2016 0
Mark	Jones	ADLT	Yes	Cirrus	XDF05SR	OA-5231	CRE	LAX	P	06/18/2016 0


Logged in as: Agent Oracle GE Air | 24 Records | 100%

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Agent Oracle GE Air


157488



 Available

Available to receive interactions



 160913-000002

 OA\_Delayed Flights

Inbound FI	Outbound F	Aircraft Registr	Termi	Gat	Departure Tim	Reschedule Departu	Reason for	Origin Airport	Destination Airpor
OA-1965	OA-1978	N904DE	TERM	GTE	08/31/2016 10:	08/31/2016 10:38 A	Weather	LAX	ORD

# Real-Time Data

Sue can also get real-time updates around customer concerns, such as flight delays

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# Real-Time Data

Sue also sees there are 15 other passengers with the same connection

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Home Display Page Setup

No Chats

Recent Items

Mark Jones

160913-00000

Navigation

Notifications

OA\_Delayed Flight

OA\_Passenger Flig

OA\_Delayed Flight

OA\_Passenger Itin

OA\_Layover 15 PA

OA\_Baggage Track

Agent Oracle GE Air

157488

Available

Available to receive interactions

Mark Jones

OA\_Layover 15 PAX with Mark Jones

Firs	Las	Passenger C	Origin A	Destinatio	Flight	Passe	Loyalt	Loy	Booking Co	Book	Departu
Ahm	Mah	825	ORD	MIA	OA-1	ADLT	Cloud	Altost	825	I	08/31/2
Janni	Pelk	485	ORD	MIA	OA-1	ADLT	Cloud	Altost	485	Q	08/31/2
Mark	Jone	1230	ORD	MIA	OA-1	ADLT	Cloud	Cirrus	1230	U	08/31/2
Noo	Vayr	821	ORD	MIA	OA-1	ADLT	Cloud	Cirrus	821	T	08/31/2
Pepp	Heik	823	ORD	MIA	OA-1	CHD	Cloud	Cirrus	823	X	08/31/2
Ian	Stro	6738	ORD	MIA	OA-1	ADLT	Cloud	Cumu	6738	Y	08/31/2
Lupe	Gonz	484	ORD	MIA	OA-1	ADLT	Cloud	Cumu	484	X	08/31/2
Rafa	Mak	703	ORD	MIA	OA-1	ADLT	Cloud	Cumu	703	Y	08/31/2
Rui	Kokk	546	ORD	MIA	OA-1	ADLT	Cloud	Cumu	546	C	08/31/2
Carla	Kaya	1044	ORD	MIA	OA-1	ADLT	No Val	No Va	1044	M	08/31/2
Edvin	Snar	858	ORD	MIA	OA-1	ADLT	No Val	No Va	858	L	08/31/2
Shar	Kaya	2070	ORD	MIA	OA-1	INF	No Val	No Va	2070	A	08/31/2
Sudi	Kaya	2181	ORD	MIA	OA-1	CHD	No Val	No Va	2181	P	08/31/2
Jinhe	Li	6739	ORD	MIA	OA-1	ADLT	Cloud	Stratu	6739	T	08/31/2
Uday	Mah	483	ORD	MIA	OA-1	ADLT	Cloud	Stratu	483	J	08/31/2

Contact Quick Search

Logged in as: Agent Oracle GE Air

15 Records

100%



# Real-Time Data

She sends a shuttle  
to take Mark and  
the other  
passengers to their  
gate



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## Mark Makes it to Chicago!

Despite the delay,  
Mark lands in his  
connection city 15  
minutes prior to final  
boarding for his flight

to Miami



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# Mark Makes the Connection!

He receives an alert  
that his golf clubs  
have arrived in  
Chicago, but are not in  
the Miami-bound geo-  
fenced transit area



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Agent Oracle GE Air 157488		Available Available to receive interactions							
160913-000002		OA_Delayed Flights		OA_Baggage Tracking					
Contac	First Na	Last Na	Passenger Check-in	Baggage	Baggage Tag	Baggage W	Baggage Weight Un	Baggage St	Baggage Scanne
2086	Mark	Jones	1230	OHMA9BL	SM_TRCK	60 lb	lb	Misdirected	08/31/2016 01:40
2086	Mark	Jones	1230	JG8NNNY	RFID	60 lb	lb	In Transit	08/31/2016 01:41

# Instant resolution

Sue also receives an alert about the misdirected bag, and sends

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# Instant resolution

Sue contacts ground control and is able to route the bag correctly



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Agent Oracle GE Air  
157488



