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# INNOVATION IN AIRPORTS

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By  
SHIVA VENKATRAMAN  
FOUNDER & CEO

[www.varidus.com](http://www.varidus.com)

&

ADJUNCT FACULTY

[HTTPS://ASIA.ERAU.EDU](https://asia.erau.edu)



# ABOUT ME



- Founder & CEO of Varidus (New spin on venture capital)
- Worked for United Airlines and consulted with Cathay Pacific, Garuda, Malaysia Airlines, etc.
- Helped Founders in over 20 start-ups, worked for a few of them.
- Faculty at Embry Riddle Aeronautical University, SP Jain School of Management, Harvard, FDU, etc.
- Only Latin American Airports left on my bucket list.

# MY 15 MIN FLIGHT ON INNOVATION...

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- Case Studies of 4 Innovative Airports
- Digital Innovation Framework for Airports
- Defining your Innovation Eco-System
- Questions: Please hold at 10,000 feet!!

# CASE STUDY DUBAI AIRPORT

## BUSINESS GOALS



Increase airport capacity



Without additional terminal space



95% of passengers > security < 5 mins



Accurately predict baggage load



Efficient cleaning and maintenance of bathrooms



Improve security and service

## DATA SOURCES

- Flight Schedules
- Wi-fi Network
- Metal Detector Data
- Baggage System
- Sensor Data (Toilet doors, faucets)
- Queue Measurement Data

## BIG AIRPORT, BIG DATA

Airports are increasingly turning to big data to boost efficiency, installing sensors that collect information on everything from line lengths to how often toilet taps are turned on. WIRED crunched the numbers on the info collected by Dubai International Airport in just 24 hours.

