Planejamento, dimensionamento, programação, análise e avaliação de sistemas de transporte de passageiros

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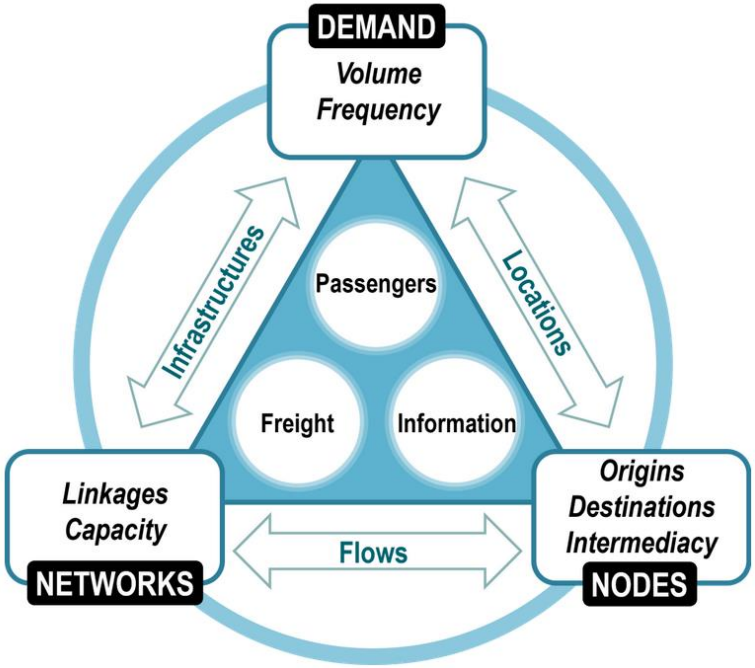
Função do Transporte

- **Movimentação geográfica de pessoas e de cargas/ mercadorias produzidas em uma economia entre um ponto de origem e um de destino**

- **Relevância econômica**
  - Maior empregador na India
  - 13% do GDP dos EUA

    Fonte: Sussman, Joseph (2000) Introduction to Transportation Systems. Artech House
  - No caso de carga, pode representar de 30 até 70% do custo logístico total

O que abrange / compreende um sistema de transporte?



Fonte: https://transportgeography.org/contents/chapter1/what-is-transport-geography/transport-system-overview/

"... *são as* **instalações fixas**, *as* **entidades de fluxo** *e os* **sistemas de controle** *que permitem que pessoas e produtos superem eficientemente barreiras espaciais geográficas para que elas possam, em tempo hábil, participar de alguma atividade de interesse.*"

Papacostas, C.S. (1987). Fundamentals os Transport Engineering. Prentice Hall.

Motivação do curso

- O domínio dos conceitos básicos de
  - Oferta,
  - Demanda
  - Avaliação Sócio-Econômica

- de Sistemas de Transportes de Passageiros e Cargas
  é de fundamental importância para quem vai atuar nas áreas de mobilidade, transporte de passageiros e cargas

- Tanto para o setor público quanto para o setor privado
  - Operadores
  - Embarcadores
  - Gestores/dirigentes
  - Consultores

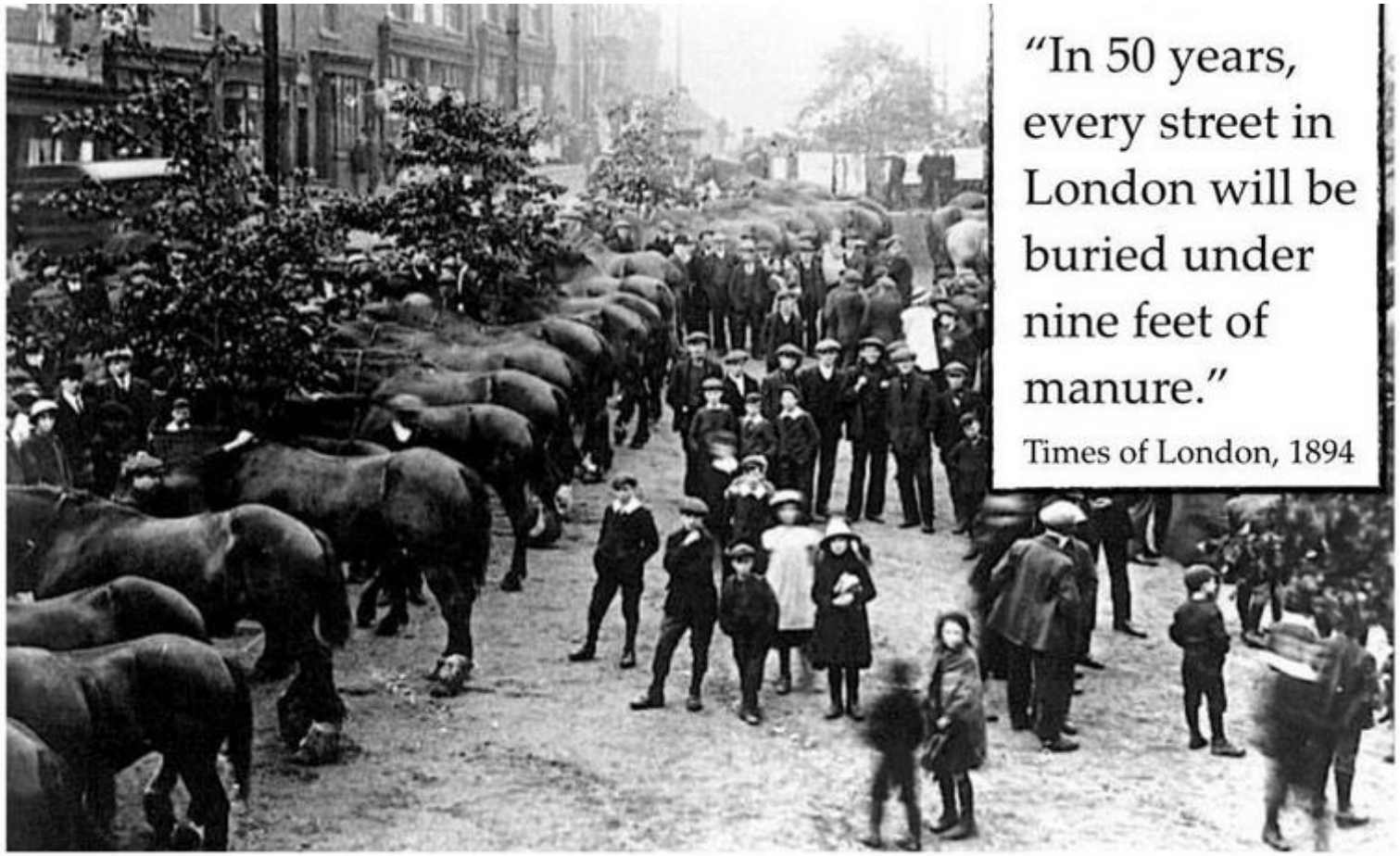
Importância do Planejamento de Transportes

- **Investimentos elevados**
  - Podem ser superiores a R$ 100 milhões por km!!!
- **Amplo espectro de impactos, inclusive ambientais**
- **Impactam desenvolvimento econômico e qualidade de vida!**

A área de transportes sofreu grandes mudanças...

- Há pouco mais de 120 anos atrás uma das grandes preocupações em transporte era com....

resíduos!!



A tecnologia vem transformando o setor de transportes (e logística)

Investimentos

UM GIGANTE DE 100 BILHÕES DE DÓLARES

O Vision Fund já fez aportes em 65 startups de setores como comércio, fintechs, indústrias do futuro e logística e transporte

(número de startups investidas)

20

LOGÍSTICA E TRANSPORTE

A tese: o negócio está deixando de ser a propriedade dos ativos e virando um serviço sob demanda via tecnologia

O tamanho do mercado: **5,1 trilhões de dólares**(1)

Empresas investidas: Alibaba Local Services, Didi, Loggi, Uber, Rappi

10

COMÉRCIO E PUBLICIDADE

A tese: os anúncios e o varejo online serão 100% personalizados e preditivos num mundo movido por IA

O tamanho do mercado: **2,8 trilhões de dólares**(1)

Empresas investidas: Coupang, Fanatics, GetYourGuide, OYO, Tokopedia

9

SERVIÇOS DE SAÚDE

A tese: cuidados médicos e de bem-estar vão avançar com o uso da inteligência artificial e as soluções genéticas

O tamanho do mercado: **7,7 trilhões de dólares**(2)

Empresas investidas: Guardant Health, Ping An Good Doctor, Relay Therapeutics, Roivant, Gympass

Urbanização é inevitável

THE WORLD'S NEW MEGACITIES

Developing countries will dominate megacity growth over the next two decades

Aglomerados urbanos com mais de 10 milhões de habitantes

Fonte: https://www.visualcapitalist.com/mapping-the-worlds-new-megacities-in-2030/

O que é Mobilidade?

