



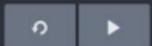
# Sentosa Zoukout 2017

dateTime2

Select Y Axis

12/09 12:00pm - 12/09 12:59pm

0.5x 1x 2x 4x



41,000  
Party Goers

51  
URA sub-zones

One of the biggest  
party events in the  
region

16 hours  
6.30pm to 8:00am

# What we already know – getting in and out of the island is difficult



A screenshot of a Facebook review by Luis Cuzen Cardoso. The review is for 'ZoukOut' and is dated December 10, 2016. The text of the review discusses the difficulty of getting to and from the venue, suggesting a bus system and a taxi bay. The review has 10 likes and 0 hearts. Below the review are buttons for 'Like', 'Comment', and 'Share'. At the bottom is a comment input field with a 'Write a comment...' placeholder and icons for emojis, photos, GIFs, and stickers.

 **Luis Cuzen Cardoso** reviewed ZoukOut — 4+  
December 10, 2016 · 🌐

Need to improve public transport from the venue with international festival go's finding it hard to get back to there hotel. I think a bus system where it's takes the festival go's into the cbd of the city near marta bay sands area. Taxi bay created after the festival could improve this. Thanks

  10

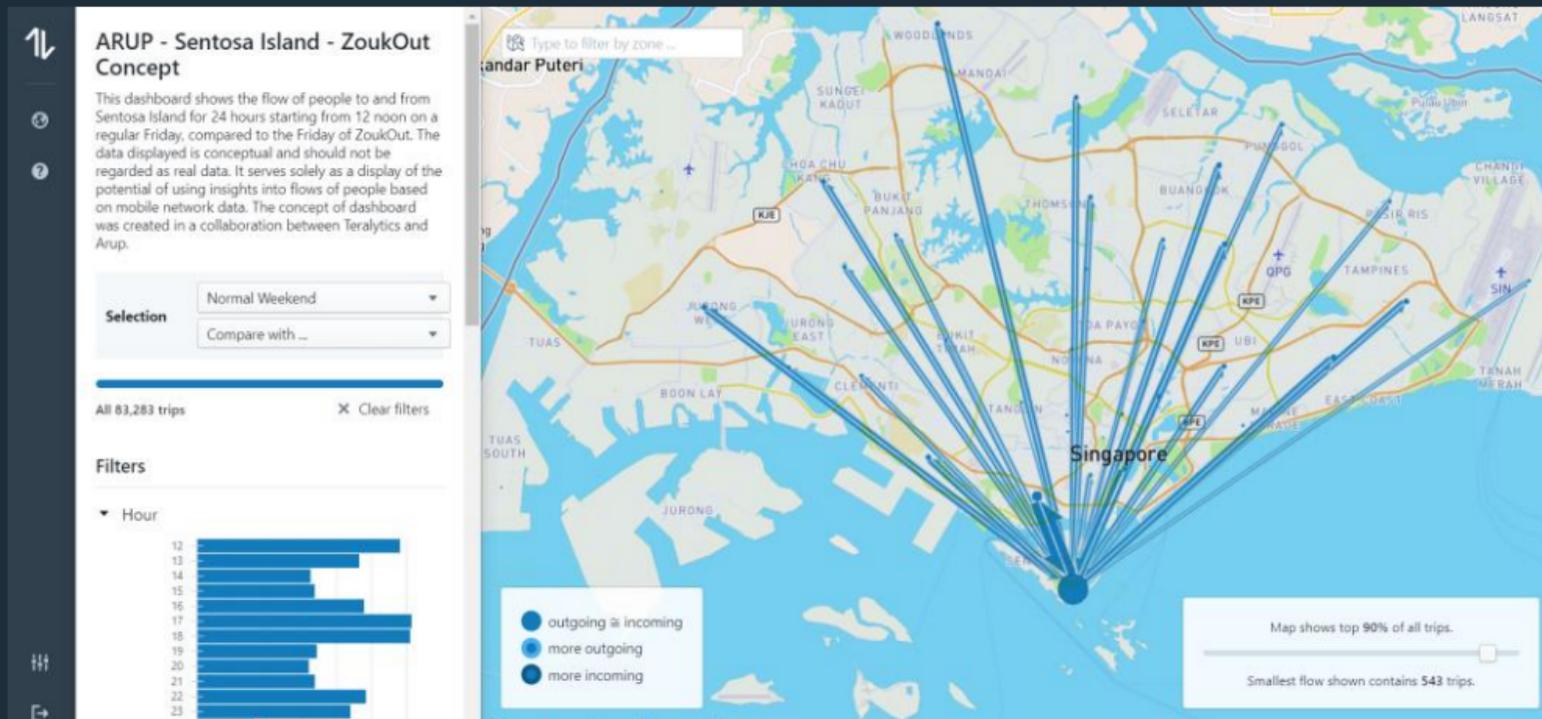
 Like       Comment       Share

 Write a comment...    

## Congestion is not without consequences

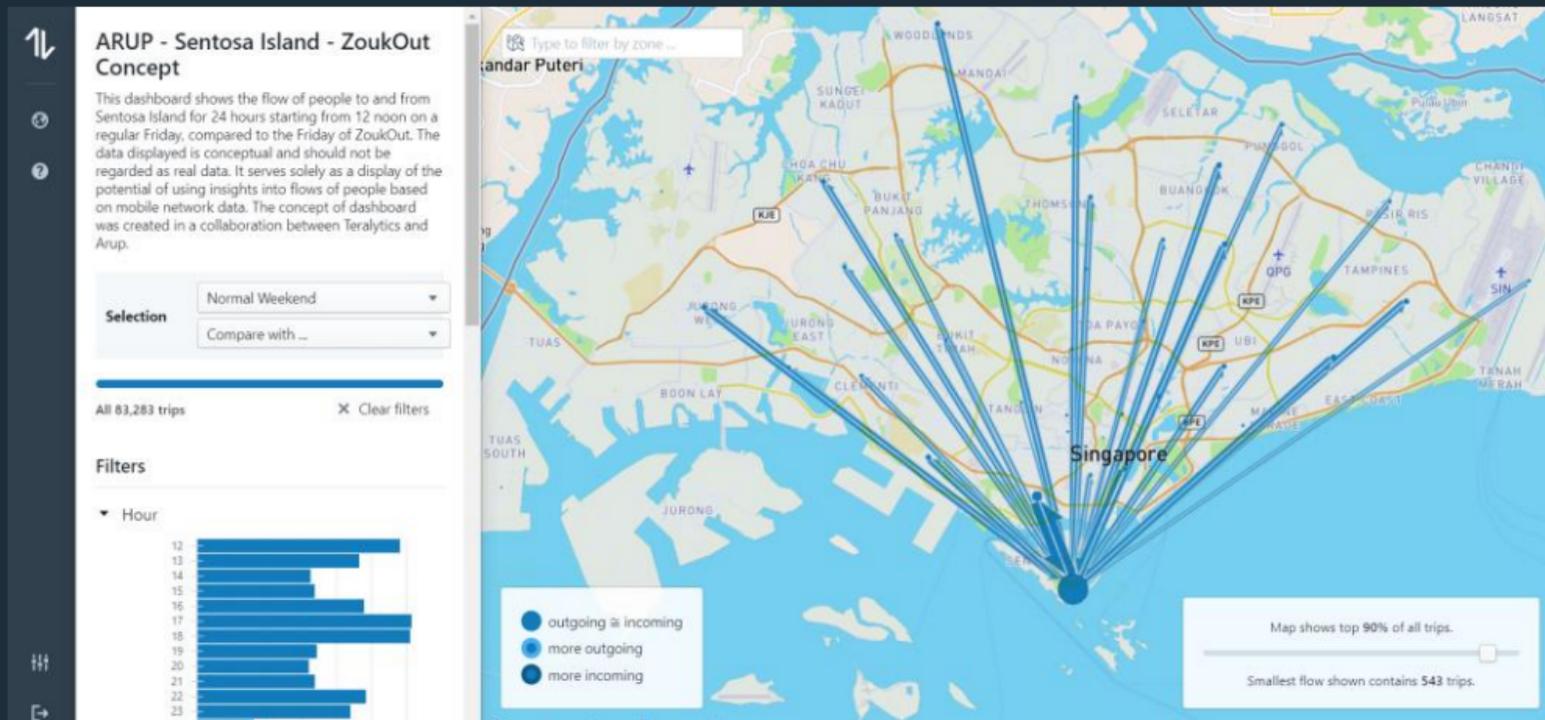
- Affects experience of Zouk Out Visitors
- Affects experience of regular visitors
- Puts unwanted pressure on transportation infra
- Missed business opportunity linked to over-polarization of visits

