

Lessons Learned on Covid 19 Related Lockdowns

2 June 2022



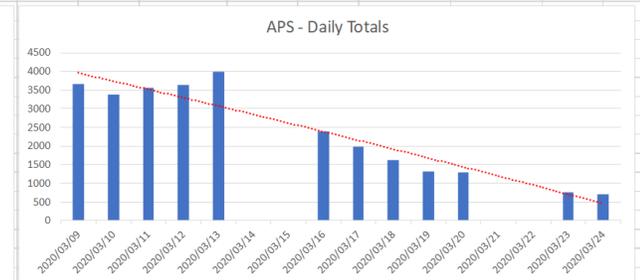
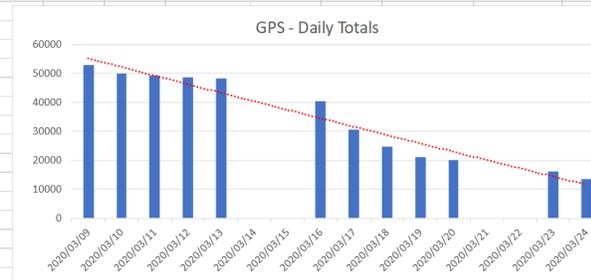
Background

1 to 23 March 2020

- International and local media reports on looming pandemic
- All Gautrain and bus operations were continued
- Train timetables developed to ramp down services to allow disinfecting after each train and bus trip
- Steady decline in ridership
- Awareness announcements and communication to passengers
- Sanitising measures at stations
- Additional cleaning staff sourced for stations, trains and buses
- Ridership decreased as public perception of risk increased

Date	DOW	GPS	% Change Prev Day	% Change Prev Week
2020/03/09	Mon	52758		
2020/03/10	Tue	49935	-5,35%	
2020/03/11	Wed	49411	-1,05%	
2020/03/12	Thu	48708	-1,42%	
2020/03/13	Fri	48278	-0,88%	
2020/03/16	Mon	40540	-16,03%	-23,16%
2020/03/17	Tue	30734	-24,19%	-38,45%
2020/03/18	Wed	24566	-20,07%	-50,28%
2020/03/19	Thu	21099	-14,11%	-56,68%
2020/03/20	Fri	20152	-4,49%	-58,26%
2020/03/23	Mon	16309	-19,07%	-59,77%
2020/03/24	Tue	13670	-16,18%	-55,52%

Date	DOW	APS	% Change Prev Day	% Change Prev Week
2020/03/09	Mon	3659		
2020/03/10	Tue	3372	-7,84%	
2020/03/11	Wed	3559	5,55%	
2020/03/12	Thu	3632	2,05%	
2020/03/13	Fri	4003	10,21%	
2020/03/16	Mon	2388	-40,34%	-34,74%
2020/03/17	Tue	1980	-17,09%	-41,28%
2020/03/18	Wed	1615	-18,43%	-54,62%
2020/03/19	Thu	1314	-18,64%	-63,82%
2020/03/20	Fri	1302	-0,91%	-67,47%
2020/03/23	Mon	765	-41,24%	-67,96%
2020/03/24	Tue	715	-6,54%	-63,89%



Background

23 to 27 March 2020

- National Lockdown announced on 23 March 2020
- Planning for Two scenarios
 - Essential Service
 - No Service
- Minister's Announcement suspending all rail services
- Regulations under Disaster Management Act became applicable
- Movements limited to essential goods and services
- Moving to lockdown
 - Unions and employees informed
 - Essential staff identified
 - System remained live
 - 400 security staff active on system
 - Around 40 operational and maintenance staff
 - Two trains per day to be run to check operational and system integrity
 - Maintenance staff on standby

Background

28 March 2020 – 3 May 2020

- Level 5 Lockdown
- No train or bus services run
- Focus on security of system
- Preparation for reopening on 4 May 2020
- Business continuity plans implemented and worked well

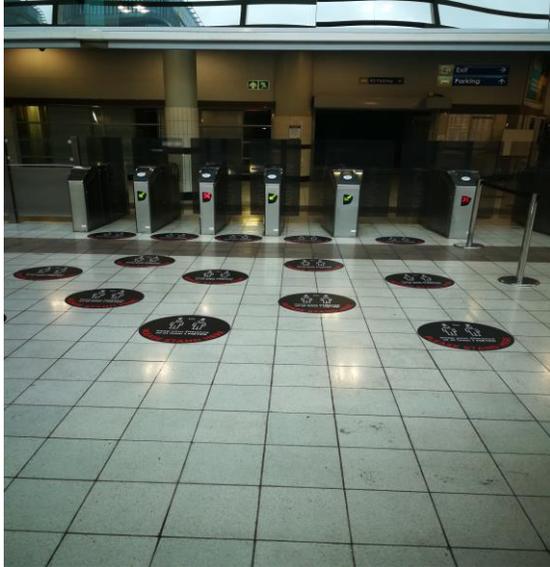
Background

4 May 2020 to 28 February 2021

- Recommencing Operations
- Level to Level 1 and back again as second and third waves hit
- Active measures in place:
 - Hand sanitisers available at all stations, spatial separation measures are in place on all platforms with decals indicating standing and sitting areas for passengers
 - Seats on trains and buses were closed off so that only 50% of seats may be used to maintain suitable distances between passengers
 - Trains and buses are disinfected with SABS approved products after each trip as well as cleaned and disinfected every night at the depots
 - All PPE for staff was put in place
 - Masks are compulsory and security focuses on this in trips on trains and buses
 - OR Tambo Airport Station reopened on 15 June 2020
 - Thermal scanning and spray booth ran for 6 weeks at 2 stations before being shut down end May 2020 on advice of Corona Virus Council

Background

4 May 2020 to 28 February 2021



Background

4 May 2020 to 28 February 2021



GAUTRAIN
FOR PEOPLE ON THE MOVE

Mask it a habit...
Wearing a face mask minimises the spread of germs and is compulsory when travelling onboard the Gautrain.

gautrain.co.za | 0800 GAUTRAIN

GAUTRAIN
FOR PEOPLE ON THE MOVE

Sanitise, then mobilise...
Use the hand sanitisers available at stations, on buses and midi-buses.

gautrain.co.za | 0800 GAUTRAIN

GAUTRAIN
FOR PEOPLE ON THE MOVE

A little extra distance goes a long way...
Protect yourself and others, keep a social distance and show you care.

gautrain.co.za | 0800 GAUTRAIN

GAUTRAIN
FOR PEOPLE ON THE MOVE

Don't be afraid to lose touch...
Tag in and out with your Contactless bank card.

gautrain.co.za | 0800 GAUTRAIN

GAUTRAIN
FOR PEOPLE ON THE MOVE

Top-up online, not in line...
It's safer to use the online service to top-up your Gautrain card.

gautrain.co.za | 0800 GAUTRAIN

GAUTRAIN
FOR PEOPLE ON THE MOVE

Help combat infections...
Stay at home if you feel unwell, because it's the caring thing to do.