Mobilidade

- **“Habilidade de se mover ou ser movido livremente e facilmente”**
- **Usualmente associado a transporte/deslocamento de pessoas ou**
- **Acessibilidade**
- **Por que as pessoas precisam se deslocar?**
  - Para realizar as suas atividades diárias (regulares ou não)
  - Exemplos: para estudar, trabalhar, fazer compras, lazer, médico
  - Pode levar a diferentes níveis de exclusão social (impossibilidade de acesso)
- **Como se mede?**
  - Usualmente número médio de deslocamentos que uma pessoa realiza por dia
  - No Brasil são, em média, 2 deslocamentos por pessoa por dia (ida e volta)
  - contra 4 deslocamentos por pessoa-dia em países mais desenvolvidos

Congestionamentos afetam a mobilidade nos centros urbanos

EL PAÍS ATUALIDADE

São Paulo, onde a vida é o que acontece dentro de um carro

em 2012

A cidade é a quarta do mundo com mais congestionamentos. Cada paulistano perde três dias e meio por ano parado no trânsito

Trânsito pesado no tunel sob o túnel Anhangabaú, em 2012. ZÉ CARLOS BARRETTA (WIKIMEDIA COMMONS)

Magazine

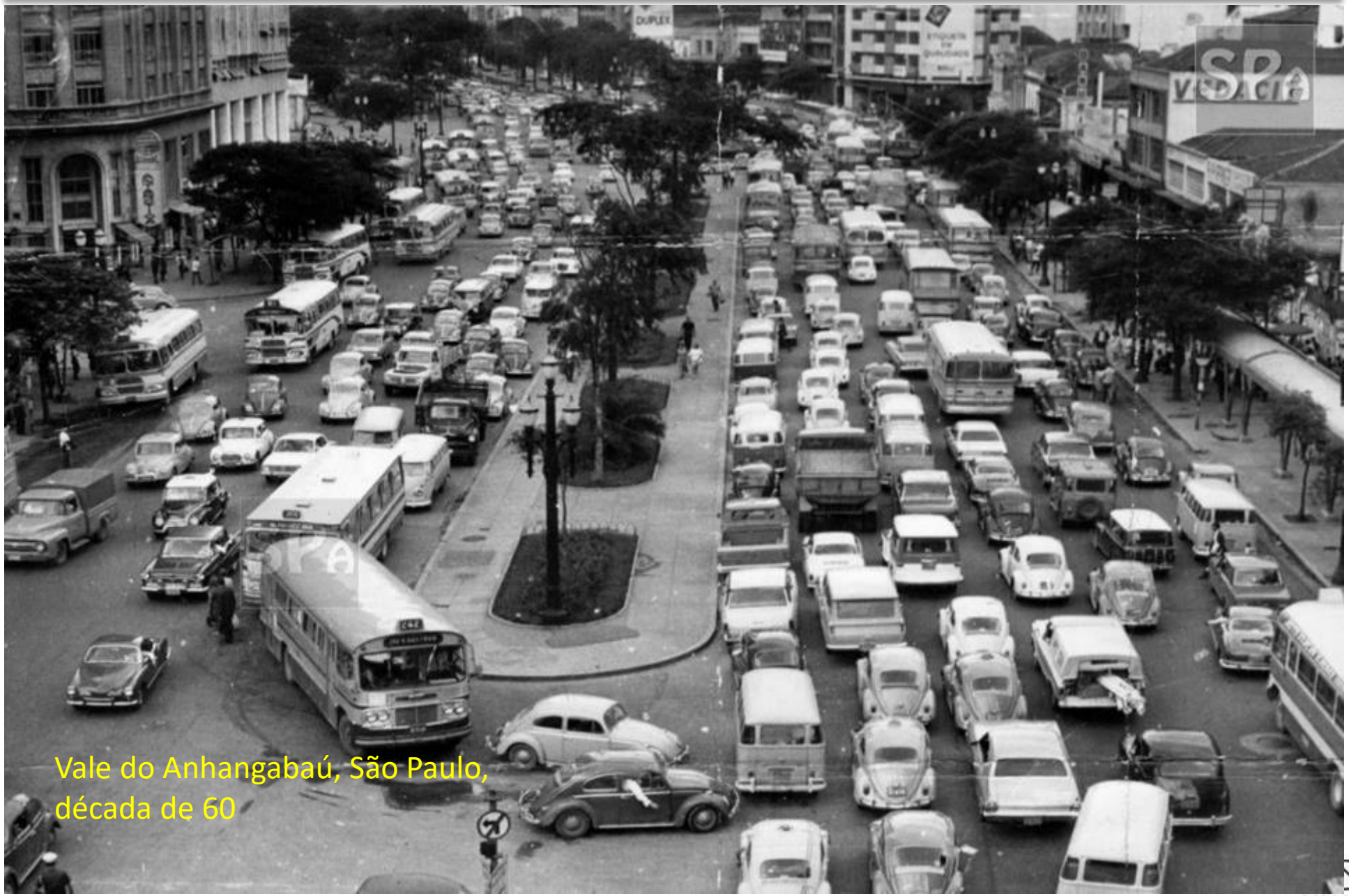
https://www.bbc.com/news/magazine-19660765
https://www.youtube.com/watch?v=iSsDPVRAzjg
https://www.youtube.com/watch?v=7A-9g765AIE

Sao Paulo: A city with 180km traffic jams

By Paulo Cabral
BBC News, Sao Paulo

25 September 2012

Não é um problema novo....



Vale do Anhangabaú, São Paulo, década de 60

Working Paper | 356 | Abril de 2014

SAO PAULO SCHOOL OF ECONOMICS
FGV

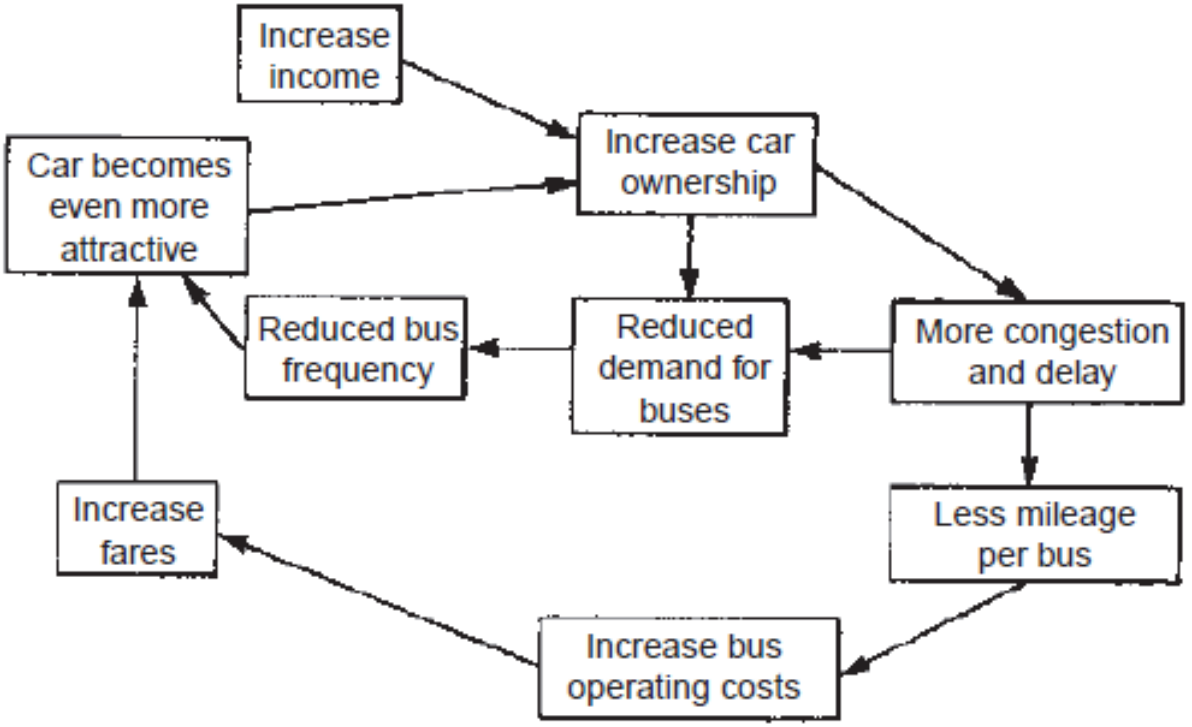
Os custos dos congestionamentos na cidade de São Paulo

