

Airport Operations Planning - Case Study

Client: Heathrow | Account: HAL-L1 AOP | Role: UI Design, Visual Design | Timeline: 12weeks



ABOUT APPLICATION

An application that improves predictability of airfield operations through efficient Arrival & Departure Management. The application is used by more than 500 concurrent Airport Operations Users across the United Kingdom.

CHALLENGES

The Airport is running at full capacity with no room to add a single new flight in the schedule.



Airport Operations Planning is based on schedule and does not consider various influencing factors like wind conditions, capacity, demand, historical flight movements, etc.

Airport Operations wanted to improve its punctuality which was one of the key business drivers.
Reduces traffic bunching effect at arrivals and thereby improving departure punctuality.



DESIGN APPROACH

Understand and Empathize: We conducted a few interactive sessions with the Airport Operation agents to understand the As-Is process for monitoring and measuring airport performance.



We started with developing wireframes and tools to elicit requirements from business and define new performance measures to operate effectively as it was a new solution proposed to the customers.

Tested a working prototype which could be leveraged as part of the build phase of the project, with a group of users. Understanding the licensing and pricing implications of tool we designed a Pega UX/UI solution which is both scalable and meet business requirements.



OUTCOME

The Application leverages Pega OOTB tools to limit customization which was a pain point for the existing A-CDM platform effective and rich dashboard UI for airport management teams for understanding various KPIs of airport Operational performance and maintenance.

Clear visualization of detailed flight schedules, delay in arrivals and departures with respect to various Parameters, like Day, Night, Location, Calendar, Stacks, SIDs, etc.

Detailed & Optimized information as per user needs Created custom components [OOTB] such as Vertical Slider and Circle Loader where as Vertical Slider will help to filter the time period according it will display the available flights during the time frame. Circle Loader will display the percentage of accuracy in between circle with border color highlighted.



DESIGN HIGHLIGHTS





- Complex information broken down into clean and grouped user interfaces
- Ease of access to all the airport statistics in a single screen with complete details
- Improved visualizations to detailing ensure ease of understanding and reach
- Defined visual hierarchy for avoiding confusions to the user
- Intuitive UX approach for conveying arrivals and departures separately
- Pega OOTB Design components assure reusability of Design elements

VISUAL DESIGN BRAND GUIDELINES

Using the established brand color palette, I applied color-coding to each of the product lines that would make it easy to identify groups of products and their related documents. The rest of the application would use only a few primary colors to keep the focus on the products.



Color Palette

-  Heathrow Purple
-  Heathrow Light Purple
-  Heathrow Gray
-  Heathrow Light Gray
-  Heathrow Highlight Pink

Typography

Our primary font is Frutiger

Frutiger

Frutiger

Our electronic font is Arial

Arial

Arial

Pictograms

Pictograms make life easy for everyone. They also comply with our Wayfinding Performance Standard. Don't recreate them or design new ones without permission from the Brand team.

Terminal examples



Transport examples



Toilet and associated examples



Assistance and care examples





FINAL UI

The final design is polished and reflects the brand through color and a strong grid layout. Users can easily navigate through out the application.





FINAL UI

Heathrow

AIROPORT OPERATIONS PLANNING

Help

Messages

Welcome Alison Bates

MENU

SNOW

AFR 30

IRVR & RAP

MET

ACDM User Manual

SAM

Rig Tracker

DCB

More

Home

Arrival...

ARRIVALS - LAST UPDATED: 15/6/2017 09:34:47 UTC

16/06/2017

KPIs

66% ARRIVAL PUNCTUAL <=15 MINS

57% <=3 MINS

ARRIVALS

27L

27R

DEPARTURE

Start Time 28/06/2017 | 15:30

End Time 28/06/2017 | 23:59

Next Runway 09R

Start Time 29/06/2017 | 00:00

PS

Touchdown =1400

Midpoint =1300

Endpoint PS

1300

20Min

17% (↓5)