# Arup partnered with Teralytics who provided real time conceptualized mobile data across the day



# Where who when how

Arup partnered with Teralytics who provided real time conceptualized mobile data across the day



Where  
who when how



More granular understanding of peak periods and volumes

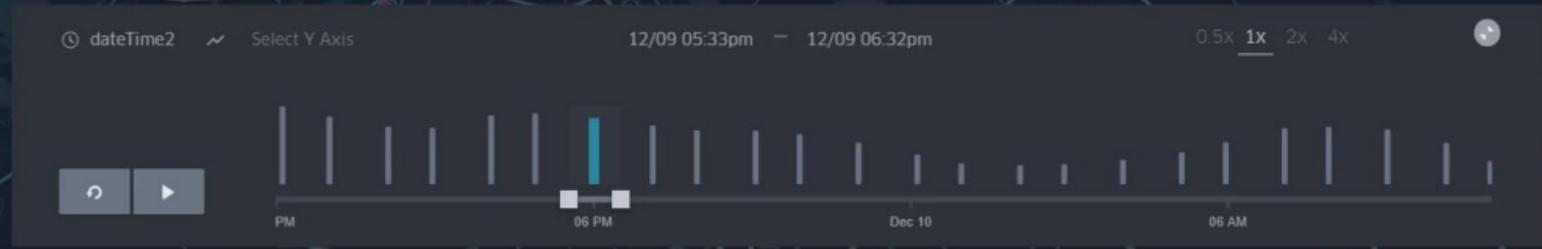
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5pm