Marcos Cintra

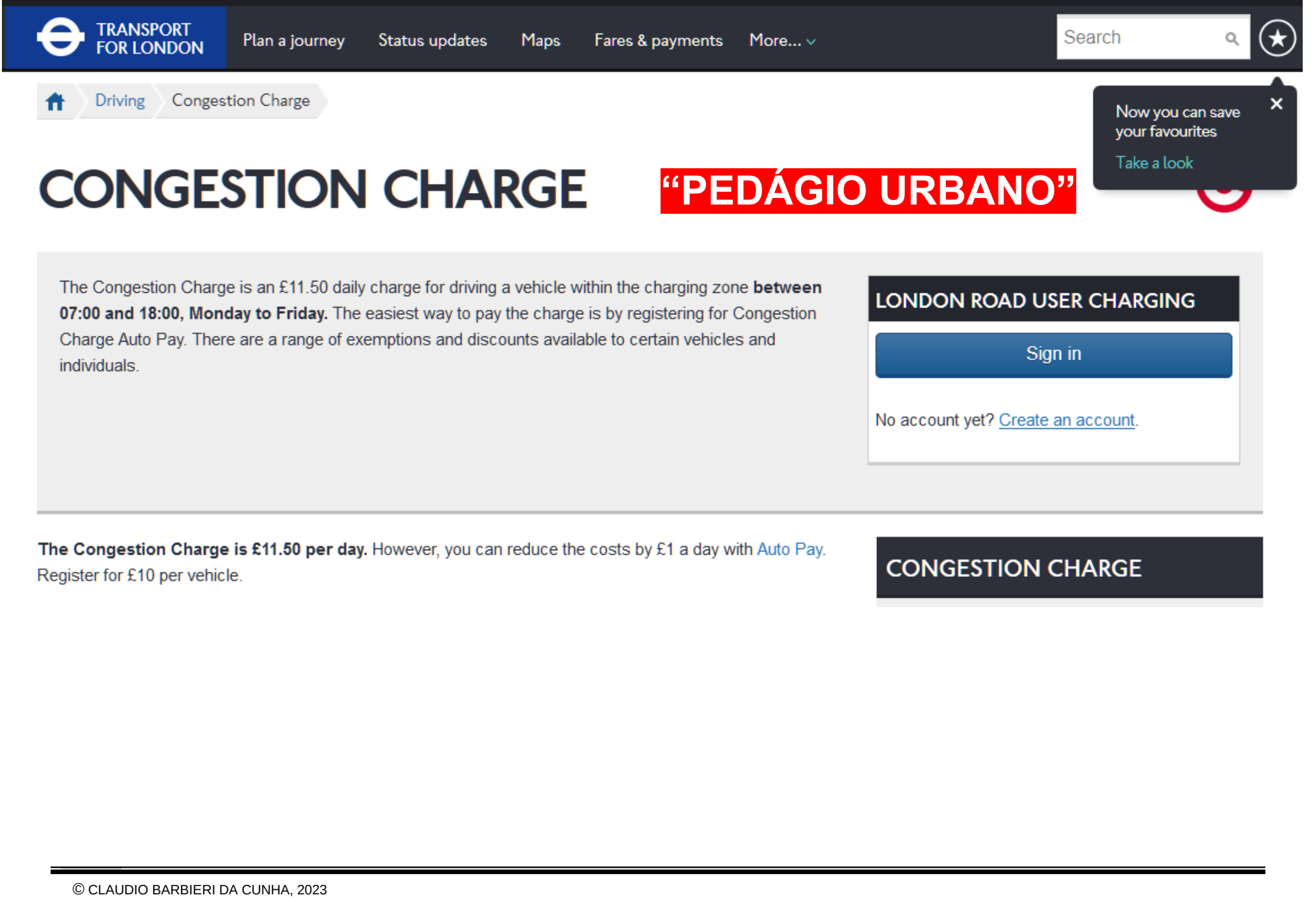
TABELA 16
Resumo das perdas totais

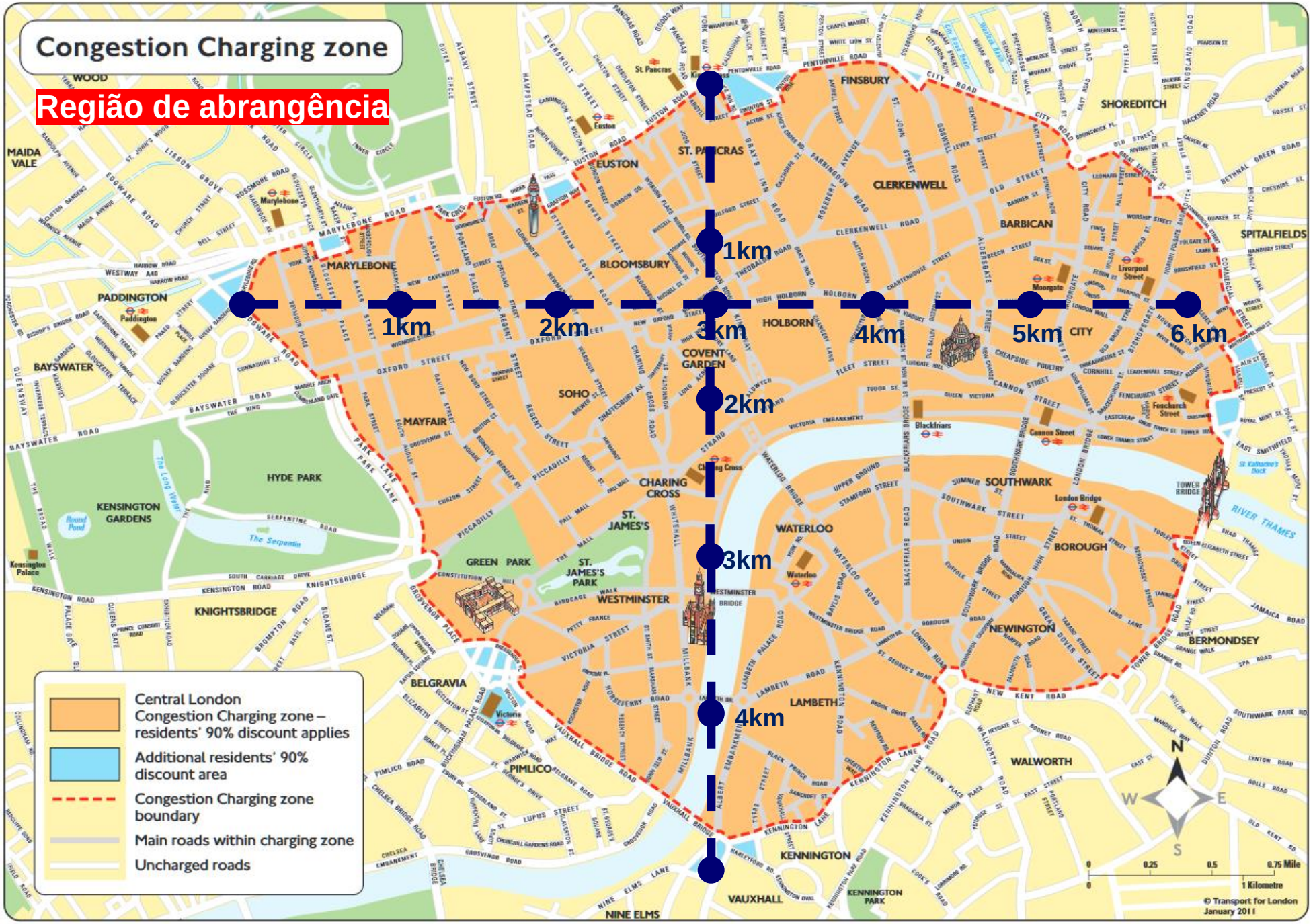
Ítens	2002	2004	2006
Custo de oportunidade (R$) (1)	*10.342.299.788,00*	*13.128.172.049,00*	*17.193.443.050,00*
Gasto adicional gasolina por carro	3.434.793.448,83	3.769.058.411,99	3.793.857.549,91
Poluição por carros	479.301.429,99	525.324.375,00	528.833.709,30
Gasto adicional diesel por ônibus	184.765.040,39	242.792.379,14	288.304.008,32
Poluição por ônibus	17.199.499,37	23.008.892,89	28.394.049,52
Transporte de carga	2.866.819.720,50	2.740.466.788,86	3.698.033.285,09
Total custo pecuniário (R$) (2)	*6.985.879.139,07*	*7.300.650.847,88*	*8.377.422.602,14*
Total (1+2)	**17.328.178.926,74**	**20.428.822.896,69**	**25.530.862.651,66**
Ítens	**2008**	**2010**	**2012**
Custo de oportunidade (R$) (1)	*24.282.318.282*	*27.112.094.149*	*30.175.803.397*
Gasto adicional gasolina por carro	4.723.027.663,01	4.277.341.560,80	4.858.837.958,57
Poluição por carros	659.777.598,31	596.107.037,05	677.280.068,50
Gasto adicional diesel por ônibus	268.681.144,56	256.918.905,10	318.515.033,98
Poluição por ônibus	25.060.148,87	24.174.117,28	29.130.882,29
Transporte de carga	4.431.435.428,68	3.648.706.957,96	4.099.940.520,39
Total custo pecuniário (R$) (2)	*10.107.981.983,43*	*8.803.248.575,19*	*9.983.704.463,74*
Total (1+2)	**34.490.300.265,60**	**35.915.342.724,13**	**40.159.507.860,97**

Car and public-transport vicious circle



Fonte: Ortúzar e Willumsen (2011) Modelling Transport.





Moradia se aproxima do transporte em SP e arranha-céus surgem em áreas de casas na periferia

Após Plano Diretor, 33% dos lançamentos residenciais são nos eixos de transporte; apartamentos encolhem

33% dos lançamentos residenciais são nos eixos de transporte

Fonte: https://www1.folha.uol.com.br/cotidiano/2021/04/moradia-se-aproxima-do-transporte-em-sp-e-arranha-ceus-surgem-em-areas-de-casas-na-periferia.shtml

DESAFIOS

DESLOCAMENTO COLETIVO / NOTÍCIA

Por que o Brasil vive uma crise no transporte público?

Aumento sucessivo dos preços e baixo número de usuário faz com que cidades brasileiras, como Caxias do Sul, busquem alternativas para manter serviço essencial

ARTIGO

Dois anos de pandemia e crise no transporte coletivo

Déficit financeiro do setor passa de R$ 9 bilhões

Por ROBERTA MARCHESI | DIRETORA EXECUTIVA DA ASSOCIAÇÃO NACIONAL DOS TRANSPORTADORES DE PASSAGEIROS SOBRE TRILHOS

15/03/22 - 03h00

Google News

Referências:https://gauchazh.clicrbs.com.br/pioneiro/geral/noticia/2022/03/por-que-o-brasil-vive-uma-crise-no-transporte-publico-cl0iizgju007m0165qg653xdf.html
https://www.otempo.com.br/opiniao/artigos/dois-anos-de-pandemia-e-crise-no-transporte-coletivo-1.2632814

Helsinki public transport use nearing pre-Covid levels, but fuel prices will raise ticket prices

Rising fuel prices will prompt ticket price hikes, according to the head of the Helsinki Regional Transport Authority, Mari Flink.

According to an HSL strategy report published in December, passenger numbers are expected to rise above pre-Covid levels in coming years, with a new record expected to be broken by the end of 2025.
Image: Esko Jämsä / AOP

Referências: https://yle.fi/news/3-12360955

BusinessWorld

ECONOMY EDITORS' PICKS

Public transport system on brink of 'collapse' due to high fuel prices

June 14, 2022 | 8:10 pm

- THE SUPPLY of public transport is deteriorating as operators see their margins eroded by high fuel prices making it a matter of urgency for the government to prepare measures that will encourage "active transport," including the construction of bicycle lanes and walking corridors.
- "The transport sector is in a deadly spiral: Oil prices are skyrocketing. Drivers are losing their jobs as they cannot afford to ply their routes "Public transport supply is collapsing. More commuters are experiencing long lines, waiting times, and crowded commutes in enclosed spaces, and are at-risk for COVID-19."
- Transport was the second biggest driver of overall inflation in May, according to the Philippine Statistics Authority (PSA). The 14.6% inflation in transport costs recorded in May outstripped the overall inflation rate of 5.4%.
- "Economic managers should prioritize walking, cycling, and road-based public transport," the group said. "This is the most important policy shift economic managers should take. It is the founding principle of the fight against transport inflation and the fastest, most effective, and the only sustainable way to do so."