**35 terabytes**

Data handled by airport's passenger WIFI



**351,000**  
Passengers detected by 1,000 sensors



**150,000**  
Devices connected to the free WIFI

**150 million**  
Number of data points collected \*



**60,000**  
Faces scanned at e-gates



**16,000**  
Number of pieces of luggage per hour Terminal 3 can handle in 'virtual bag' tests



**30 seconds**  
Accuracy window for predicting when your bag will arrive on the carousel

**200**  
Approximate number of data points per bag

**48 million**  
Data points collected by baggage system

\* Six-month average, based on airport operations, excluding IT systems

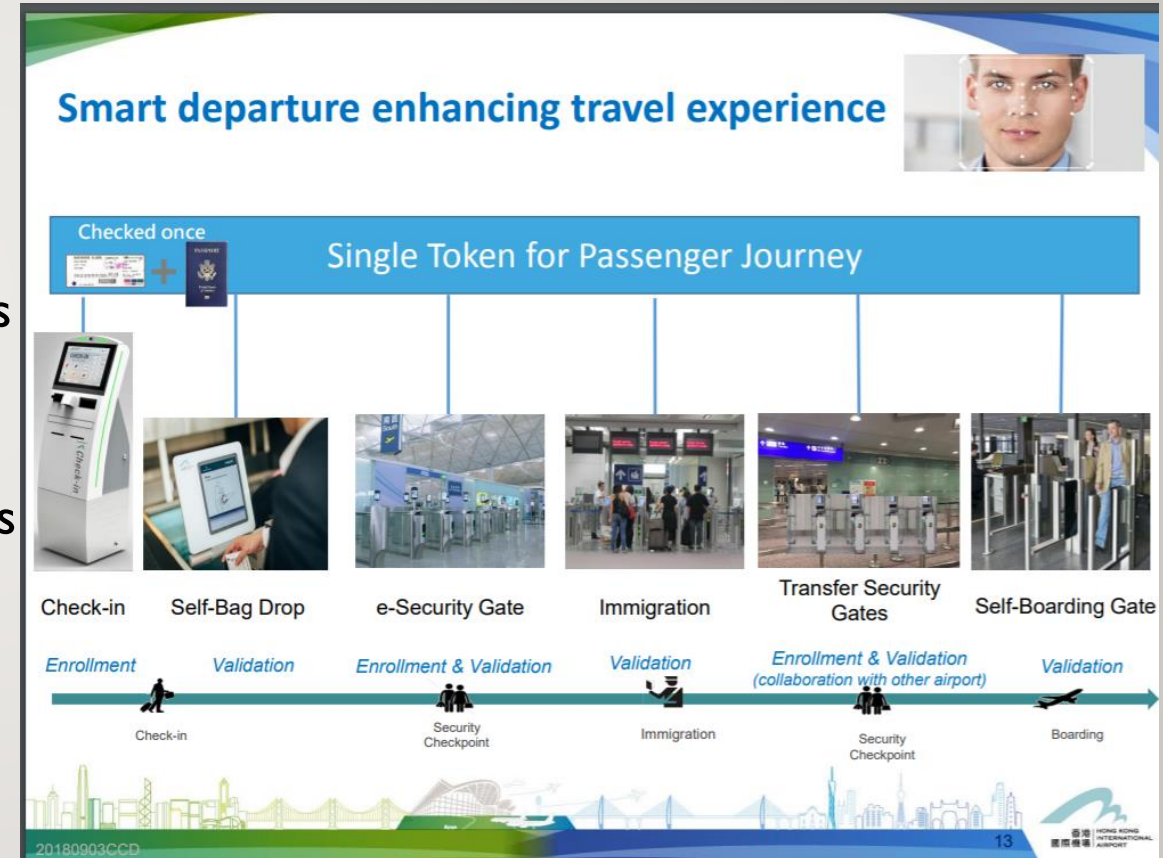
# CASE STUDY: HONG KONG AIRPORT

## BUSINESS GOALS

- Joyful customer experience
- Smartification for People, Business & Operations
- Mindset Change
- Creative Thinking
- Effective use of infrastructure

## DATA SOURCES

- Check-in Kiosks
- Self-Bag Drop Kiosks
- E-Gates
- Passenger Biometrics
- CCTV
- Passenger Apps
- Chatbots
- Robots



# CASE STUDY: HOUSTON AIRPORT

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## BUSINESS GOALS

- Gain insights into passenger data
- Gain insights into car parking
- Share data across TWO airports
- Facilitate Decision Making

## DATA SOURCES

- Leverage Credit Card data of Passengers
- License Plate data
- Develop psychographic profiles of passengers
- Psychographic > Buying Profiles of Passengers

# CASE STUDY: LONDON HEATHROW

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## BUSINESS GOALS

- Study baggage data
- Forecast Baggage flow
- Flag problems in Baggage handling capacity
- Prevent strain on Security Staff
- Re-architect data analytics system written in PERL (old language)

## DATA SOURCES

- Historical Baggage Data
- Unplanned events
- Weather data
- Flight control data
- Security Staff Capacity Data