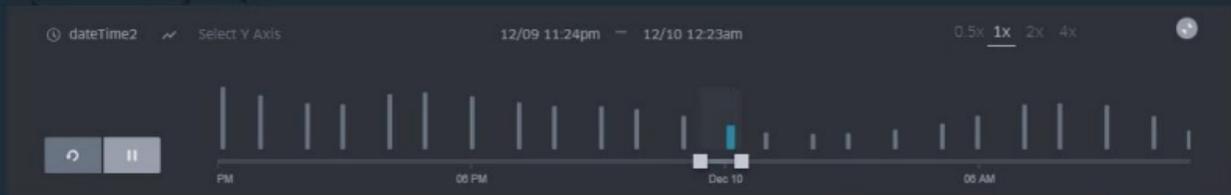
12,000 people  
peak arrivals



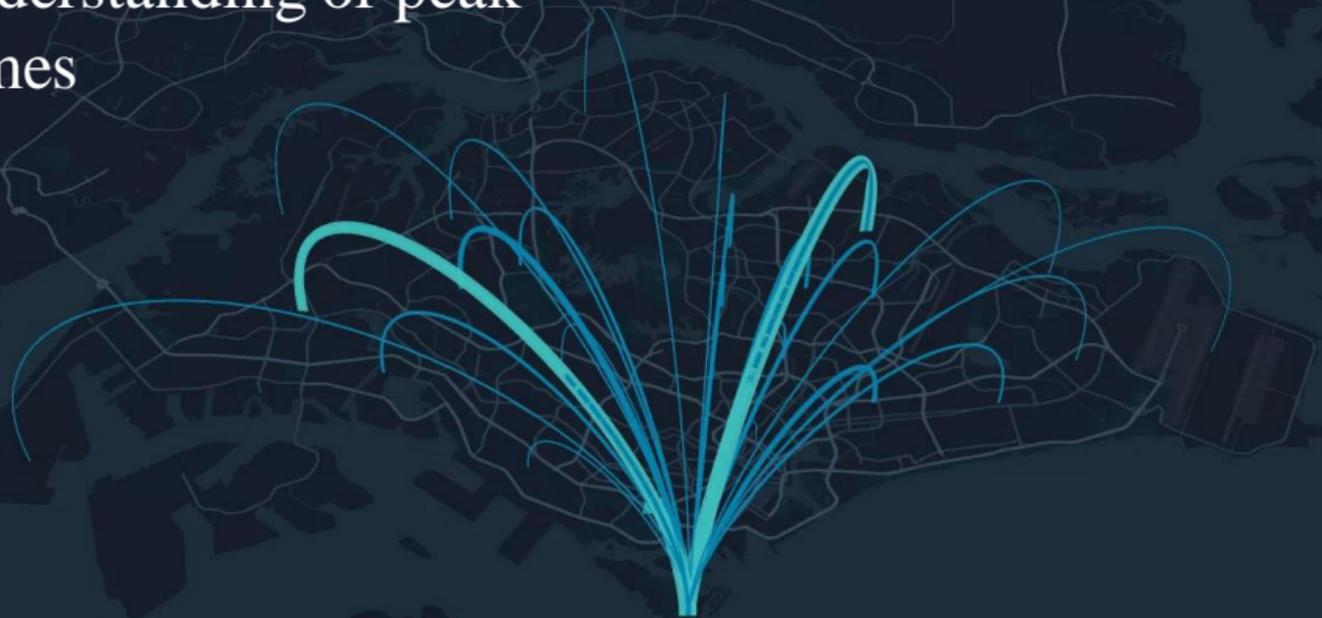
More granular understanding of peak periods and volumes