Fonte: https://www.bworldonline.com/economy/2022/06/14/455032/public-transport-system-on-brink-of-collapse-due-to-high-fuel-prices/

ACIDENTES DE TRÂNSITO

Motociclistas foram seis em cada 10 acidentados no trânsito de São Paulo em 2021, mostra levantamento

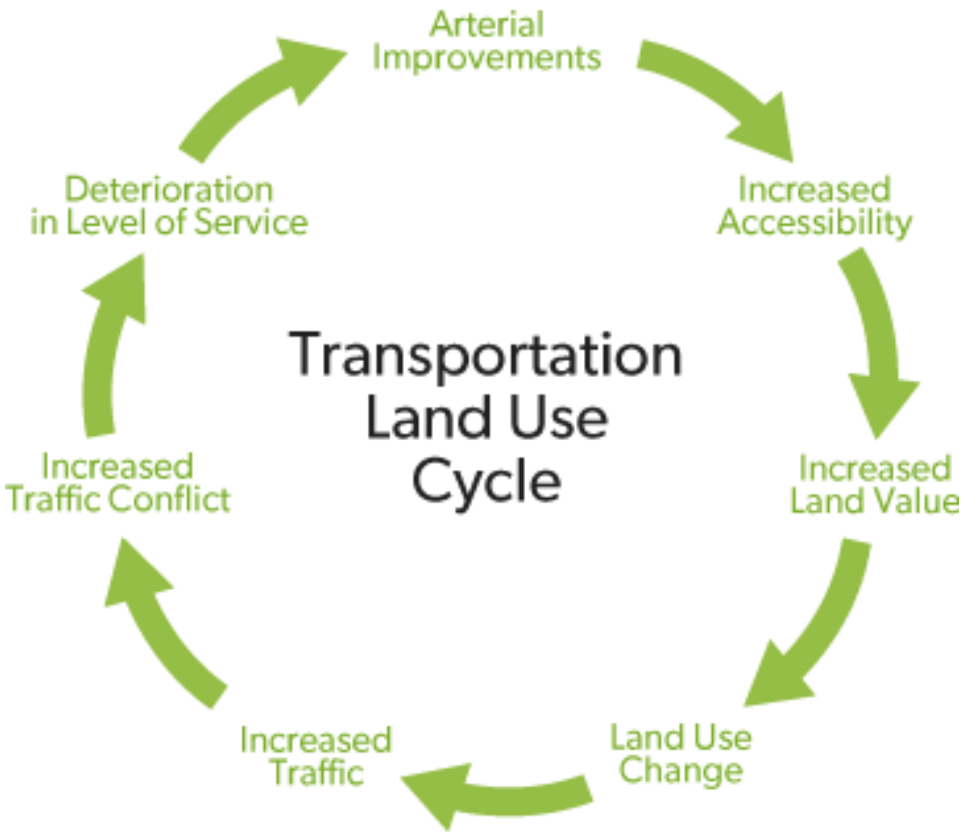
Número é bem maior do que o de 2019, antes da pandemia. Enquanto a venda de carros caiu 22% este ano, a de motos subiu quase 30%.

Por Jornal Nacional

10/05/2022 23h15 · Atualizado há 3 meses

Fonte: https://g1.globo.com/jornal-nacional/noticia/2022/05/10/motociclistas-foram-seis-em-cada-10-acidentados-no-transito-de-sp-em-2021.ghtml

Transporte e uso do solo



DESAFIOS

Germany's 9€ ticket: A potential solution for urban-mobility issues

July 27, 2022 | Article

In response to rising fuel prices, Germany's government recently offered a discounted nationwide travel pass for use on public transportation—the so-called 9€ ticket.

After paying a monthly flat-rate fee of just €9, consumers can travel on all regional and local transportation networks, including inner-city public transport, during the months of June, July, and August.

Fonte: https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/germanys-9-euro-ticket-a-potential-solution-for-urban-mobility-issues

The Financial Express

Monday, 15 August 2022 | Today's FE | e-Paper | Beta Website

HOME ECONOMY STOCK TRADE NATIONAL WORLD EDITORIAL VIEWS MORE INTO 29TH YE

/ Views

Inefficient public transport piles up miseries

Tanim Asjad | Published: August 12, 2022 22:22:34 | Updated: August 13, 2022 21:32:54

Bangladesh

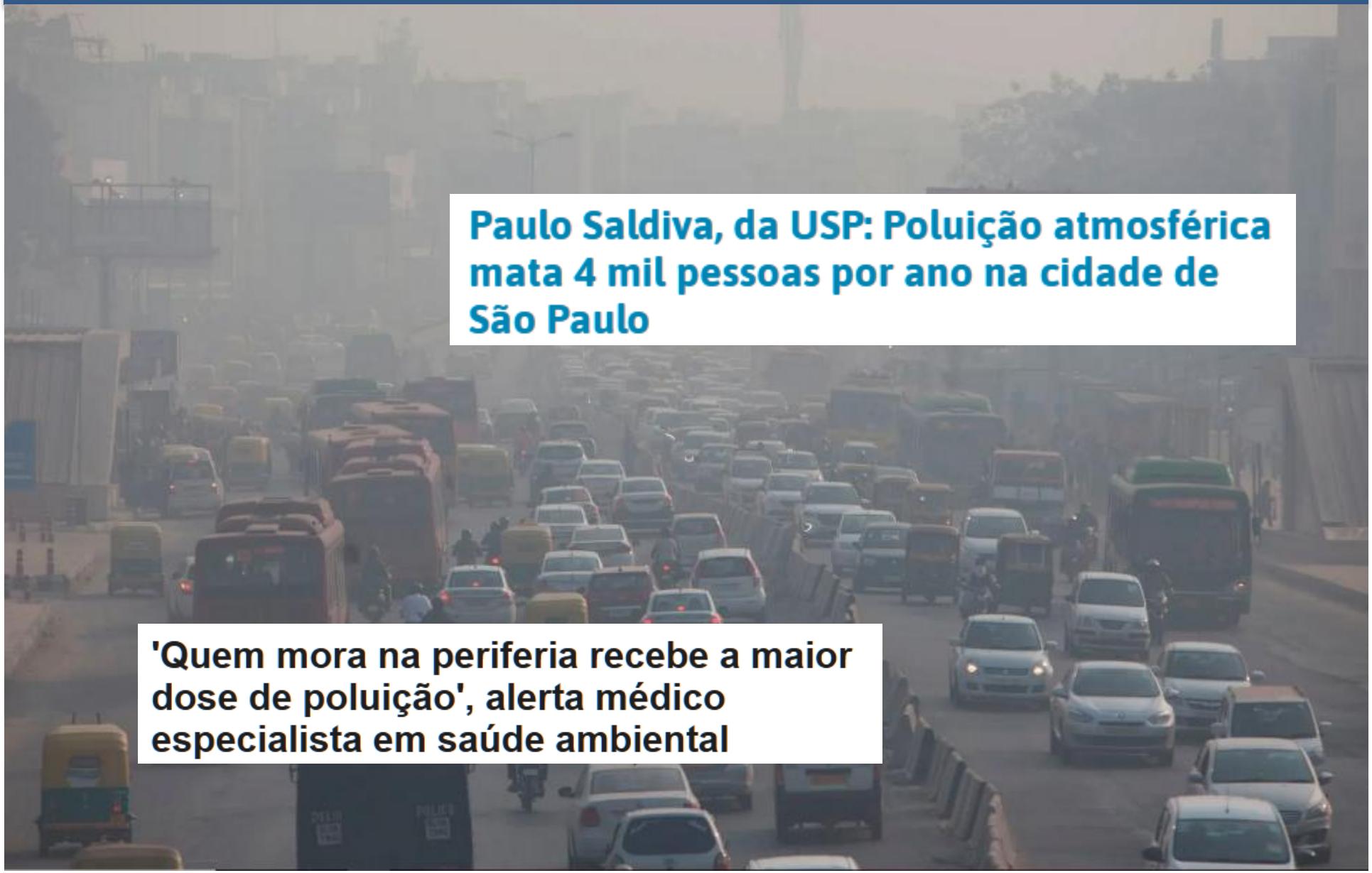
Fonte: https://thefinancialexpress.com.bd/views/inefficient-public-transport-piles-up-miseries-1660321354

- The outrageous increase in the fuel oil prices, announced last Friday mid-night, came literally as a mortal blow to millions of people.
- The consequences of the oil price hike, among other, are a sharp rise in the fares of public buses.
- However, bus operators cannot be blamed much as they have no way to cope with more than a 50 per cent hike in oil price.
- Thus, the regular commuters in Dhaka and other parts of the country have already started paying additional bus fares.
- Yes, many people want to walk. There is, however, no way to walk unhindered in Dhaka. Footpaths are mostly occupied by street vendors, tea stalls and hawkers.
- Motorcycles and cars are also parked there and some footpaths are broken and unusable.
- Paths not occupied by vendors are frequently infringed by motorcycles, making it difficult for pedestrians to walk.

Poluição do ar

- **Causam doenças respiratórias**
- **Veículos circulando na RMSP emitiram em 2010 257 mil toneladas de gases poluentes (90% do total)**
- **Veículos de carga (18% da frota): 24% dessas emissões (60 mil toneladas)**
- **Diesel é o combustível mais poluente**

Transporte x Poluição



Traffic congestion charge would boost air quality in New York City, study finds

Charge of up to $23 a day would reduce number of cars entering Manhattan by 15-20%, assessment says

New York City could introduce a traffic congestion charge of $9 to $23 a day late next year, which would reduce the number of cars entering Manhattan by 15-20%

The city wants to charge a daily variable toll for vehicles entering or remaining within the central business district, defined as between 60th Street in midtown Manhattan and Battery Park on Manhattan's southern tip.