gautrain.co.za | 0800 GAUTRAIN

International Benchmarking

World Bank Global Benchmarking Report

- November 2020 Report Compiled by World Bank comparing Gautrain with global practice in the pandemic by doing review of best practice concerning operational measures under public transport systems around the world
- It stated that:

“As with other public transport systems around the world, the COVID-19 pandemic has had a significant impact on the Gautrain Rapid Rail Link (Gautrain)”
- It’s main findings were:

“To manage the impact of COVID-19 related lockdown measures, operators are adapting to rapidly changing circumstances and are applying a “learning by doing” approach. Emerging good practice regarding operational measures for prevention of COVID-19 transmission, applying to both passengers and employees, which fall into six overall categories: **prevention; social distancing; protective equipment; sanitising; ventilation and communication**. As per the GMA’s self-evaluation, it has adopted all recommended measures in these six categories”

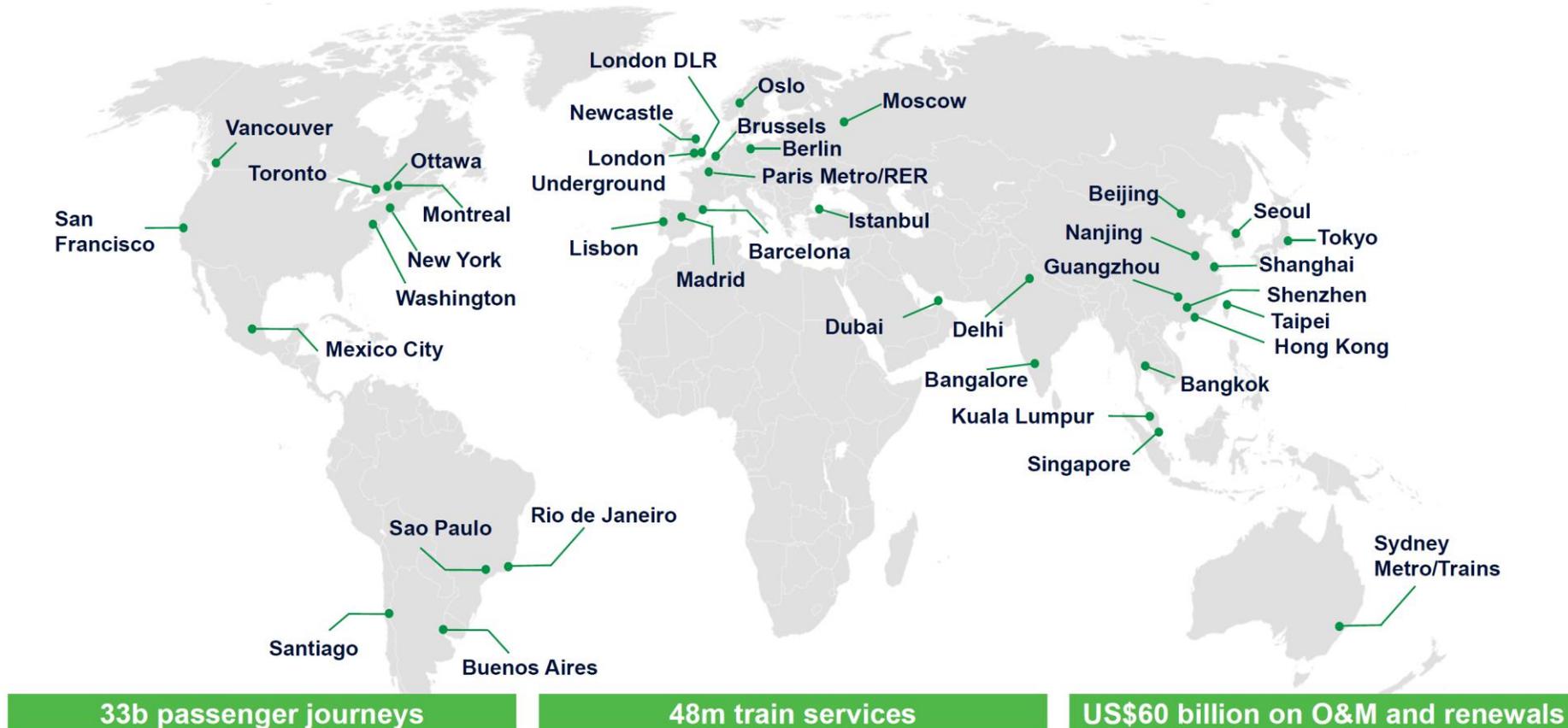
“In the long-term, both contracting authorities and transport operators will need to more broadly reflect on how to deliver more resilient, sustainable and human centric mobility systems that attract demand and appropriately bridge revenue shortfalls suffered by transport operators. This will include considerations of risk allocation, force majeure provisions, the definition of a pandemic, as well as designing more innovative financing solutions for projects.”