# POTENTIAL AREAS TO INNOVATE

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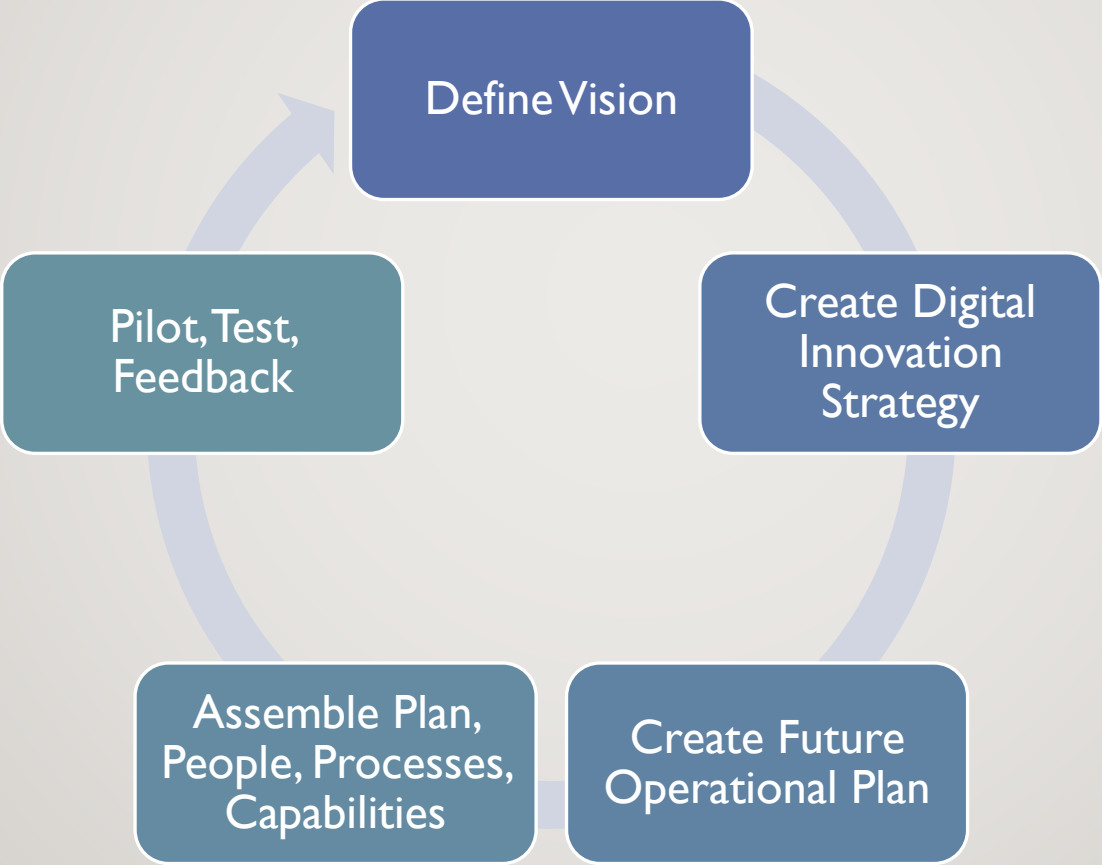
- Epidemic Analytics (Covid-19? Emergency Evacuation?)
- Passenger Footfall/Area & Revenue
- Passenger Service Improvement
- Crowd Analytics
- Predictive Analytics of Delays
- Safety Analytics (Runway, Weather, Terrorism, etc.)
- Facilities Analytics (Bathrooms, Baggage Area, Gate Assignments....)
- Baggage Damaged & Lost Improvement Analytics





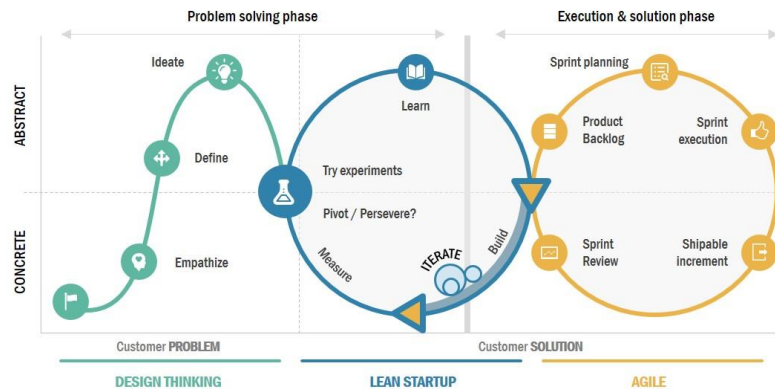
# SIMPLE DIGITAL INNOVATION PROCESS

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# COMBINE INNOVATION + SMAC

Design Thinking + Lean Startup + Agile Diagram



Mobile (Enabled Decision Making)

Social (Engagement+Data Gathering)

Analytics (Airport Data)+AI

Cloud (On-Demand Computing for Airport Applications)