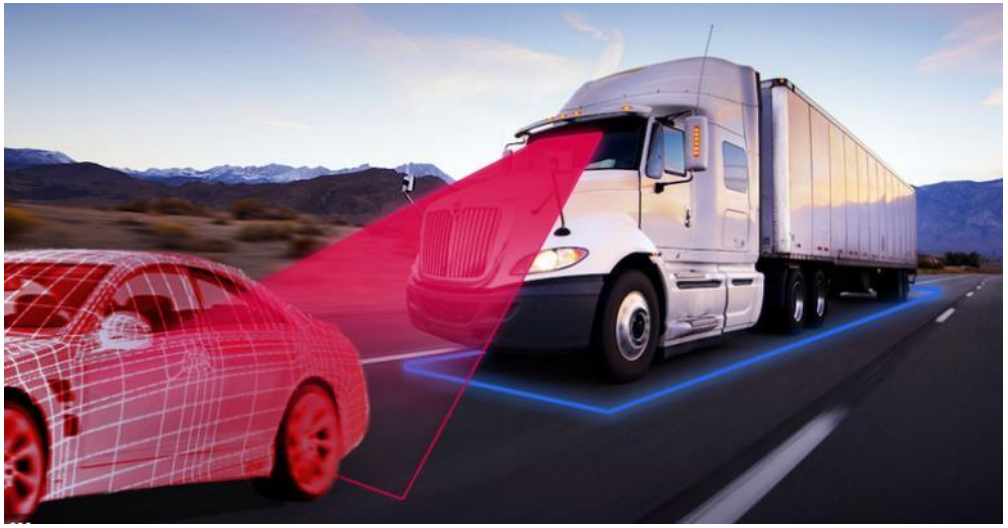
Congestion pricing is good for the environment, good for public transit and good for New York and the region," Metropolitan Transportation Authority (MTA) CEO Janno Lieber said.

The environmental assessment released Wednesday found the charge would cut traffic, improve air quality, make buses more reliable and increase transit use by 1-2%. The toll would generate $1bn to $1.5bn a year and support $15bn in debt financing for mass transit improvement.

Fonte: https://www.theguardian.com/us-news/2022/aug/10/new-york-city-traffic-congestion-charge Ago/2022

Acidentes também são um problema grave...

34 mil vítimas fatais no Brasil em 2017
Principal causa de mortalidade entre jovens no mundo



Desafios do transporte urbano de passageiros segundo o ChatGPT

1. Congestionamento do tráfego: O aumento do número de veículos nas ruas e o congestionamento do tráfego tornam o transporte urbano de passageiros mais lento e menos eficiente.

2. Poluição do ar: A emissão de poluentes pelos veículos de transporte urbano de passageiros contribui para a poluição do ar, que tem impactos negativos na saúde das pessoas e no meio ambiente.

3. Acessibilidade: Muitas pessoas não têm acesso ao transporte público, seja devido à falta de infraestrutura, falta de cobertura ou falta de recursos financeiros para pagar o transporte.

4. Segurança: O transporte urbano de passageiros enfrenta vários desafios relacionados à segurança, incluindo acidentes de trânsito, assaltos e vandalismo.

5. Falta de investimento: A falta de investimento na infraestrutura do transporte urbano de passageiros pode levar a uma queda na qualidade dos serviços prestados e na satisfação do cliente.

Desafios do transporte urbano de passageiros segundo o ChatGPT (2)

6. Custos elevados: O custo de operação do transporte urbano de passageiros é alto, o que pode levar a aumentos de tarifas e redução na qualidade dos serviços prestados.

7. Tecnologia ultrapassada: Muitos sistemas de transporte urbano de passageiros utilizam tecnologias ultrapassadas, o que pode resultar em problemas de confiabilidade, eficiência e segurança.

8. Falta de integração: A falta de integração entre diferentes modos de transporte urbano, como ônibus, trem, metrô e bicicletas, pode dificultar o acesso aos serviços e aumentar o tempo de deslocamento.

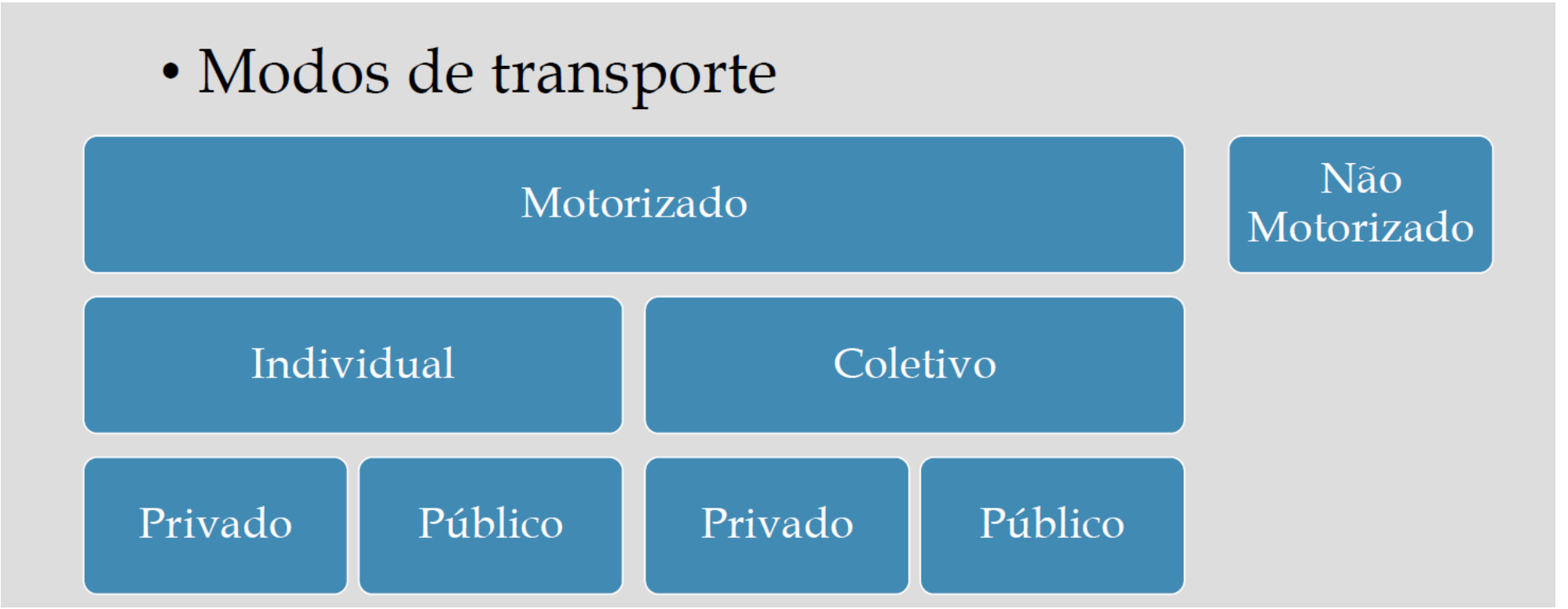
9. Exclusão social: O transporte urbano de passageiros pode excluir grupos sociais vulneráveis, como pessoas com deficiência e idosos, se não houver políticas específicas para atender às suas necessidades.

10. Demanda crescente: O aumento da demanda por transporte urbano de passageiros pode sobrecarregar os sistemas existentes, resultando em serviços superlotados e atrasos frequentes.

Transporte Coletivo Urbano de Passageiros

Algumas medidas para estimular

Outra visão



Faixa exclusiva de ônibus

Faixa exclusiva de ônibus

Fonte: https://nacto.org/publication/urban-street-design-guide/street-design-elements/transit-streets/dedicated-curbside-offset-bus-lanes/

Faixa de ônibus no contrafluxo

Corredor de ônibus

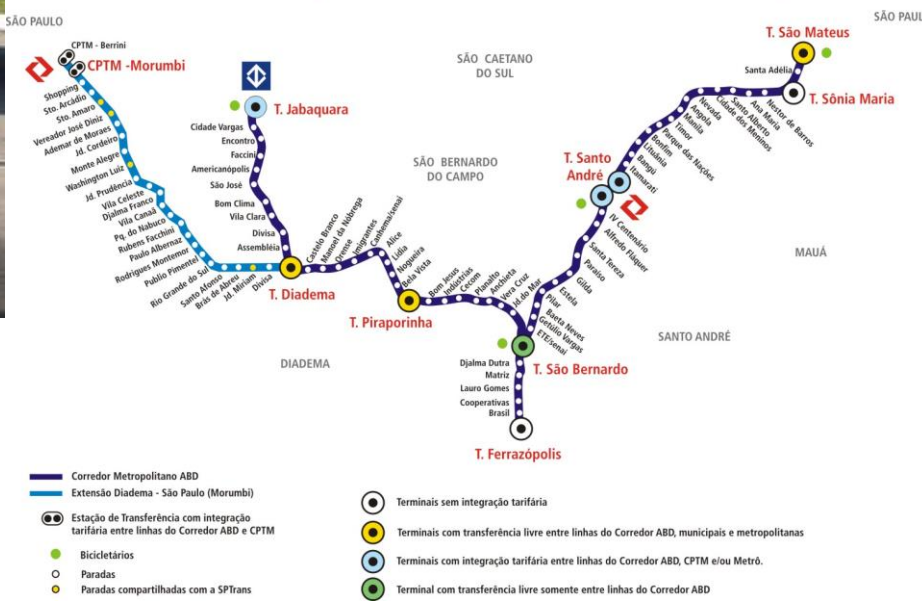
- **Avenida Rebouças**

Dedicated Median Bus Lanes

Fonte: https://nacto.org/publication/urban-street-design-guide/street-design-elements/transit-streets/dedicated-curbside-offset-bus-lanes/

Corredor de ônibus

- **Corredor ABD da EMTU**

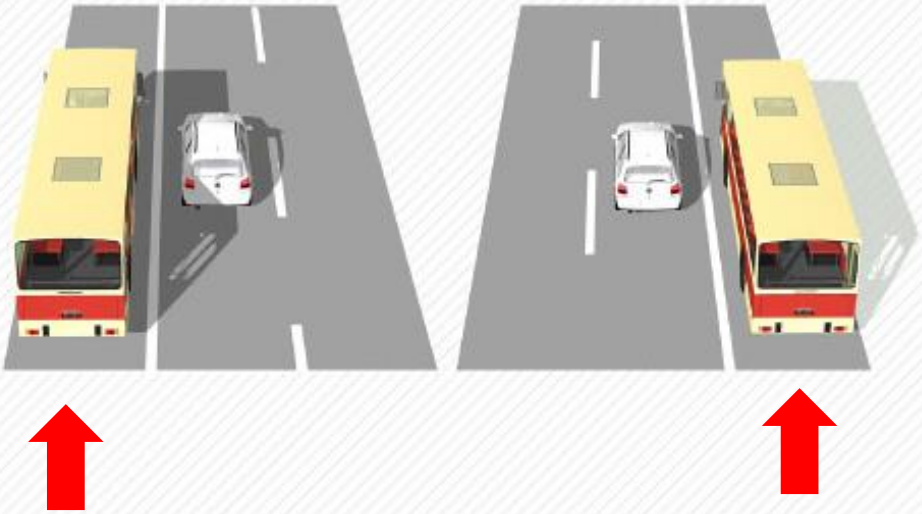


Comparativo

CORREDORES
Ônibus circulam em faixa do lado **esquerdo** da pista

Quando podem utilizar os corredores
Veículos de passeio
Nos dias úteis, das 23h às 4h e nos fins de semana, das 15h do sábado às 4h da segunda
Táxis
Em qualquer dia e horário, desde que não tenham película escura nos vidros e estejam transportando passageiros