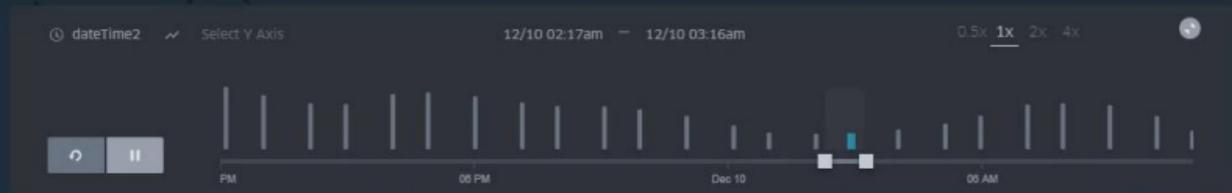
11pm  
peak departures



More granular understanding of peak periods and volumes



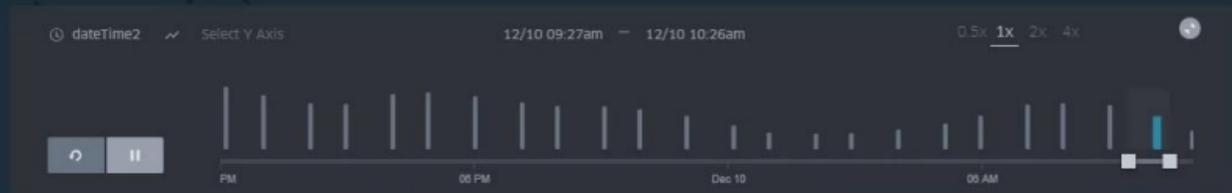
2am  
long queues



More granular understanding of peak periods and volumes

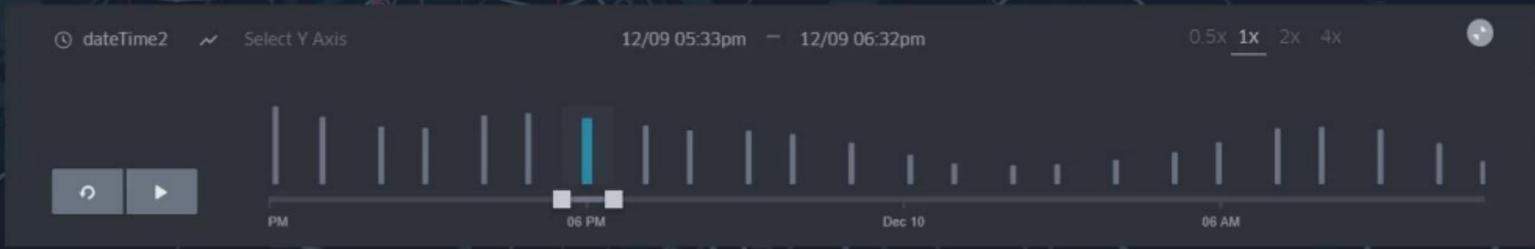
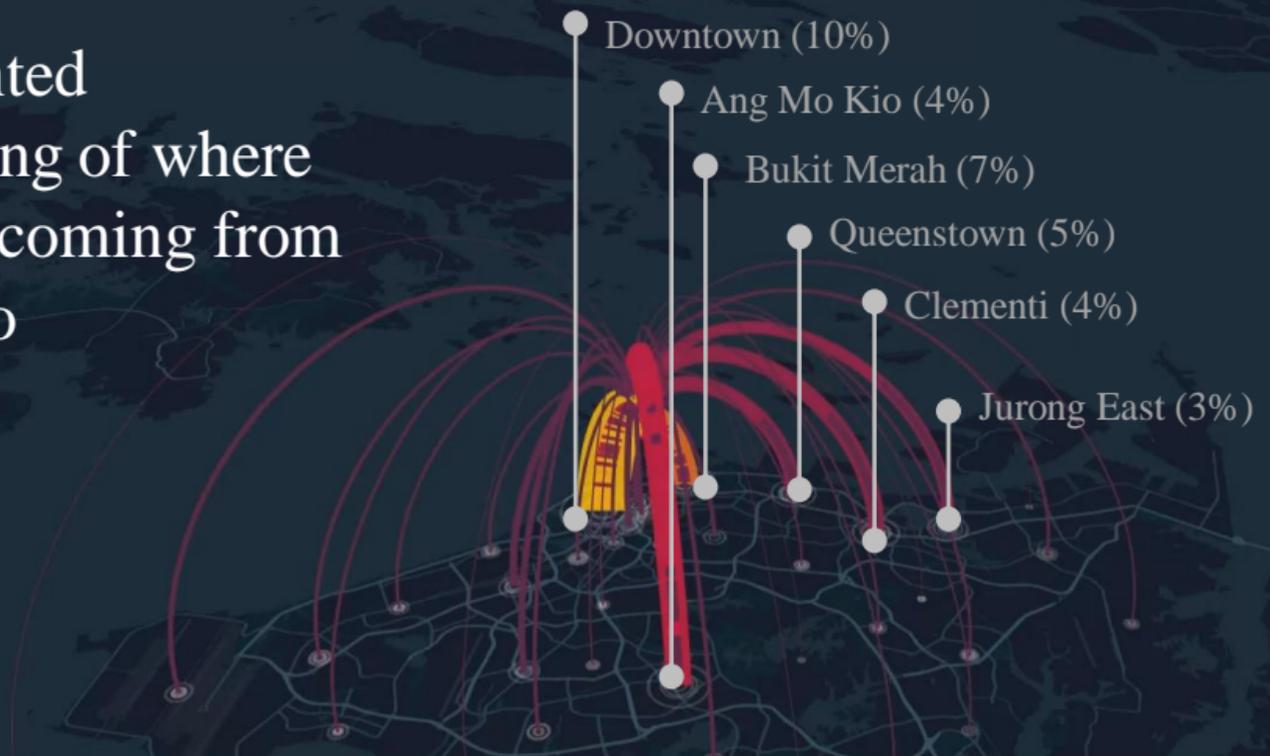