Available

Available to receive interactions



160913-000002



OA\_Delayed Flights



OA\_Baggage Tracking



Contac	First Na	Last Na	Passenger Check-in	Baggage	Baggage Tag	Baggage W	Baggage Weight Un	Baggage St	Baggage Scanne
2086	Mark	Jones	1230	OHMA9BL	SM_TRCK	60 lb	lb	Misdirected	08/31/2016 01:40
2086	Mark	Jones	1230	JG8NNNY	RFID	60 lb	lb	In Transit	08/31/2016 01:41
2086	Mark	Jones	1230	JG8NNNY	RFID	60 lb	lb	In Transist	08/31/2016 01:45
2086	Mark	Jones	1230	OHMA9BL	SM_TRCK	60 lb	lb	On Track	08/31/2016 01:50

# Instant resolution

Sue receives  
confirmation the  
bag is back on track  
to Miami

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## Mark is relieved!

Mark is happy to know exactly where is golf clubs are, and where he can pick them up



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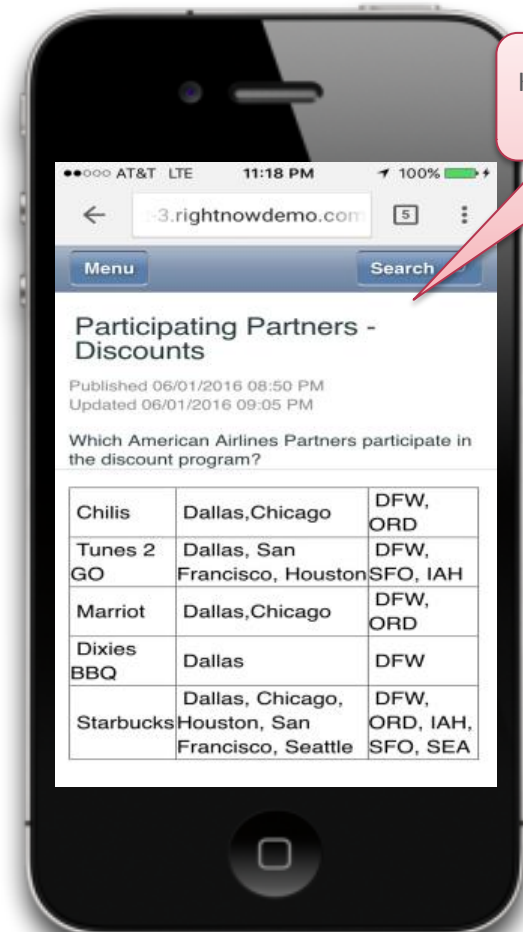
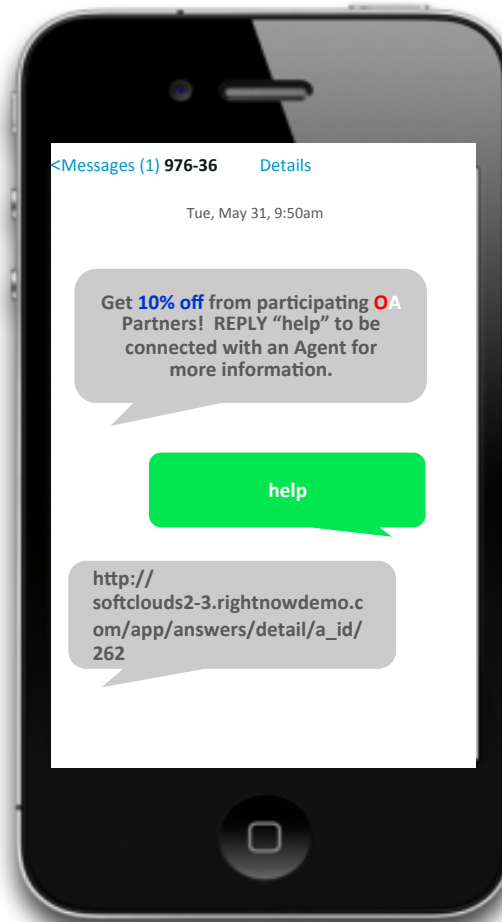
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# Customer Satisfaction

Sue sends Mark some discounts for participating partners



Know  
o

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Welcome to Miami!



## Advocacy!

Mark Posts his excitement at making it to the Miami.



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customer satisfaction

customer effort

## Mark is now an Advocate for Oracle Air!

We reduced Mark's customer effort and simultaneously increased his satisfaction, moving him from merely a fan, to a customer advocate.

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