Multa: R$ 127,69 e cinco pontos na carteira



FAIXAS
Ônibus circulam em faixa do lado **direito** da pista

Quando podem utilizar os corredores
Veículos de passeio
Proibidos nos horário de funcionamento das faixas. Fora esses horários, o trânsito é liberado. As faixas tem horários diferentes
Táxis
Devem seguir as mesmas regras que os veículos de passeio

Multa: R$ 53,20 e três pontos na carteira

Fonte: http://www1.folha.uol.com.br/infograficos/2013/08/24144-faixas-exclusivas-e-corredores-de-onibus-em-sao-paulo.shtml

O que esta foto evidencia?

Sistema de ônibus emperra em SP e velocidade média fica estagnada em 16 km/h

Performance piorou no horário de pico da tarde; especialistas citam poucos corredores exclusivos

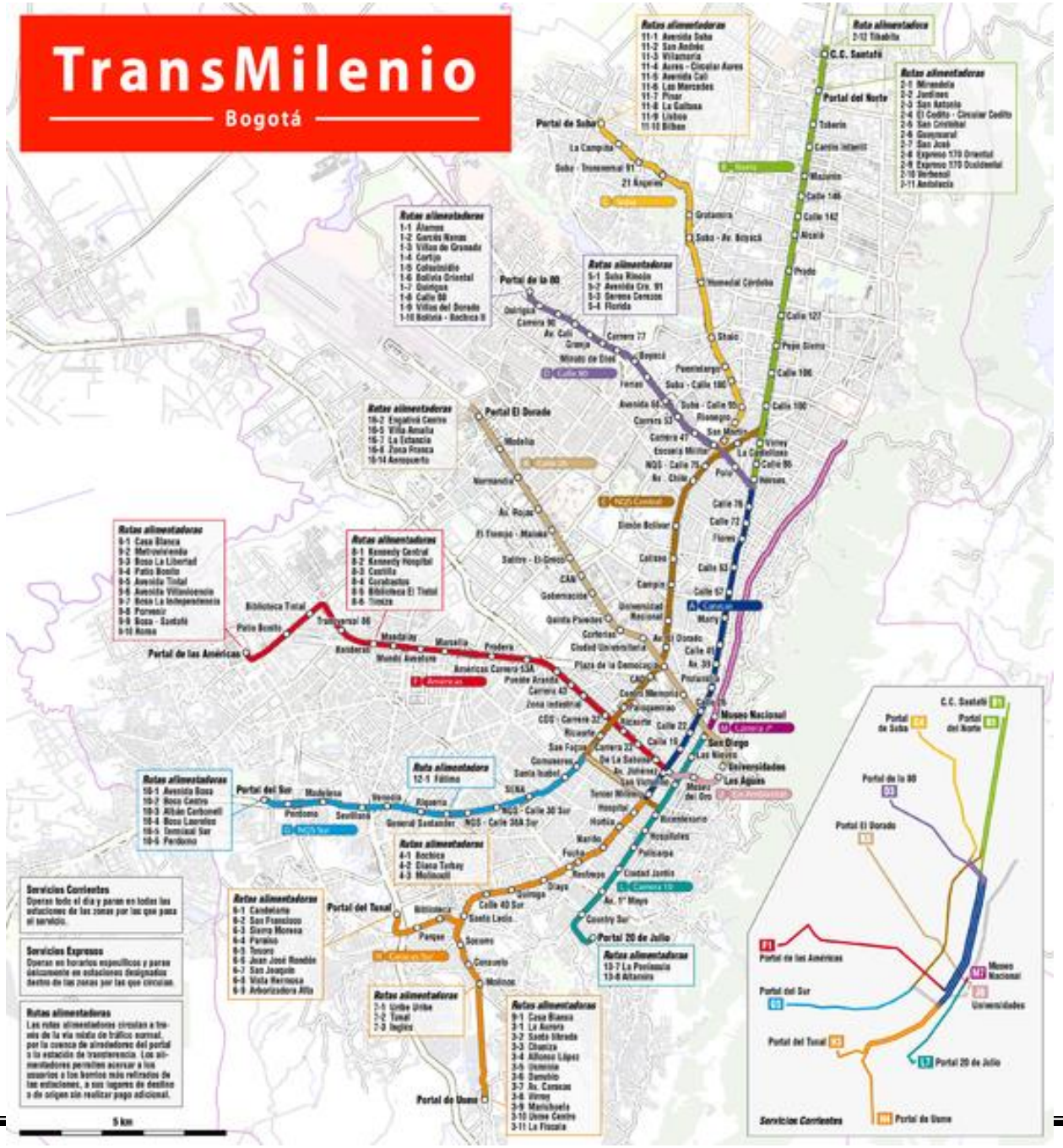
- Nos horários de pico
- Manhã desde 2017, tarde caiu de 17 km/h para 16 km/h
- Vencedor da corrida de São Silvestre correu a velocidade de 20,94 km/h, 39,6% a mais
- Dados calculados com base nos GPS instalados nos ônibus

https://www1.folha.uol.com.br/cotidiano/2020/02/sistema-de-onibus-emperra-em-sp-e-velocidade-media-fica-estagnada-em-16-kmh.shtml

BRT

- ***Bus Rapid Transit***

BRT Transmilenio - Bogotá, Colombia



O que caracteriza os diferentes sistemas de ônibus?

- **Segregação**
- **Cobrança (no veículo ou no embarque)**
- **Pontos de parada (com ou sem ultrapassagem)**
- **Estruturação dos serviços**
  - Terminais de integração
  - Veículos de maior capacidade
  - Diversos serviços: parador, expresso, semi-expresso,....
- **Capacidade (pax/h)**

Novas alternativas de mobilidade estão surgindo

Novas Alternativas: Microtransit & MaaS

waze
OUTSMARTING TRAFFIC, TOGETHER.

waze CARPOOL

Uber

DiDi
99

BlaBlaCar

Rappi

DRT
A evolução do transporte

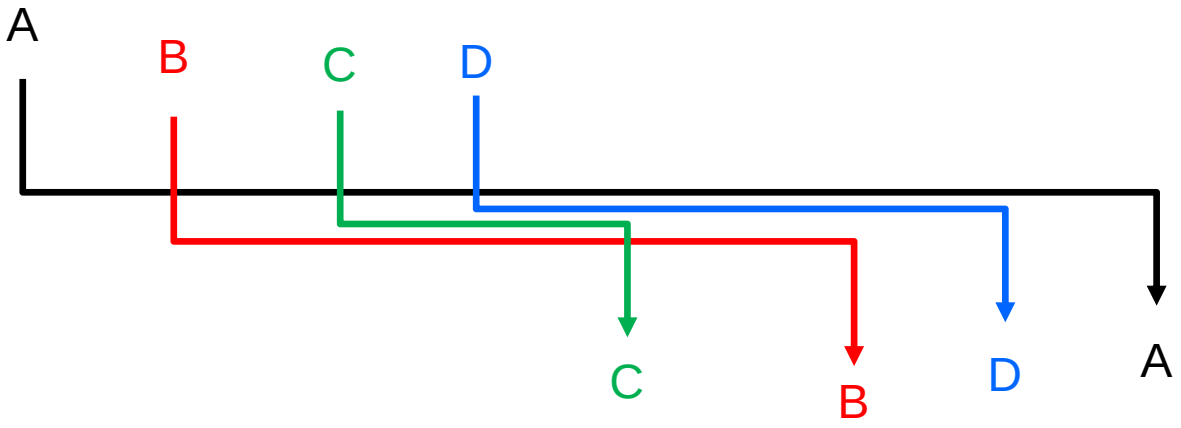
DRT

- Demand Responsive Transportation
  - Também conhecido como ‘microtransit’
- Soluções flexíveis e personalizadas de transporte
  - Em geral, porta-a-porta
  - Transporte público

    → *Mais de uma pessoa sendo transportada no mesmo veículo*
- Que podem complementar (ou até substituir) o sistema de transporte coletivo urbano tradicional
  - Formado por linhas de ônibus e microônibus, BRT’s, metrô, trem, monotrilho, VLT, VLP ....

Sistemas de Transporte sob Demanda

- DRT = *Demand Responsive Transit / microtransit*
- Sem itinerário fixo
- Vários passageiros sendo transportados simultaneamente no mesmo veículo
- Com origens e destinos não coincidentes (porém próximos)
- Que podem embarcam e desembarcam em qualquer local e sequência



DRT tem apresentado elevada mortalidade precoce

- UberPool
- Lyft Line

- Bridj
- Via
- Kutsuplus 

- Split 
- Chariot 

Car pooling...