9am  
breakfast



Unprecedented understanding of where visitors are coming from and going to

5pm  
peak arrivals



Anticipate

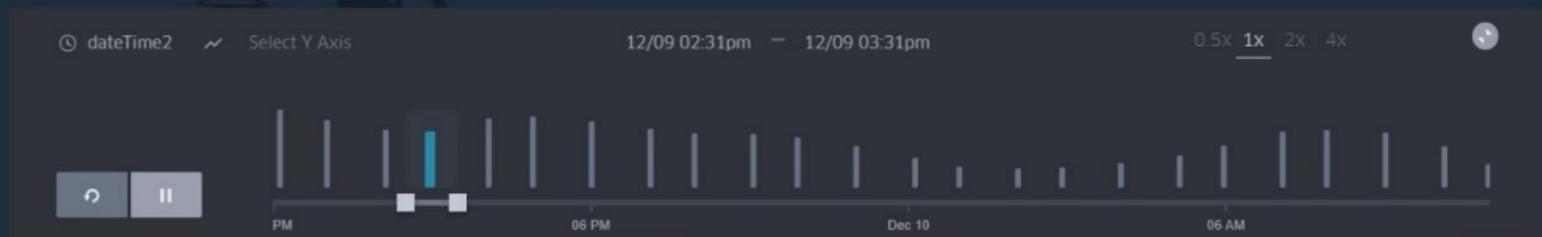
Plan

Mitigate

# 1. De-Peaking



2pm  
gradual arrival



# 1. De-Peaking

- Earlier arrivals can potentially generate extra revenue
- Decreases pressure on transportation infrastructure
- Improves overall event experience of Zouk Out visitors
- Minimizes negative externalities on regular visitors



Incentives



Information Transparency



Direct connections

# 1. De-Peaking

Context aware incentive / gamification schemes to optimize the arrival curve (e.g. \$1 discount on sentosa express from 3pm to 4pm)



Incentives

Real time notifications with precise travel time estimates (e.g. leave now and your trip is going to be 20min rather than 1h long)



Information Transparency

Arrange for direct shuttles from high density locations (e.g. CBD) leaving at opportune times to further de-peak

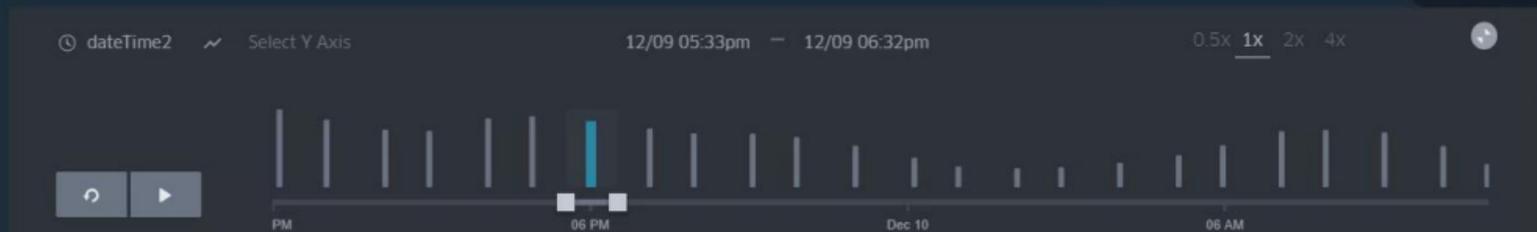


Direct connections

# 2. Peak Management



Assuming that de-peak-ing takes care of 20% of total peak volume (price elasticity, time constraint elasticity, scheme penetration), Sentosa must still manage a large amount of people at peak time



# 2. Peak Management

Data provides a real time understanding of people trying to leave at what time versus capacity of transportation, which can drive real time notifications / incentives to optimally allocate users (e.g. 1am bus is booked but 3am bus is relatively empty, here is \$2 discount to get a coffee in a nearby Starbucks in the meantime)

Data can directly inform routes and packages for grab shuttle, based on historical information, not only for point of origin but also destination, far more accurate than pre-booking

Real time tracking of people trying to leave vs. availability of transportation can also inform public transportation on demand in real time, and lead to dynamic route modification and pricing based on changing conditions



Transport Allocation



Public Transport on demand



Direct connections

This is purely from incomplete and conceptualized data – more advanced applications could arise from more complete / complex data sets



Combining user preference and commuting patterns could lead to refined user archetypes, which could help deliver service that solve specific problems for specific users (rather than purely handling volume related issues)



Mobile data focusing on localization within the island can form the backbone of planning optimization, service optimization, event impact measurement, based on granular understanding of hot / cold zones and people flows



Data segmenting between types of transportations could also shed led on how to optimize transfers between different modes, or incentivize the use of alternative modes of transportation

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