FILTERS

Flights Eg. 4A536, BA645

Flight Status

End Status Time Current

EDIT COLUMNS

Flt	Call Sign	Reg	Typ	Std	H	Status	Air Hld	LDT	IBT	SIBT	Stack	Rwy	Lnk	Flt Type	Orig	Rclm	Fst Bag	Lst Bag
UA920	UAL920	N666UA	B763	564		First Bag	2	13:50 A	13:50 A	13:50	LAM	09R	BA217	I	HKG	9	04:23	04:23
BA794	BAW794	N666UA	B763	563		First Bag	0	15:05 A	15:05 A	15:05	OCK	09R	BA217	I	LOS	2	04:23	04:23
A1116	UAL920	N666UA	B763	565		First Bag	0	16:43 A	16:43 A	16:43	BIG	09R	BA217	I	JNB	3	04:23	04:23
TG911	UAL920	N666UA	B763	564		First Bag	0	18:41 A	18:41 A	18:41	LAM	09R	BA217	I	HKG	5	04:23	04:23
BA424	UAL920	N666UA	B763	563		First Bag	2	19:52 A	19:52 A	19:52	OCK	09R	BA217	I	HKG	02	04:23	04:23
VS005	UAL920	N666UA	B763	565		First Bag	2	21:00 A	21:00 A	21:00	LAM	09R	BA217	I	LOS	9	04:23	04:23
BA063	UAL920	N666UA	B763	564		First Bag	0	23:30 A	23:30 A	00:30	OCK	09R	BA217	I	JNB	2	04:23	04:23
BA017	UAL920	N666UA	B763	563		First Bag	2	23:48 A	23:48 A	01:30	BIG	09R	BA217	I	HKG	3	04:23	04:23
BA087	UAL920	N666UA	B763	565		First Bag	2	00:05 A	00:05 A	01:30	LAM	09R	BA217	I	HKG	5	04:23	04:23
BA123	UAL920	N666UA	B763	564		First Bag	0	00:35 A	00:35 A	01:30	OCK	09R	BA217	I	LOS	02	04:23	04:23
BA952	UAL920	N666UA	B763	563		First Bag	0	01:30 A	01:30 A	02:35	LAM	27L	BA217	I	JNB	9	04:23	04:23
BA560	UAL920	N666UA	B763	565		First Bag	0	01:30 A	01:30 A	03:35	OCK	27L	BA217	I	HKG	2	04:23	04:23
BA067	UAL920	N666UA	B763	564		First Bag	0	01:30 A	01:30 A	04:35	BIG	27L	BA217	I	HKG	3	04:23	04:23
BA124	UAL920	N666UA	B763	563		First Bag	0	02:35 A	02:35 A	05:40	LAM	27L	BA217	I	LOS	5	04:23	04:23
BA632	UAL920	N666UA	B763	565		First Bag	0	03:35 A	03:35 A	06:40	OCK	27L	BA217	I	JNB	02	04:23	04:23
AA105	UAL920	N666UA	B763	564		First Bag	0	04:35 A	04:35 A	08:40	LAM	27L	BA217	I	HKG	9	04:23	04:23
DL029	UAL920	N666UA	B763	563		First Bag	0	05:40 A	05:40 A	09:45	OCK	27L	BA217	I	LOS	2	04:23	04:23
BA067	UAL920	N666UA	B763	564		First Bag	0	00:35 A	00:35 A	01:30	OCK	09R	BA217	I	LOS	02	04:23	04:23
BA124	UAL920	N666UA	B763	563		First Bag	0	01:30 A	01:30 A	02:35	LAM	27L	BA217	I	JNB	9	04:23	04:23
BA632	UAL920	N666UA	B763	565		First Bag	0	01:30 A	01:30 A	03:35	OCK	27L	BA217	I	HKG	2	04:23	04:23
AA105	UAL920	N666UA	B763	564		First Bag	0	01:30 A	01:30 A	04:35	BIG	27L	BA217	I	HKG	3	04:23	04:23
DL029	UAL920	N666UA	B763	563		First Bag	0	02:35 A	02:35 A	05:40	LAM	27L	BA217	I	LOS	5	04:23	04:23
BA067	UAL920	N666UA	B763	565		First Bag	0	03:35 A	03:35 A	06:40	OCK	27L	BA217	I	JNB	02	04:23	04:23
BA124	UAL920	N666UA	B763	564		First Bag	0	04:35 A	04:35 A	08:40	LAM	27L	BA217	I	HKG	9	04:23	04:23
BA632	UAL920	N666UA	B763	563		First Bag	0	05:40 A	05:40 A	09:45	OCK	27L	BA217	I	LOS	2	04:23	04:23

More Notifications...

Heathrow

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Departure

Stand + Jetty

Ground Movements

Performance Dashboard

Passenger Flows

Baggage

Runway Configuration

Admin

My Worklist

My Reports

15/6/2017 09:34:47 UTC

16/06/2017

Auto Refresh OFF

Carriers

Handlers

Terminals

57% <=3 MINS

86% EARLY ARRIVALS

05

07

20Min

10

21

17% (↓5)

Flight Status

End Status Time Current

EDIT COLUMNS

More Notifications...

