

**How Tools are Converging  
to create Integrated, Equitable,  
On-Demand Mobility Available to All**

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2018 Fare Collection/Revenue Management  
& TransTech Conferences

# We are in a period of change

- ▶ Decrease in bus and rail ridership
- ▶ Increase in on-demand services (including paratransit)
- ▶ Many start-up technology companies
- ▶ Interest from the automotive industry
- ▶ Reduction in federal funds for public transit



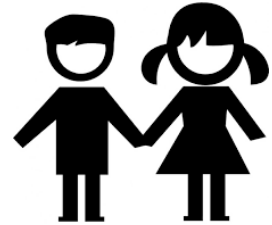
# Many siloed services, many newcomers



A photograph of two hands reaching towards each other in a field of tall grass under a blue sky. The hands are positioned in the center of the frame, with one hand slightly higher than the other. The background is a clear blue sky with some light clouds, and the foreground is filled with tall, golden-brown grass. A green horizontal band is overlaid across the middle of the image, containing the word "Considerations" in white text.

# Considerations

# Understand the demand and supply



Wait- & Travel-time

Capacity

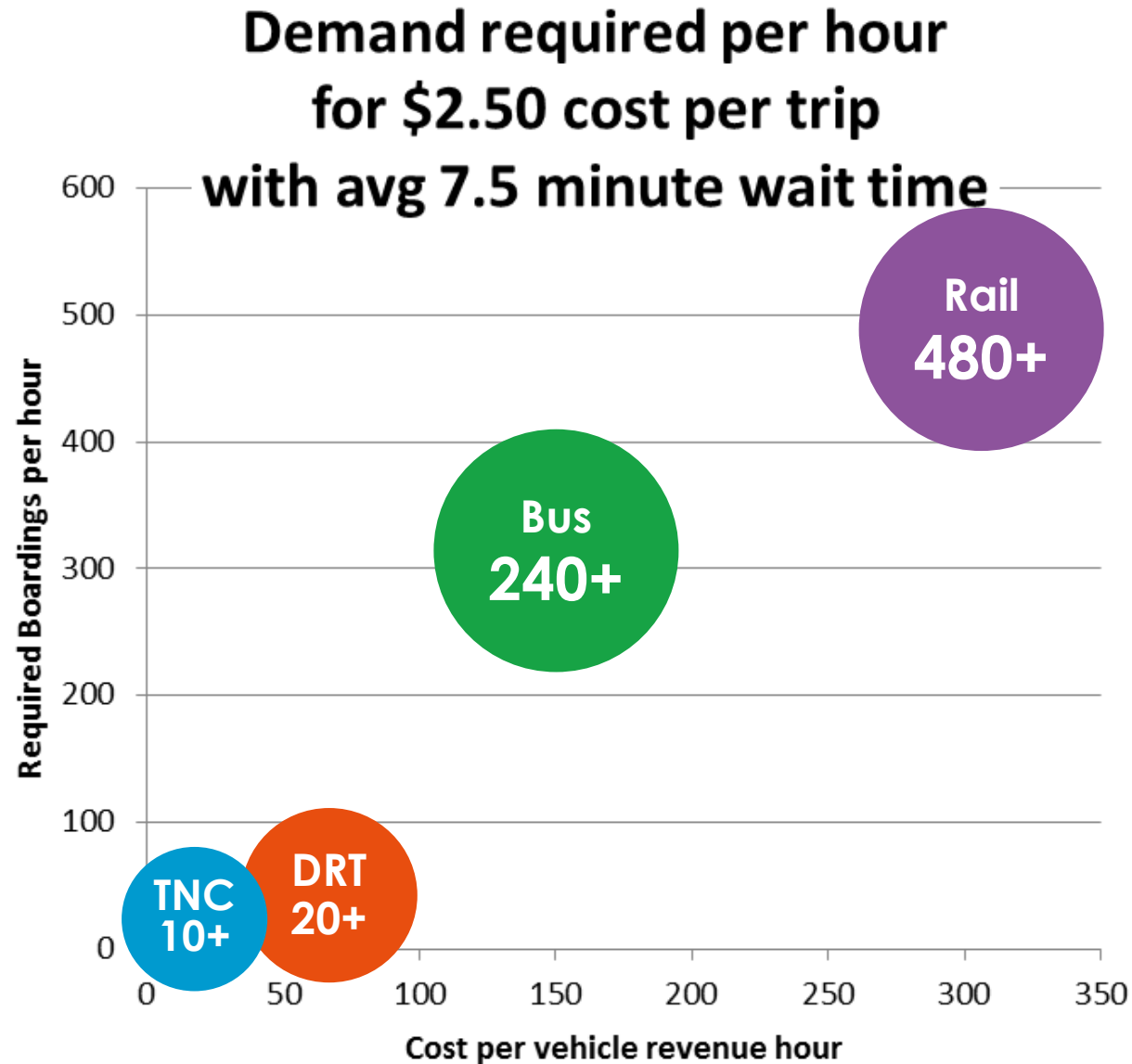
OTP

\$/ HR

\$/ Paxmile



# Cost: Every mode has its sweet-spot



# Capacity: The strength of mass transit



chariot  
mass transit reinvented



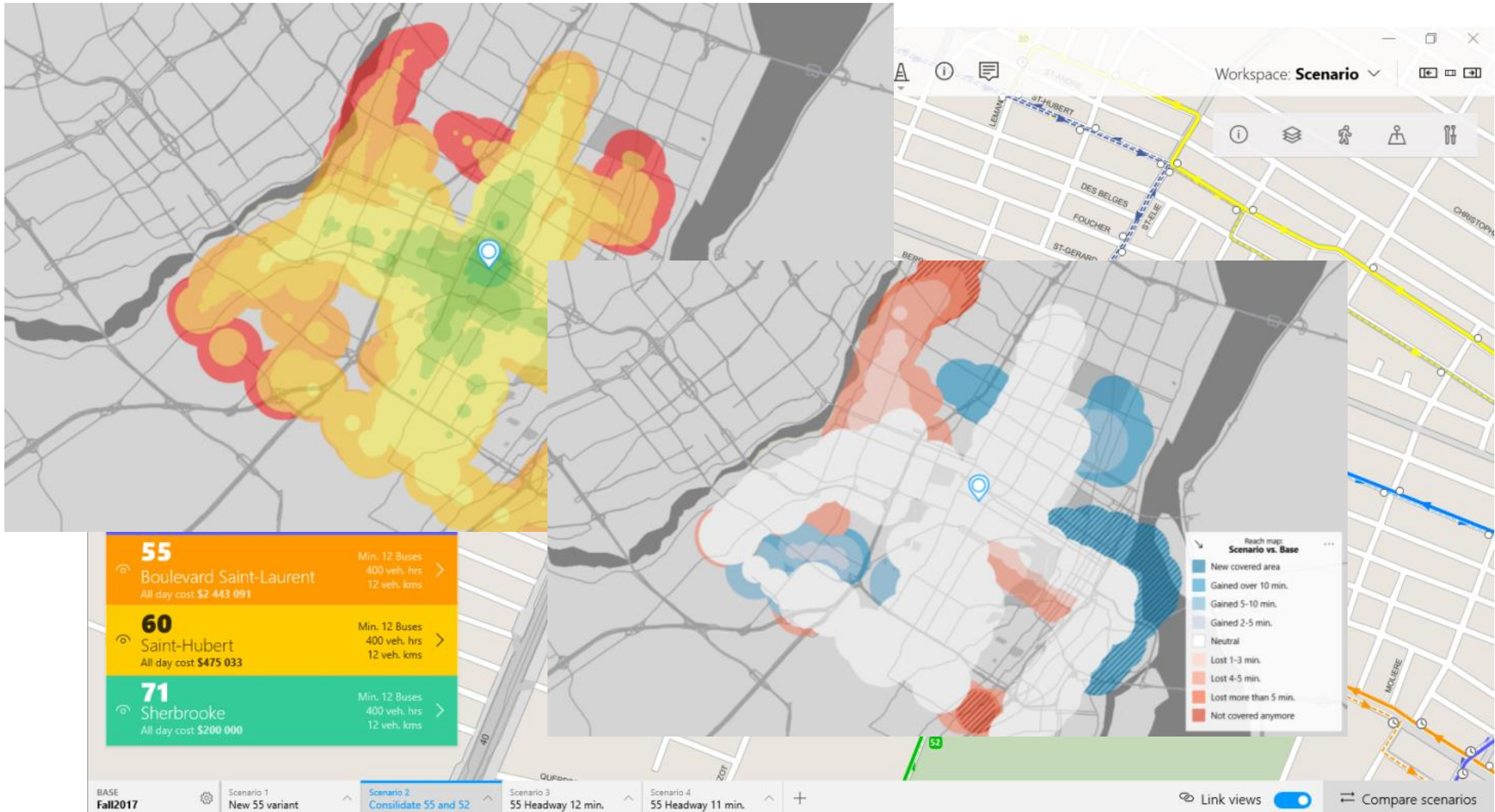


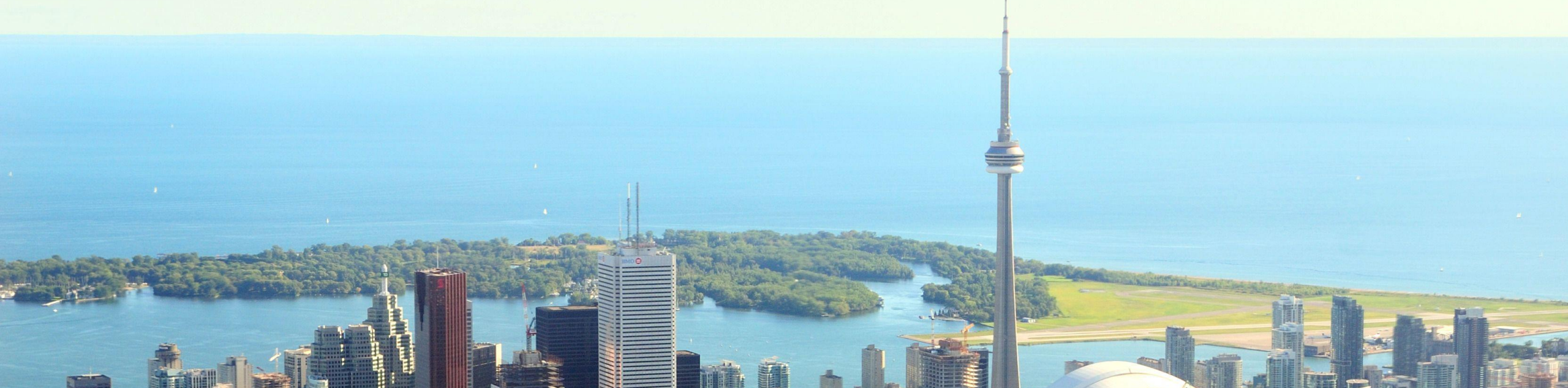
**Starting at  
the conventional service**