International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

Focus on COVID-19 Impacts and Future Implications

- Survey across 42 international metro systems

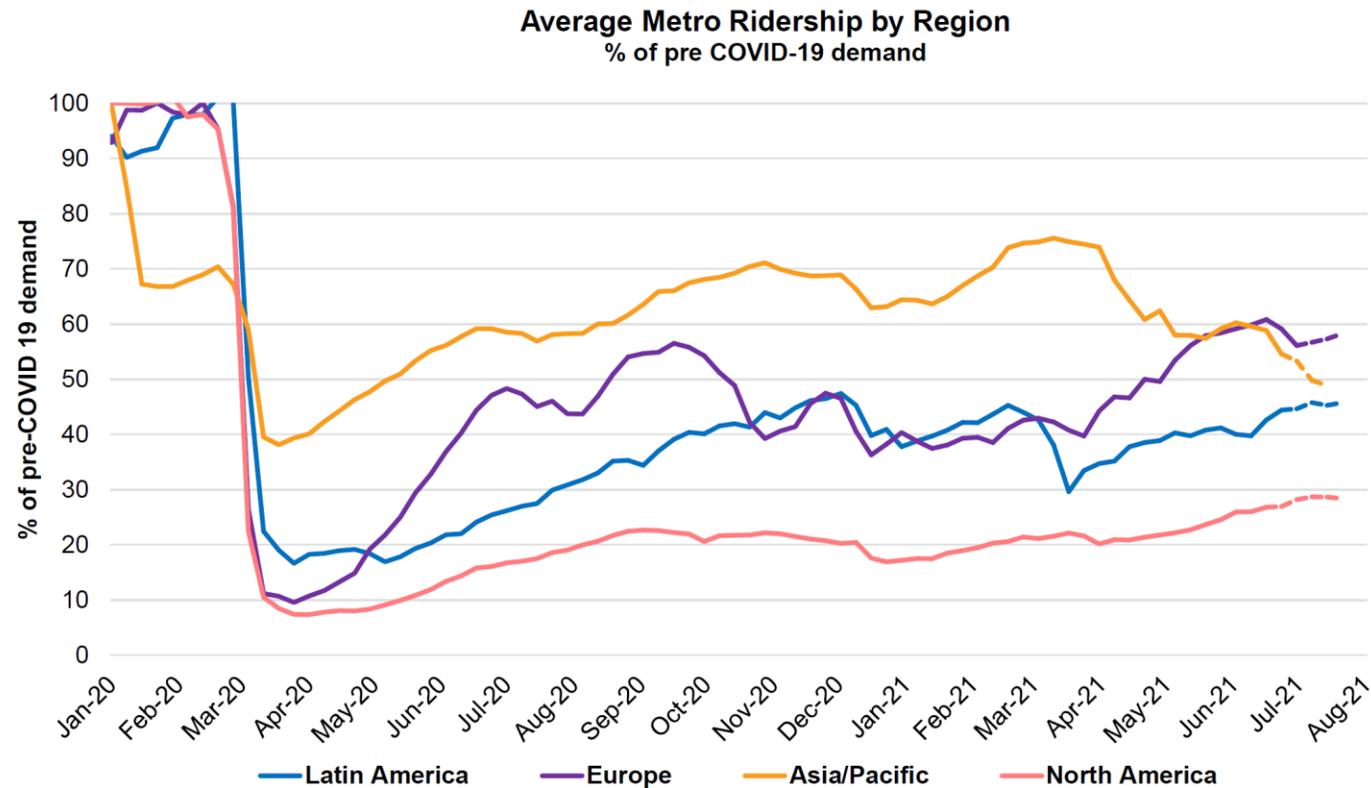


International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Metro Demand during Covid 19 by region

- ▶ Least impact and strongest recovery in Asia-Pacific until recent months
- ▶ Metros in Mainland China have returned to near-normal levels of demand and continue to expand
- ▶ Full closure in India for ~half of 2020 and in May/June 2021
- ▶ North America remarkably consistent, with signs of slow but steady recovery emerging



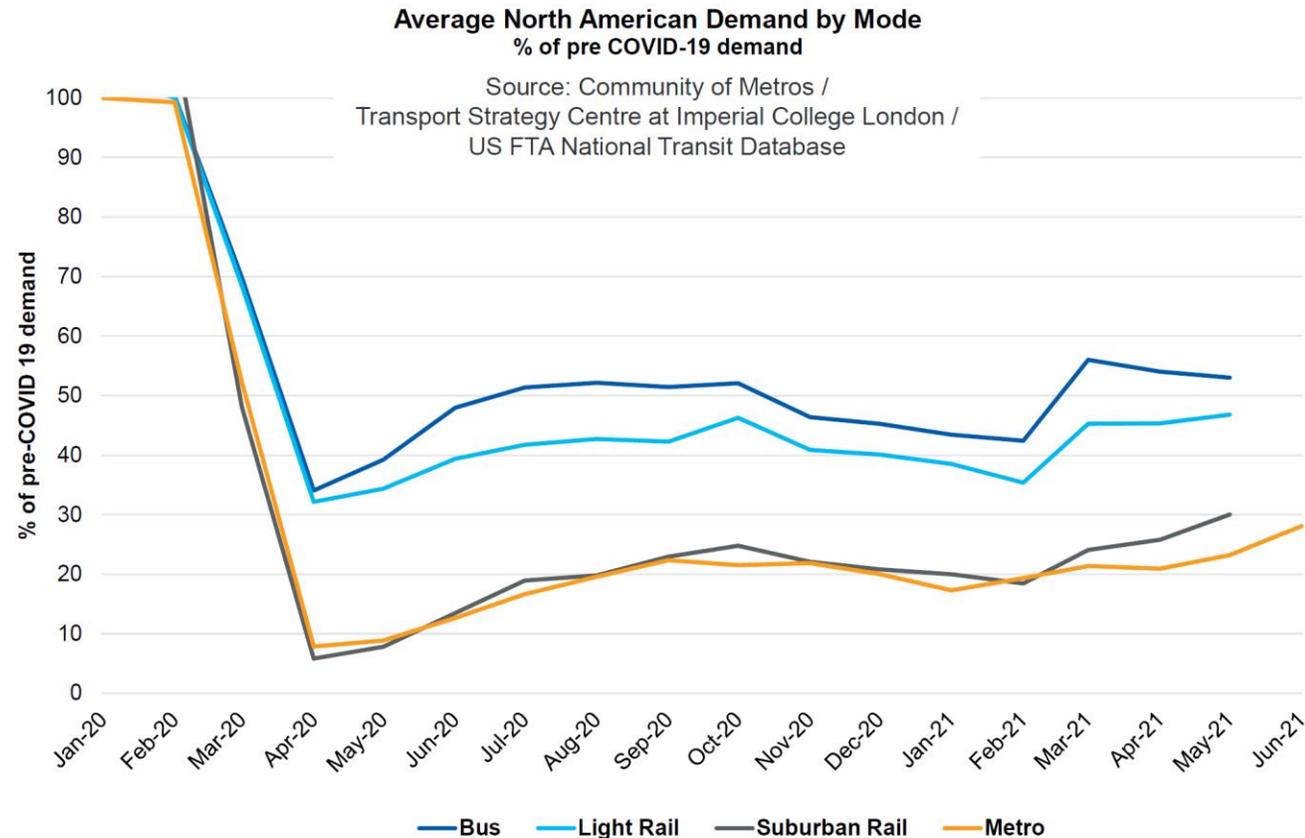
Source: Community of Metros/Transport Strategy Centre at Imperial College