Lorem Ipsum - Lorem ipsum dolor sit amet, dolor sit amet

Lorem Ipsum - Lorem ipsum dolor sit amet, dolor sit amet

Lorem Ipsum - Lorem ipsum dolor sit amet, dolor sit amet

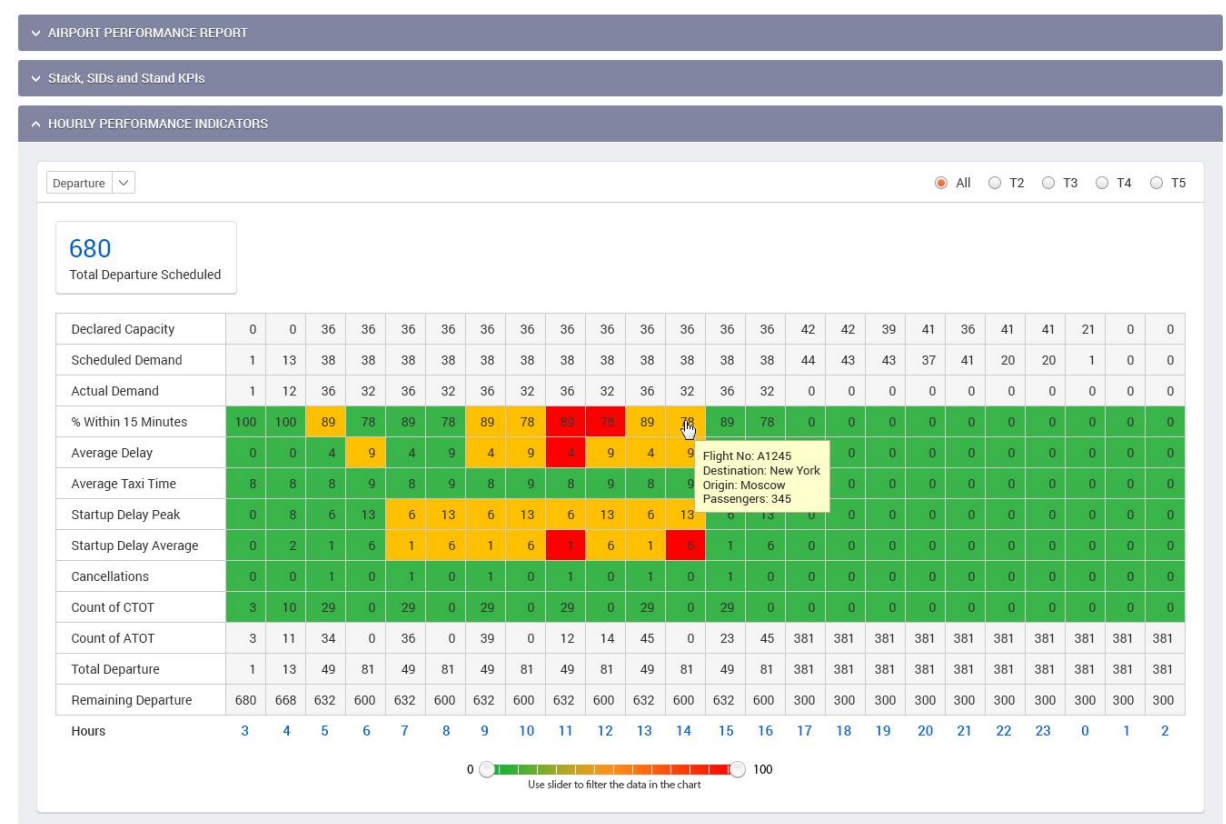
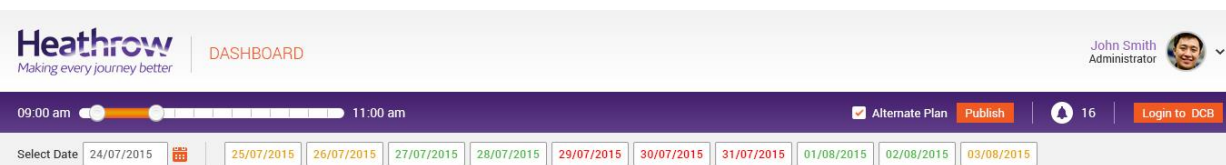
More Notifications...

Lorem Ipsum - Lorem ipsum dolor sit amet, dolor sit amet

Lorem Ipsum - Lorem ipsum dolor sit amet, dolor sit amet

Lorem Ipsum - Lorem ipsum dolor sit amet, dolor sit amet

More Notifications...



USABILITY TESTING

HOURLY PERFORMANCE OF ARRIVALS & DEPARTURES

The hourly performance table layout is able to present complex and huge data in a precise and presentable format which is easy to scan by a user.

AIRPORT PERFORMANCE REPORT

The use of Time slider to filter and chose a time span adds value as a user friendly and precise design component. The green, amber and red circular loader depicts overall Arrival and Departure delay status of flights with percentage value. This is a reusable custom UI component built by us in Pega 7. The way of using the global map and the graph conveys a lot of information through a neat and simple layout.





BUSINESS IMPACT

- ✓ Enhanced Customer Satisfaction
- ✓ Increased User Adoption
- ✓ Performance and Efficiency enhancement in decision making
- ✓ Significant reduction of risk and error
- ✓ Reduced user training effort; enhanced productivity
- ✓ User experience with better clarity and less confusion



Thank You!