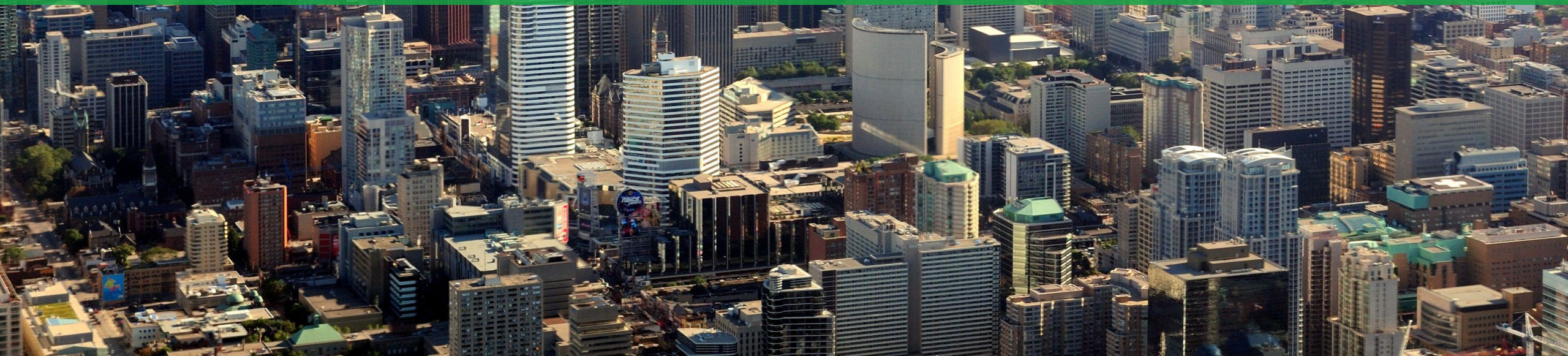


# LA Metro: Microtransit initiative & NextGen