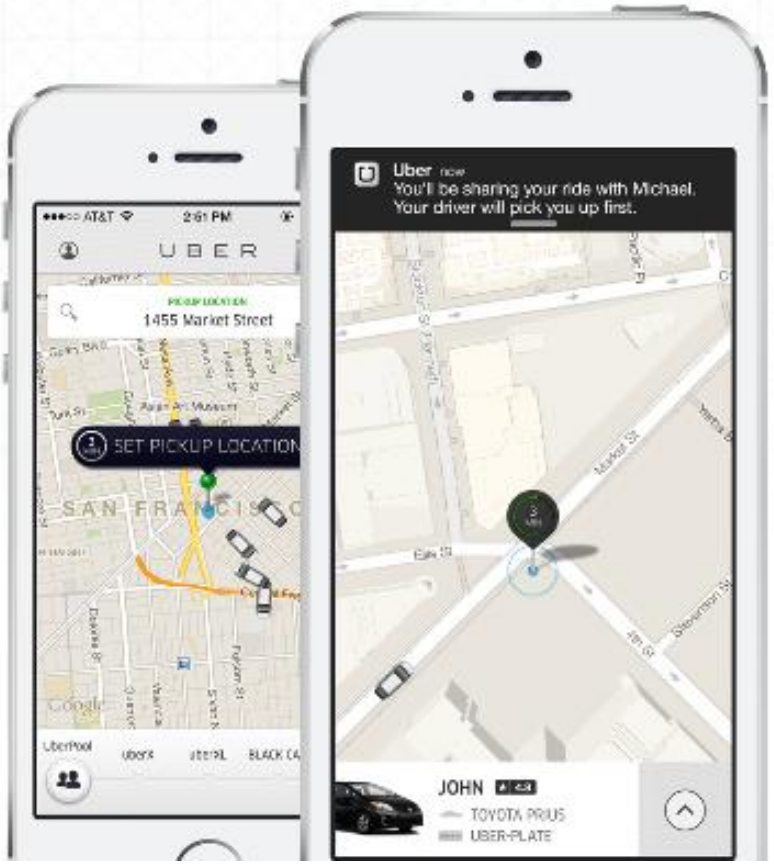
MIT study says 3,000 ride-sharing cars could replace every cab in New York City

http://hubcab.org/#13.00/40.7250/-73.9484

Como funciona

UBERPOOL – THE IDEA

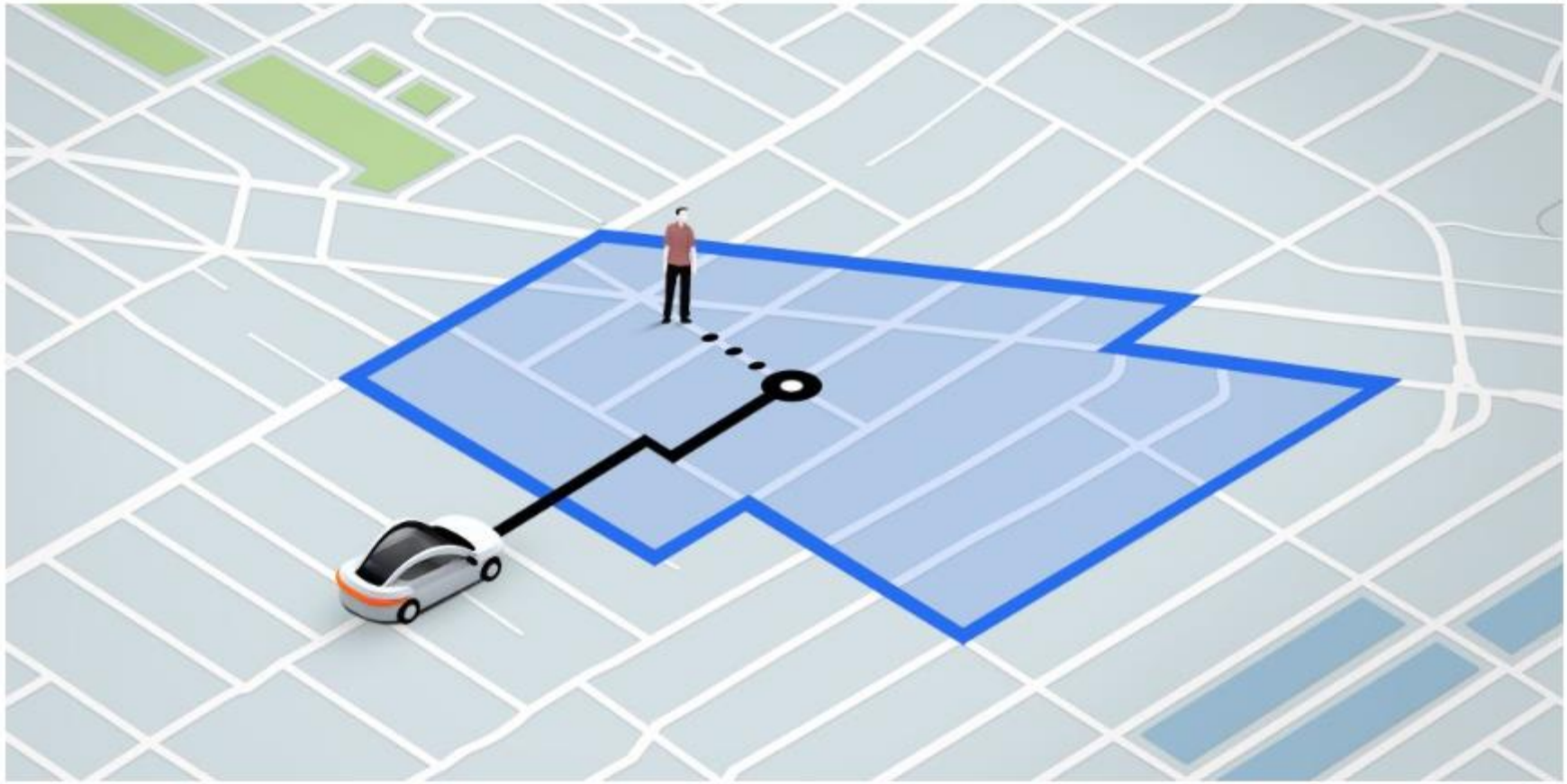
The idea is simple. With UberPool, you share a ride—and split the cost—with another person who just happens to be requesting a ride along a similar route. The beauty, though, is that you still get Uber-style on-demand convenience and reliability: just push the button like before and get a car in five minutes. When we find a match, we notify you of your co-rider's first name.

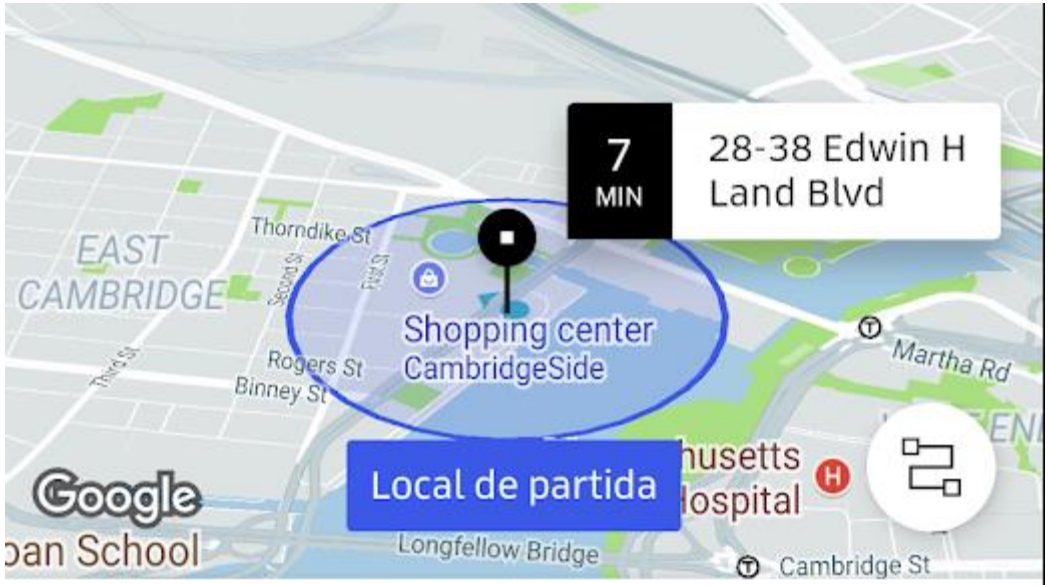


Produtos

Chegou o Uber Juntos: a viagem de carro mais barata da cidade está apenas a alguns passos de você.