International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

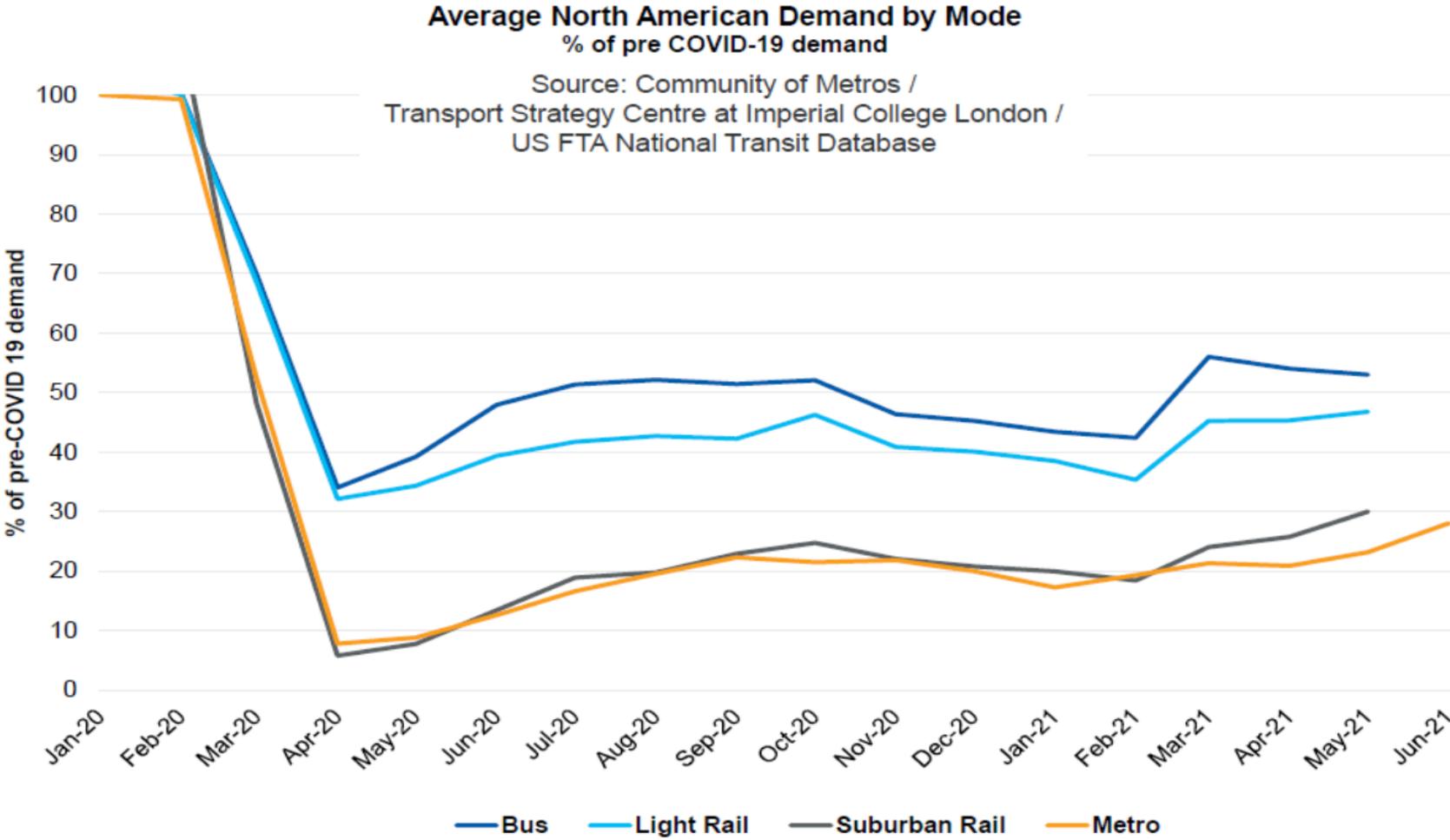
- Mode Comparison in North America showed buses and light rail recovered better than suburban rail and metro rail

- ▶ Similar (but slightly smaller) bus-metro differences generally observed in Europe
- ▶ Several interrelated factors drive this difference:
 - Trip length and purpose
 - Customer demographics
 - Home working opportunities
 - Network orientation
 - Alternatives (especially cars)



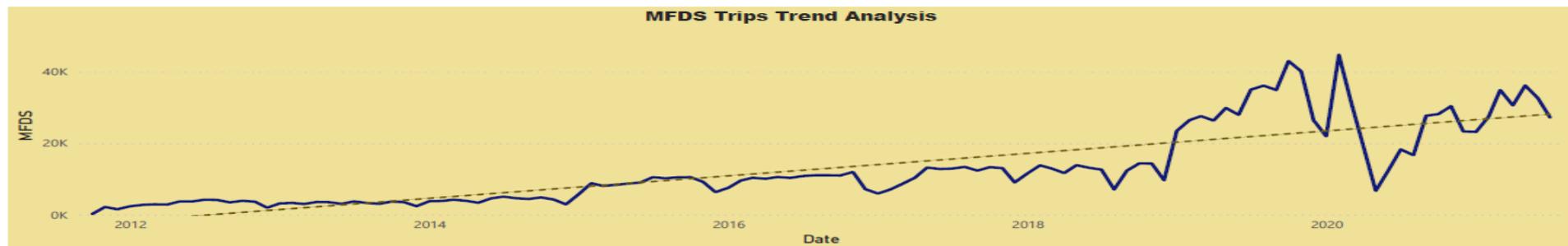
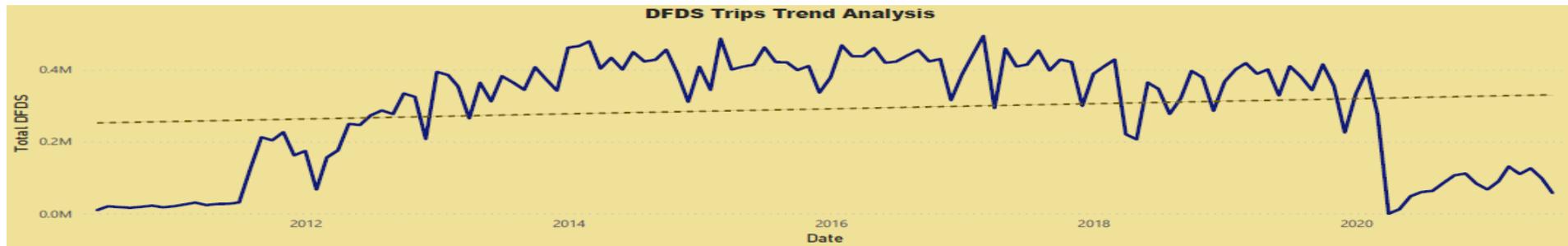
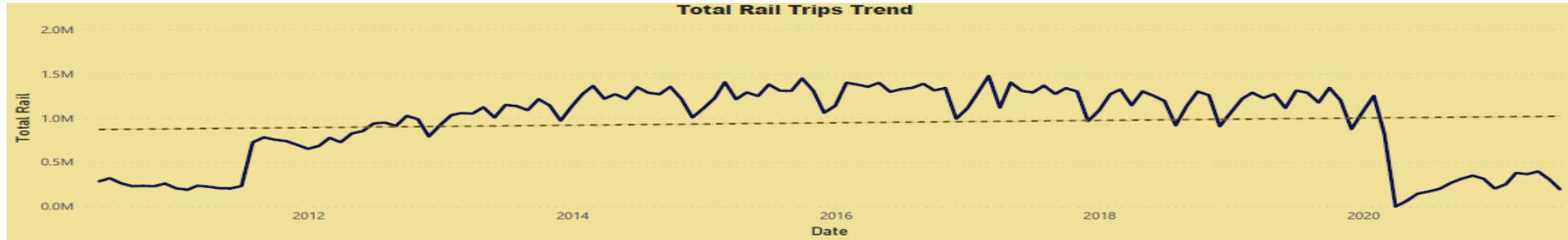
Cross Modal Comparison

Rail Lags Other Modes by 20-30%



Cross-Modal Comparison

The Midi-bus Success Story



International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Common Changes in Ridership patterns that were observed globally