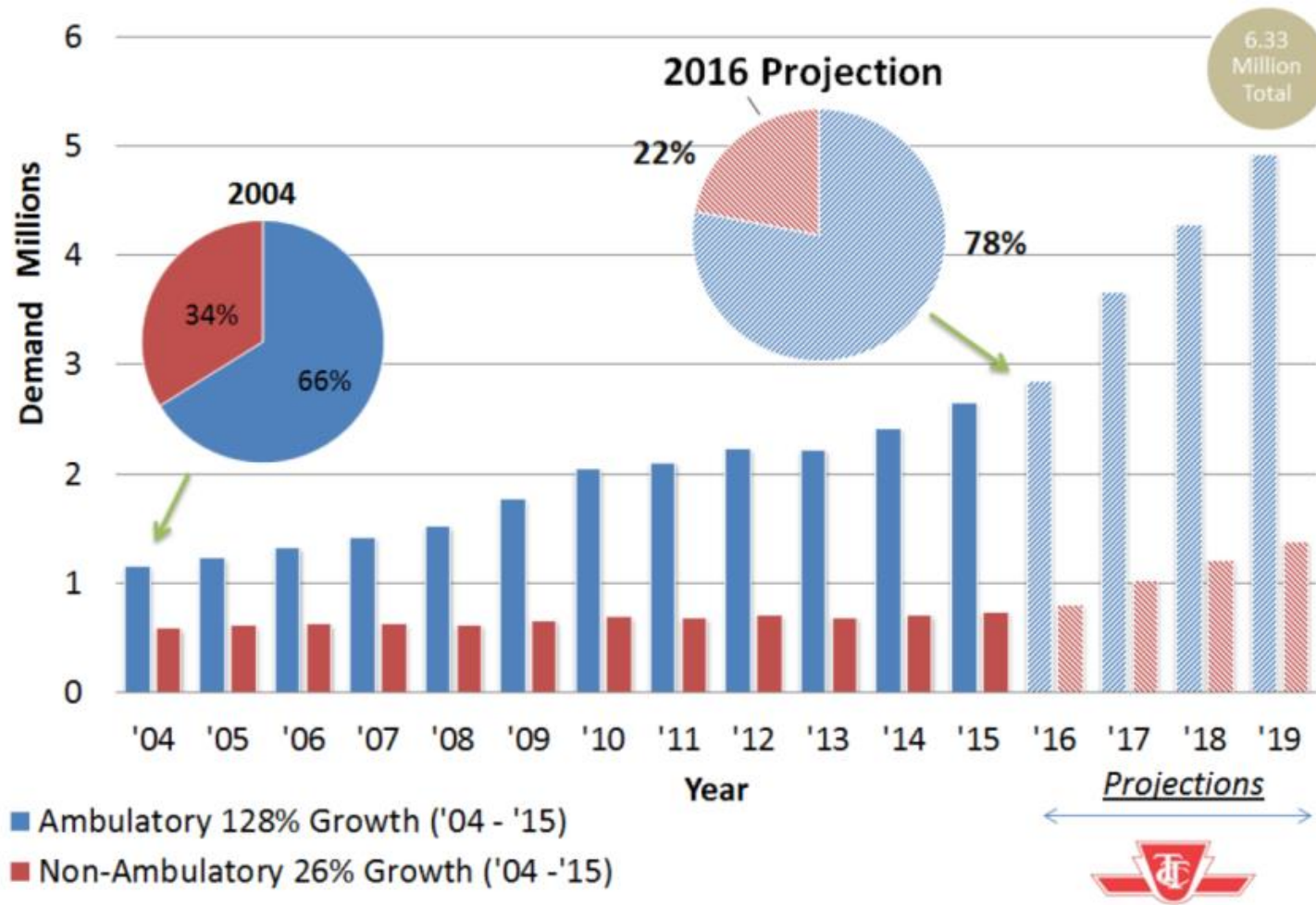
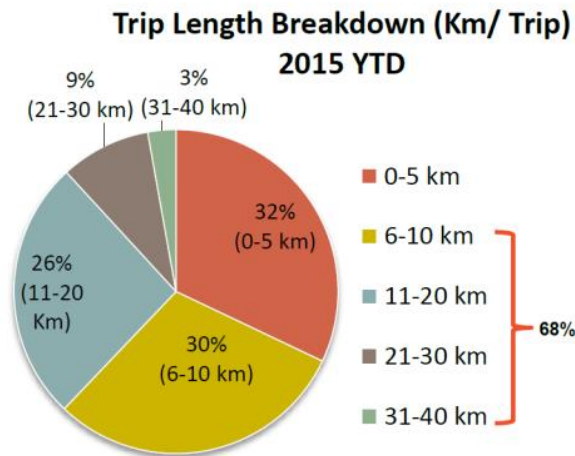
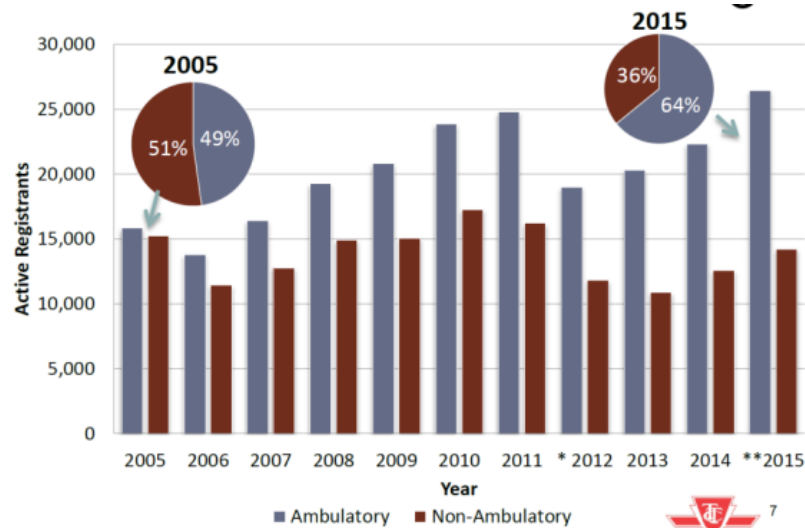