Timing (79%)

- ▶ More off-peak travel
- ▶ Earlier peak
- ▶ Flattening peak
- ▶ **No consensus on weekday vs. weekend travel**



Ticket Type (75%)

- ▶ Less season tickets/ monthly passes
- ▶ More pay-as-you-go and smart card payments



Location (71%)

- ▶ Less central business district (CBD) travel
- ▶ More local neighborhood travel
- ▶ **No consensus on shorter vs longer journeys**



Demographics (50%)

- ▶ More younger customers
- ▶ More lower income customers
- ▶ Fewer students
- ▶ Fewer tourists
- ▶ Fewer office/ professional workers
- ▶ **No consensus on leisure vs commuter journeys**

International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Change in Service Approach – Enhanced Cleaning

► London Underground



► Hong Kong MTR



► Metro Rio



► New York NYCT



► Seoul Metro



International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Change in Service Approach – Customer Information

▶ Metrô de São Paulo



▶ Sydney Trains

Leave a space
between yourself
and other customers



▶ Metro Lisboa



▶ Metro Rio



▶ Berlin BVG



▶ Oslo Sporveien



International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Change in Service Approach – Permitted Travel

► New York NYCT



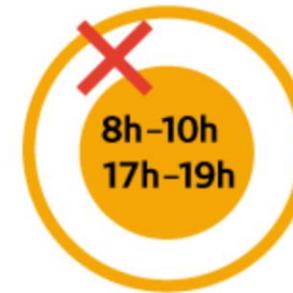
► Sydney Trains



► London Underground



► Metro de Lisboa



Avoid traveling at rush hours

If your commitment allows it, whenever you can do not travel at rush hours, because you are more conducive to crowding people. Choose to travel in the hours of the least movement of customers.

International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Change in Service Approach – Crowd Control Measures

Most Metros:	Some Metros:	Few Metros:
Audio announcements (PAs)/ passenger information displays (PIDs)	Seat markings/cordons	Widened pavements outside busy stations
Distancing markings / paint in ticket halls, corridors and platforms		Seats/areas near to driver cordoned off
	Queue/ group entry system outside station	
Manual fare gate limits	Encourage digital / advanced / touch-free fare payments	Mobile stewards in trains to enforce distancing
Posters and signage	 1 SMS = 1 TICKET BUS	Social distancing tracker to re-distribute stewards to busiest stations
One way systems, including separate entries and exits to divide flows		
Dedicated stewards/ ambassadors		
Distancing stickers on train floors		

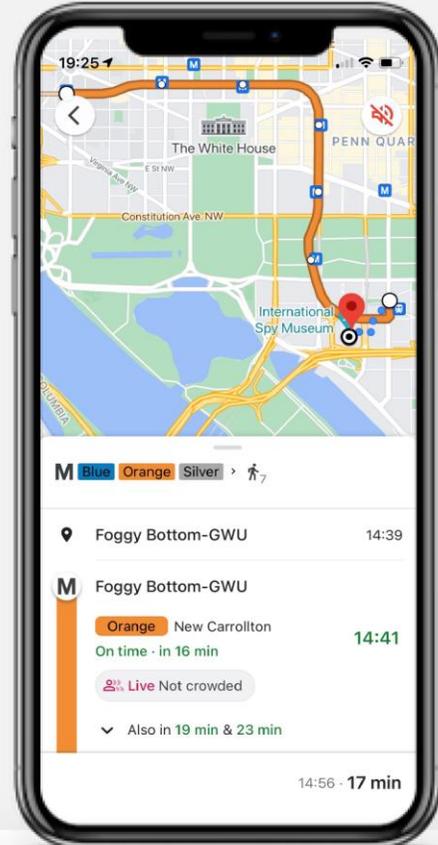
International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Change in Service Approach – Crowding Information

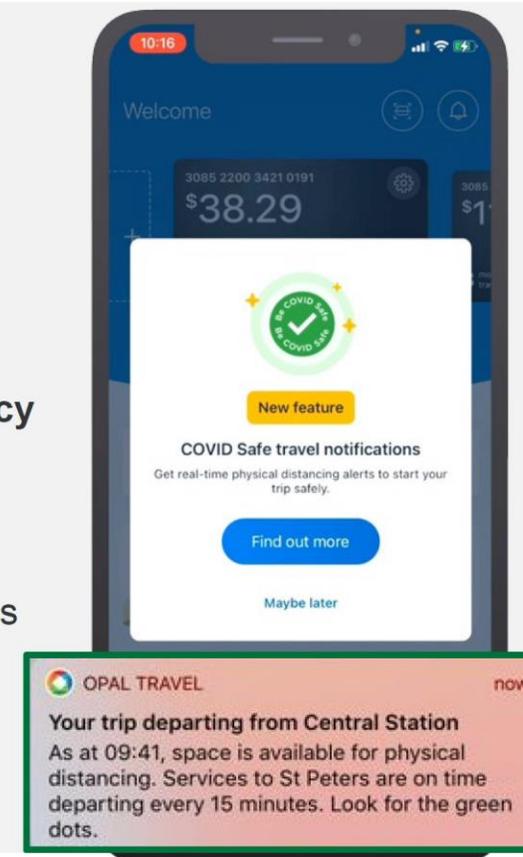
Washington WMATA Using Google GTFS-Realtime

- ▶ Predicted occupancy available on **Google Maps** since December
- ▶ Three crowding categories:
 - ‘Not crowded’ (many seats available)
 - ‘Few seats available’
 - ‘Full’
- ▶ Crowding definitions can be adjusted as requirements change



Sydney COVID-Safe Travel Notifications

- ▶ Opt-in advanced **personalised alerts** notify user of:
 - Disruptions that may affect your trip
 - **Predicted occupancy information**
 - COVID rules and policies
- ▶ Notifications 30 minutes before regular train **based on recent travel patterns**



Customer Intent – Driver based analysis

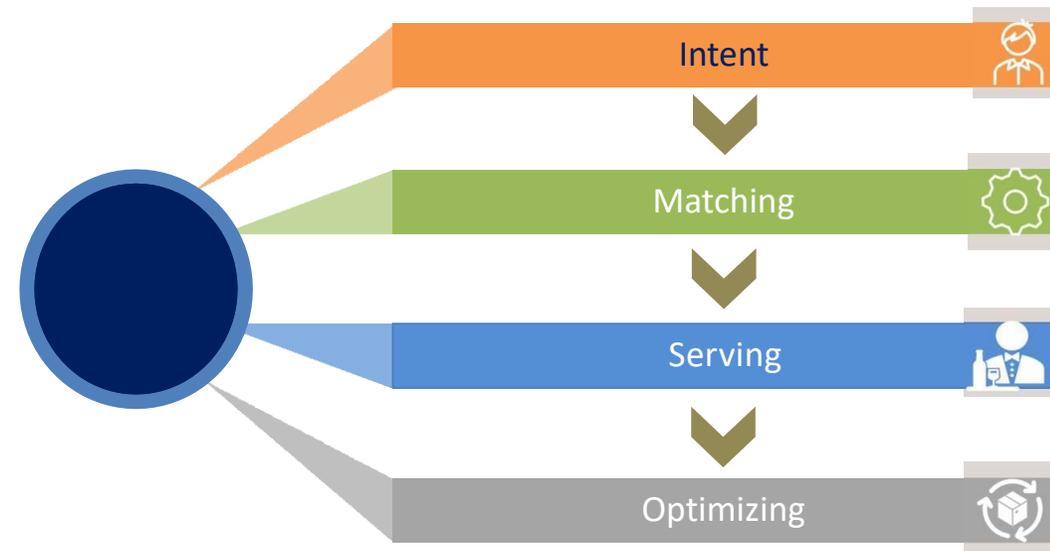
Customer Intent - What are the thoughts directing a customers' decisions or actions toward a particular event.

The **in-the- moment** purpose

Trend based analysis vs. External driver-based analysis is highly valuable in helping understand the **true value-drivers or levers** of the Gautrain, and how changes in these drivers can impact future Gautrain outcomes. (as opposed to assumption-based planning)

Customer Intent is the External Driver that is being **analysed**.

This is where international best practice is currently



External-Driver Based Analysis

Passenger Supply & Demand Analytics: GPS Route

Date

Time
 AM
 PM

Stations

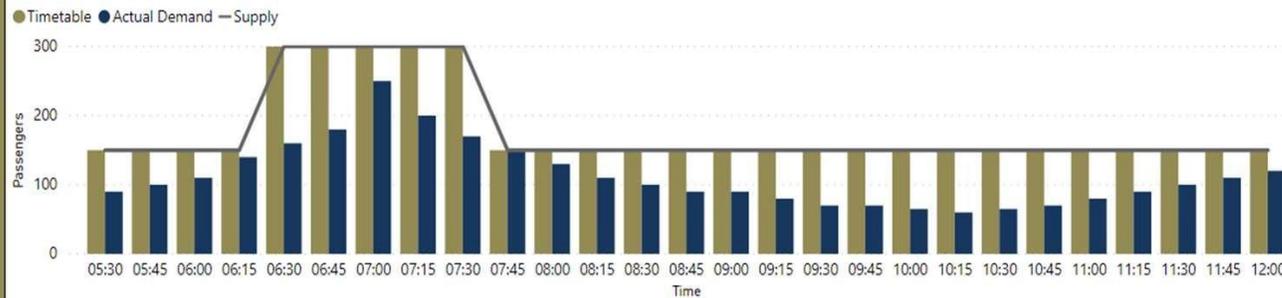
- Select all
- Hatfield
- Pretoria
- Centurion
- Midrand
- Marlboro
- Sandton
- Rosebank
- Park

Train Configuration

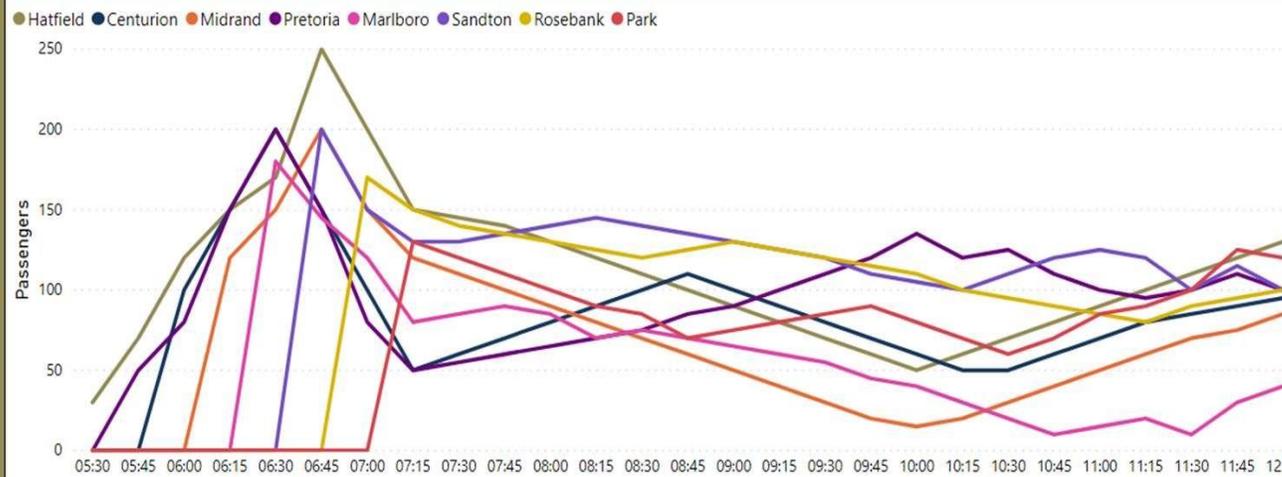
- 4 Car
- 8 Car

Average Passenger Wait Time
18min

Morning Passenger Analytics



Morning Passenger Route



- **Timetable – Gautrain schedule**
- **Actual Demand – Customer Intent from whensbusy customer intent app**
- **Supply – 4 or 8 car train**
- **Train Schedule**

Over-Crowding Management

Gautrip App Plug-in

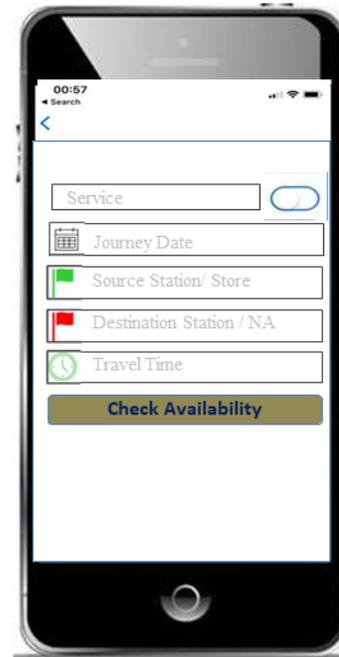
Step 1

Home Page
(auto-geolocate)