# Starting at paratransit



# Toronto TTC: From Family of Service to Microtransit

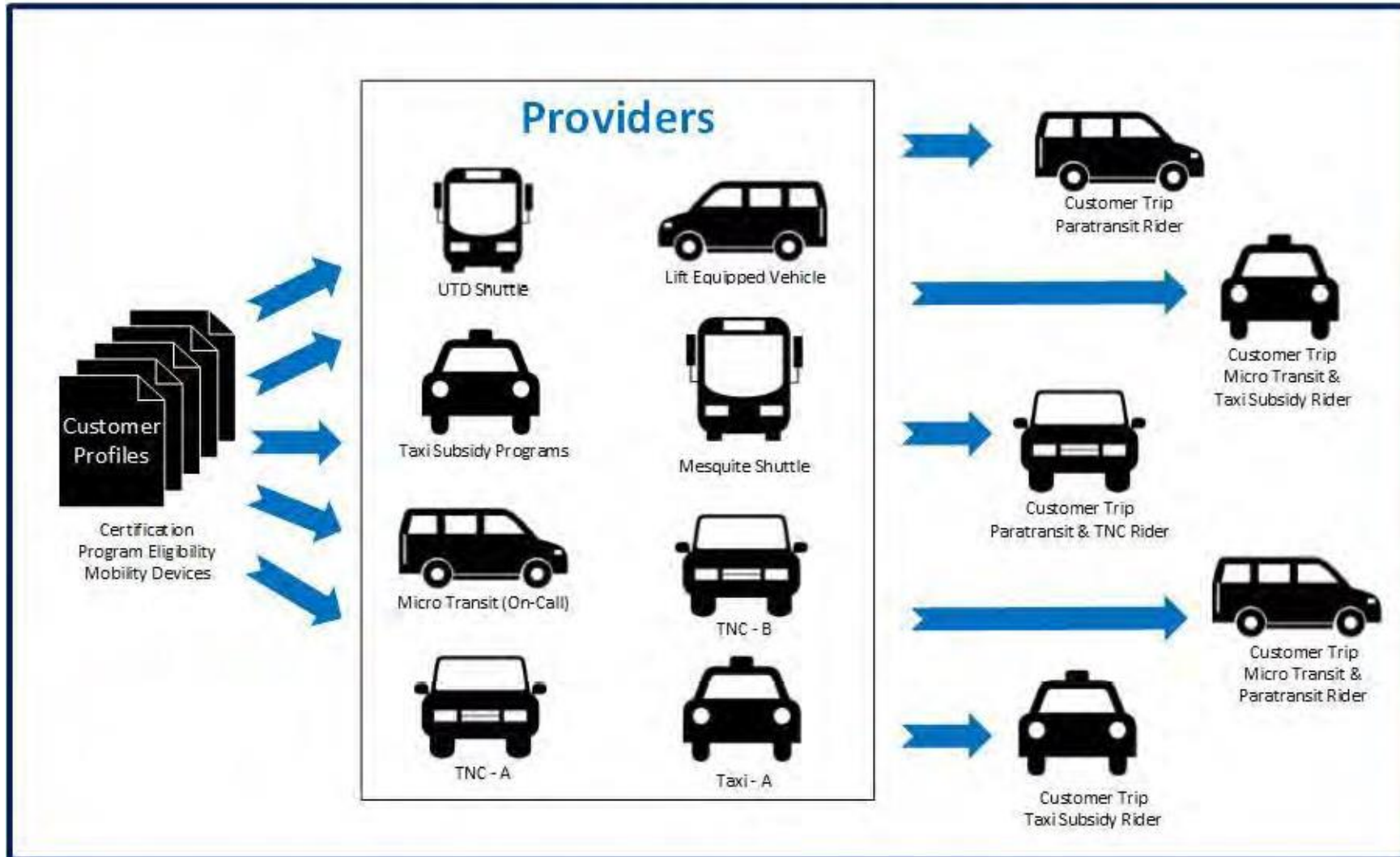


Source: TTC 10-year plan Wheel Trans, 2017 Wheel-Trans Operating Budget



**Starting at customer platform**

# Dallas DART: Multi-operator Booking Platform



Source: Dart Mobility Management Services – Vision 2020 Plus

# The convergence of technologies



# Converging technologies allow breaking the siloes

- ▶ **Bring internal departments together in planning, contracting and customer service**
  - ▶ Bus, Rail, On-demand, Contracted Parties
- ▶ **Use common performance indicators**
  - ▶ Door-to-door travel- & wait-time, convenience, and quality
  - ▶ Cost per passenger mile
  - ▶ % of population within x time of their job
  - ▶ Number of people with access to job within x minutes.
  - ▶ % of network delayed by traffic congestion
- ▶ **Use the converging tools throughout the departments**
  - ▶ Client management
  - ▶ Demand management
  - ▶ Resource management
- ▶ **Work with MPOs and the city and build your business case**
  - ▶ Define common success factors for public transit

# Beware of the fox guarding the henhouse!



Split the booking process and scheduling decisions from (3<sup>rd</sup> party) operations



# Questions to ask yourself

- ▶ Is the service equitable?
- ▶ Do we determine which resources will be allocated?
- ▶ Do we have full access to the data generated?
- ▶ Do we have full control over the quality of service?
- ▶ Do we have full control over the cost of service?
- ▶ Do we address pollution and public health sufficiently?



A photograph of a long, straight asphalt road with double yellow lines receding into a dense forest. The road is flanked by tall, thin trees on the left and a steep, mossy embankment on the right. The scene is captured from a low angle, looking down the road towards the horizon.

# Conclusion

# Converging technologies lead to better & more equitable services

- ▶ **Higher-quality service and greater efficiency through converging tools**
  - ▶ Client management
  - ▶ Demand analysis
  - ▶ Trip booking and payment
  - ▶ Operations and personnel management
  - ▶ Performance analysis
- ▶ **You can start from various modes**
  - ▶ Bus, Paratransit, Customer Booking and Payment
- ▶ **But start with “the end in sight”**
  - ▶ Scale up gradually
  - ▶ Multiple decision points
- ▶ **Evaluate and simulate before you operate...**



**Thank you!**

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Improving efficiency at every turn