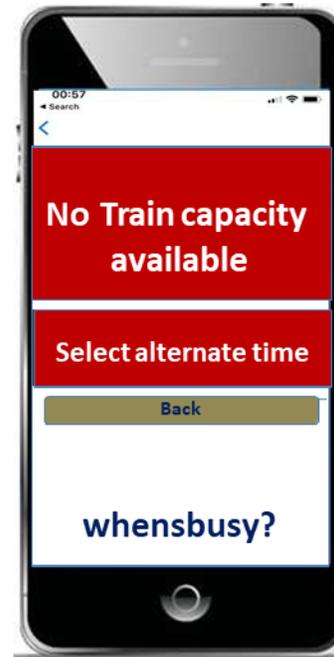
Step 2

Select service and time



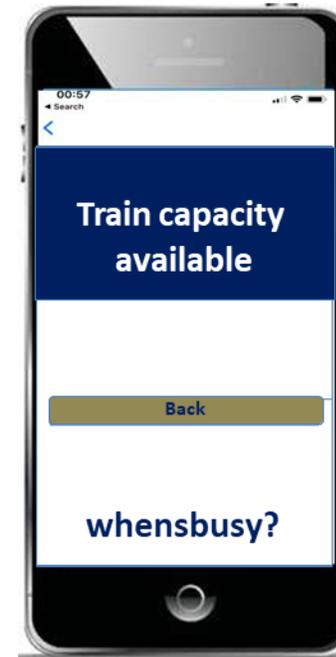
Step 3

No Capacity

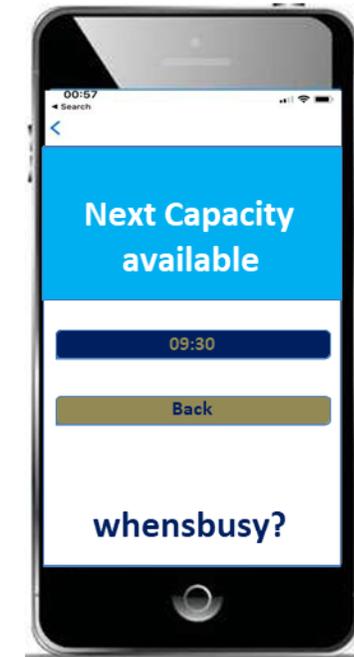


Step 4

Available Capacity



Recommender Engine



Over-Crowding Management

Measuring Beyond Covid-19



Train

Get train schedule, capacity and frequency - all at your finger tips



Analytics

- External - driver based metrics
- Consumer intent and behaviour reports
- Station, time and frequency metrics



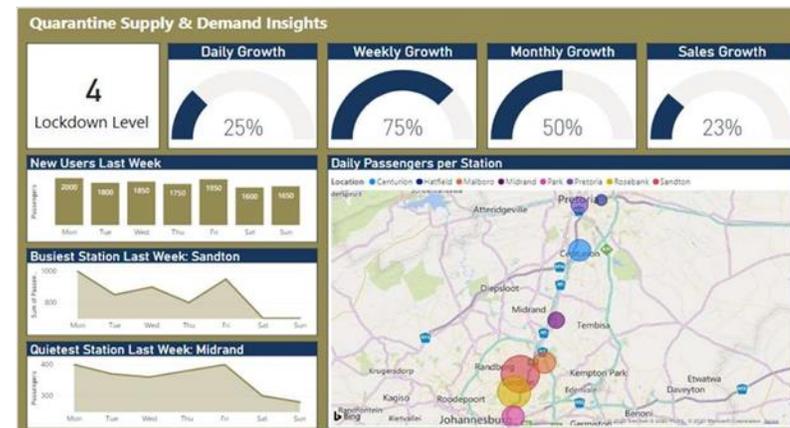
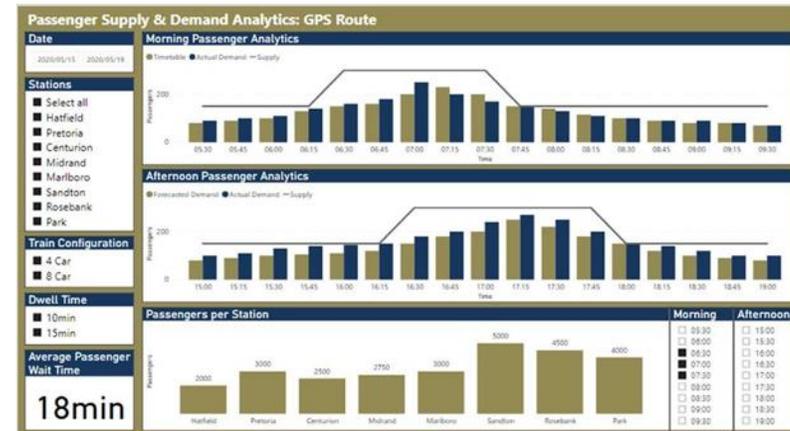
Improved System config. management

- Improve customer experiences with better predictions and response times to their impact on the supply – **LEAVE NO ONE BEHIND**



Integrate with Gautrain services

- Optimize transportation and logistics processes



International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Fare Changes and Promotions



Basic / Single Fares

- 20% fare relief in 2020, 5% fare relief in 2021 (HK)
- Bus transfer discount (DC)
- Digital payment discount (RJ)



Off-Peak Fares

- Flat, reduced weekend fares (DC)
- Discounted weekend travel cap (ST)



Travel Cards and Season Tickets

- New wkend travel pass and 24-hr senior tickets (Tk)
- 40-50% discounts on all passes (DC)
- New 'flex' season tickets (Bs)



Cultural/ Events

- Combined metro and attraction entry fare (**Tk**)
- Season ticket holders can use PT nationwide (**Bn**)
- Children travel free for summer (**Nc**)
- Free Labour Day weekend fares (**Vc**)
- 'Culture Ticket' with €1 donation (**Bn**)
- Promotional fares tied to in-station retail (**Ot**)

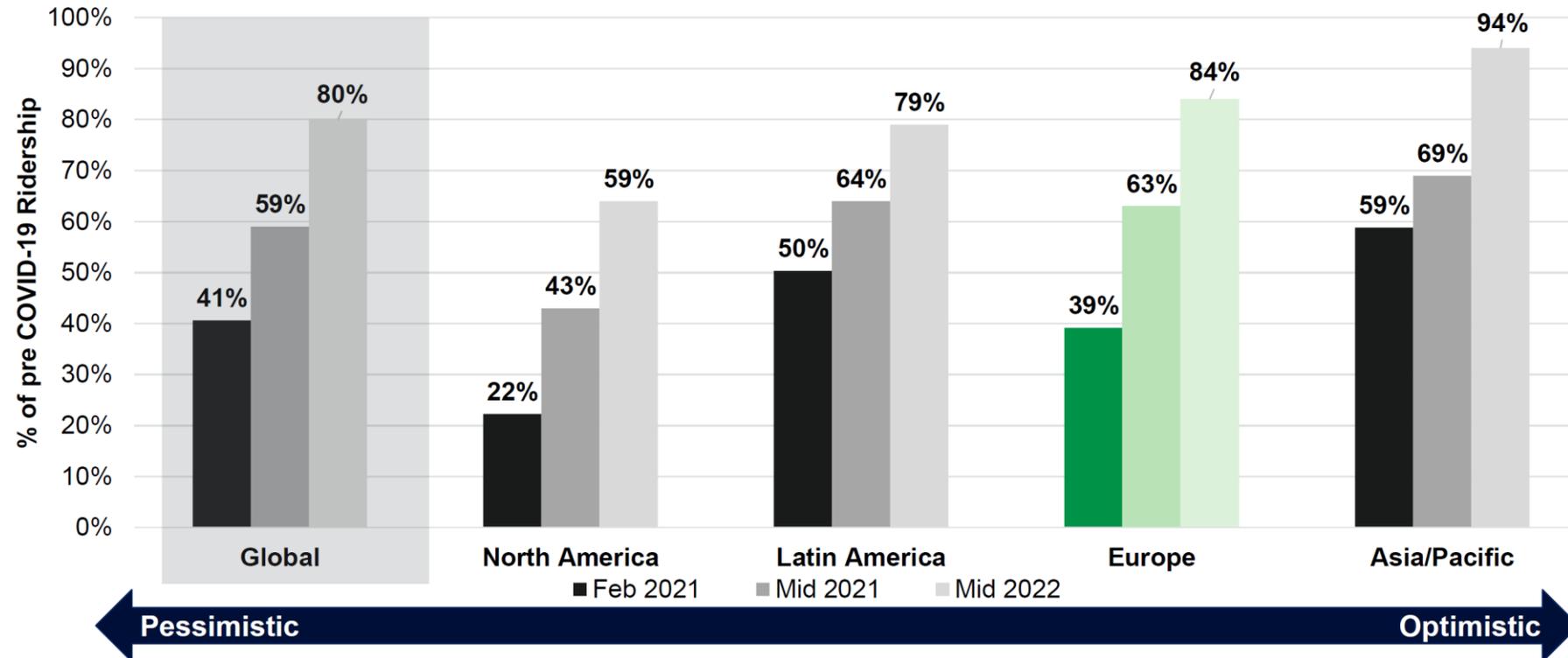
International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Future Ridership

Current and Estimated Future Ridership: Average by Region
% of pre COVID-19 Ridership

Source: Community of Metros / Transport Strategy Centre at Imperial College London



International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Future Ridership

The top 5 key factors to encourage active and inactive customers back onto London Underground (Sep/Oct 2020):

Active Customers	Inactive Customers
<ol style="list-style-type: none">1. Value for money2. Enforced face coverings3. Real-time information about disruptions4. Train frequency5. Enforced social distancing at stations	<ol style="list-style-type: none">1. Enforced face coverings2. Anti-viral deep cleaning3. Enforced maximum capacity limits4. Enforced social distancing at stations5. Provision of hand gel

The first trip back to the metro is key

Inactive customers feel that the metro is less safe than active customers

But it will take more than COVID-19 related policies to recover and retain demand in long run

Once riding, customers have different priorities

International Benchmarking

International Trends in Metro Systems: Data and Strategic Options - Imperial College

- Conclusions

Metros are still essential

- ▶ No other way to move people in dense urban corridors
- ▶ Transport alternatives (e.g. cars) are not sustainable
- ▶ Even at much reduced demand, metros are still essential

Even at
30%
ridership, the **New
York Subway** is
still carrying
1.8m
trips per day!

Metros are long-term

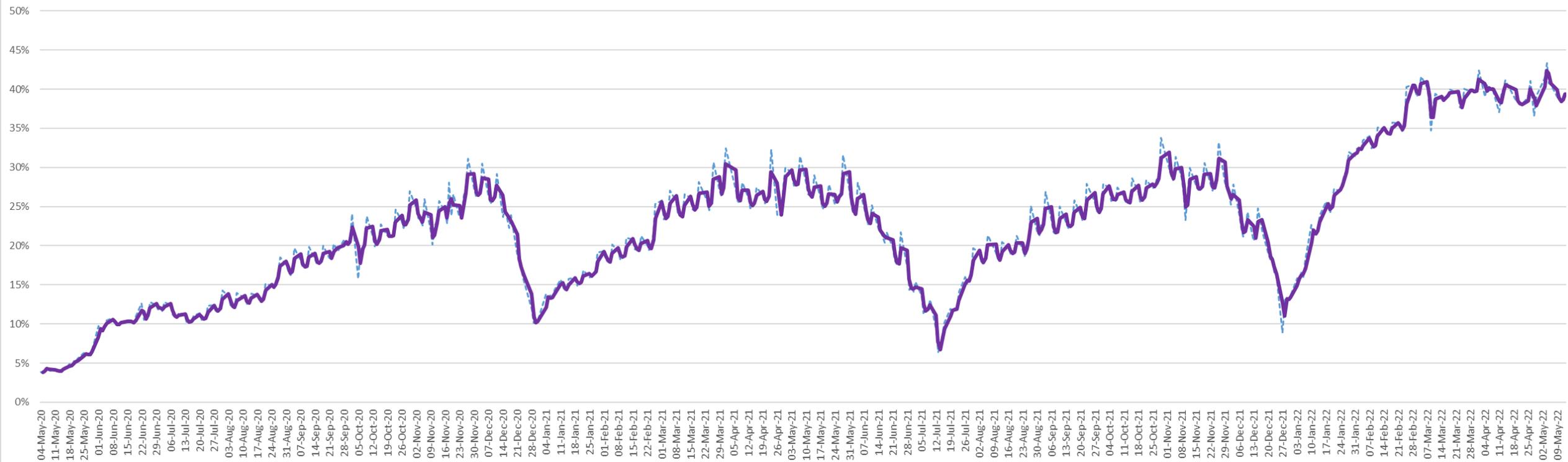
- ▶ Infrastructure lasts a very long time
- ▶ Decisions have a long lifecycle (e.g. trains entering service today will very likely operate for the rest of my life!)
- ▶ Danger of making decisions with long impacts based on short-term conditions – this is a typical problem for metros due to politics, now even more so due to the pandemic
- ▶ It is therefore in everyone's best interest to plan for metros to be successful

Gautrain Ridership

Ridership and Revenue

- As at end April passenger demand was 45% of pre-Covid and Revenue was 52% of pre-Covid

Train Pax as % of Weekday Pre Covid Average



Conclusion

Key Lessons Learned

- Globally rail and bus ridership was severely impacted by Covid 19
- It also changed demand patterns and required an active response by operators
- Gautrain benchmarks well in responses around operations, asset security and passenger safety
- Operationally Gautrain will be able to respond well to future waves of Covid
- However, passenger demand and revenue growth require long term strategies that take advantage of:
 - Changed demographics and location of passengers
 - Increased fuel prices
 - Increased environmental awareness
 - Increased road and traffic congestion

Conclusion

Resilience Through Adaptation

- Understand that Rail services will not return to normal in the immediate future
- Harvest your data to enable prescriptive decision making
- Allow Commuters the ability to decide and develop for post Covid
- Over Crowding Management is a long term endeavour thus it must be undertaken with a strategic management
- During the Pandemic Rail transit organisation can not afford to go-dark
- Social media has become prime and has to be manage adequately
- In station technology should be used to enable customer engagements
- Enhanced cleaning will become a permanent feature of transit
- Transit operator should adapt their operations to integrate these services
- Transit companies have to communicate their enhanced offerings

THANK YOU