29 de outubro de 2018 / Brasil



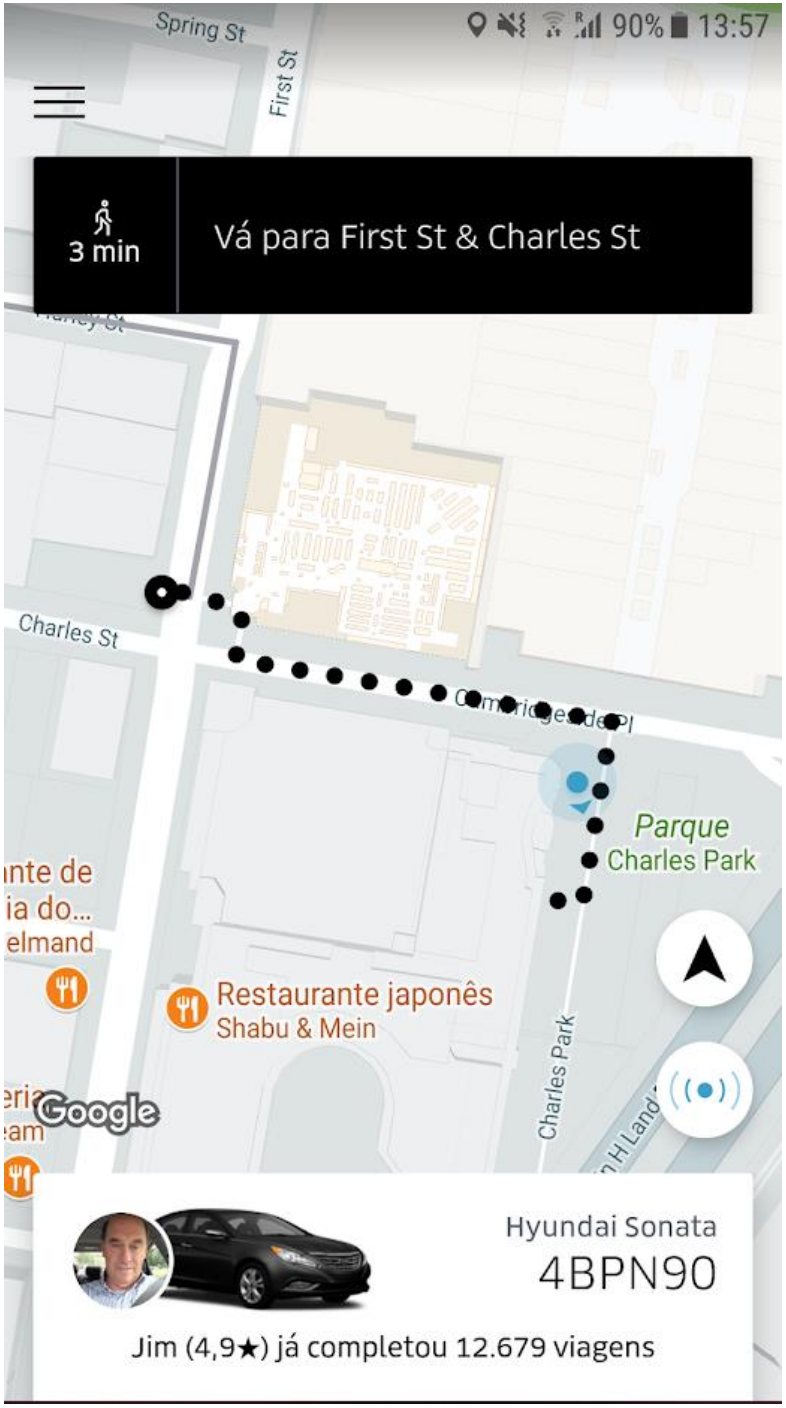


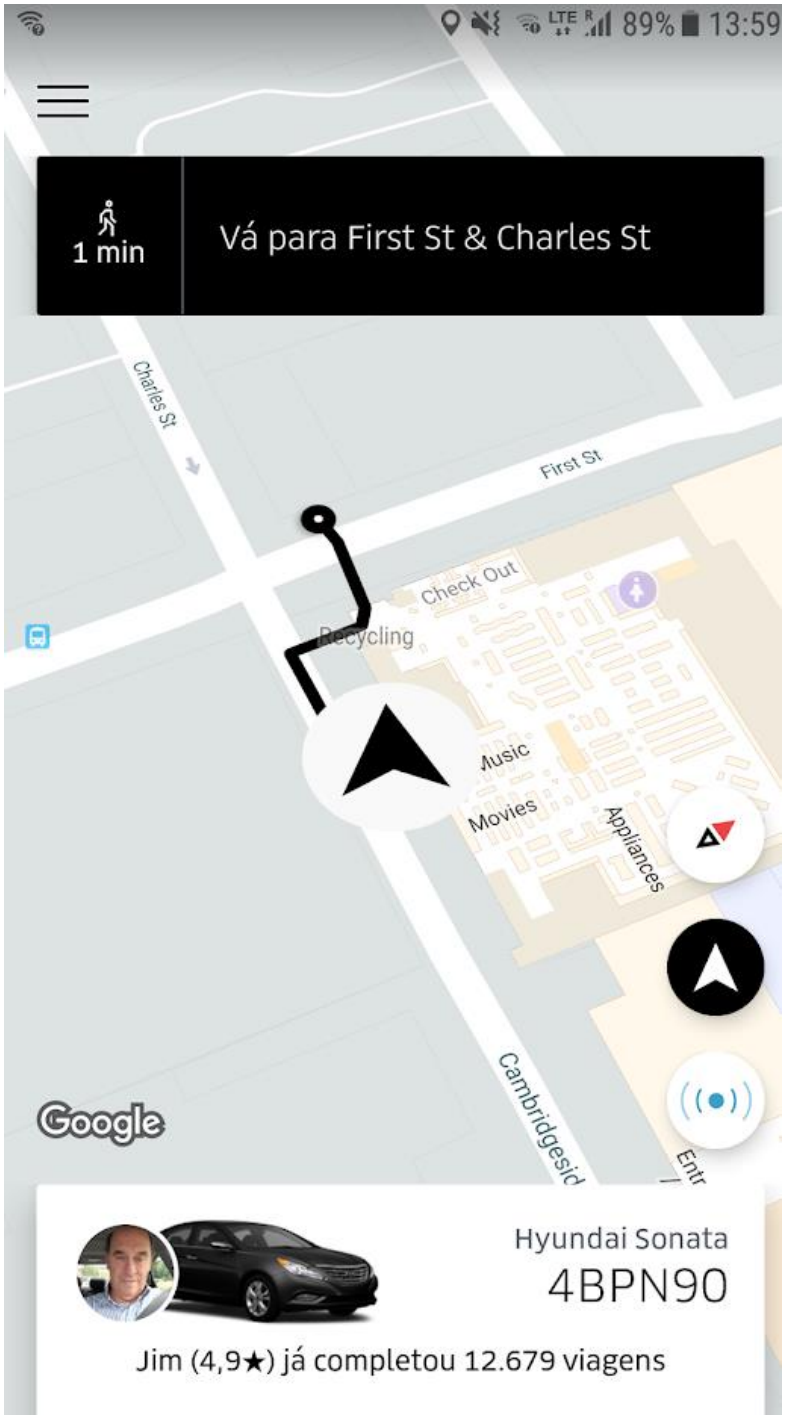
Econômico

Prem

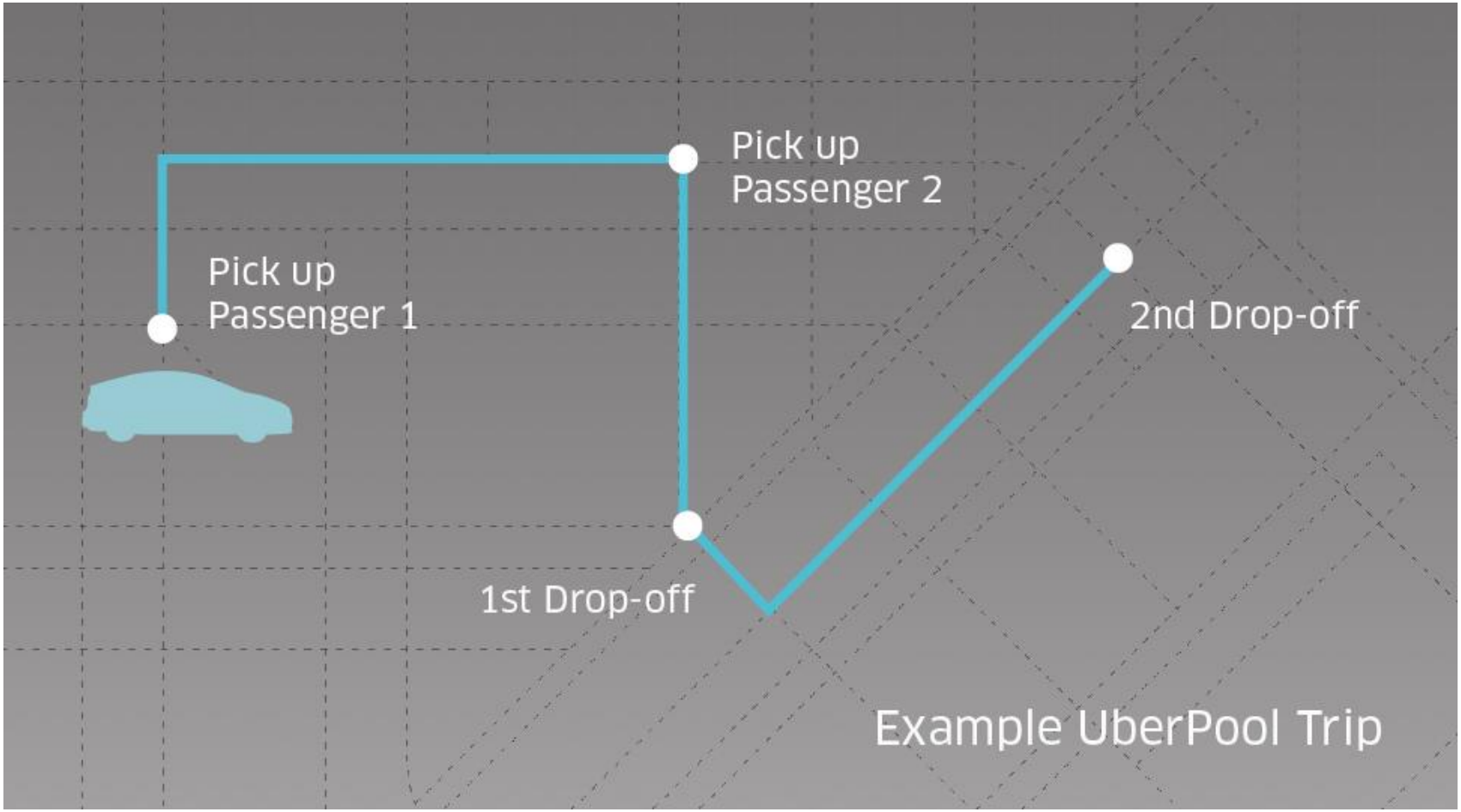
Opção mais barata, viagem compartilhada

Express POOL	POOL	uberX
US$1,91	US$4,03	US$7,48
13:45-13:57	13:45	13:44


Spring St
First St
90% 13:57
3 min
Vá para First St & Charles St
Charles St
Parque
Charles Park
Restaurante japonês
Shabu & Mein
Charles Park
Google
Hyundai Sonata
4BPN90
Jim (4,9★) já completou 12.679 viagens


89% 13:59
1 min
Vá para First St & Charles St
Charles St
First St
Check Out
Recycling
Music
Movies
Appliances
Google
Hyundai Sonata
4BPN90
Jim (4,9★) já completou 12.679 viagens

Rota típica do veículo



TRANSPORTATION | UBER | RIDE-SHARING

Uber Express Pool offers the cheapest fares yet in exchange for a little walking

Uber's first new product in three years

By Andrew J. Hawkins | @andyjayhawk | Feb 21, 2018, 6:00am EST

Uber lança serviço 50% mais barato que o Uber Pool, o Uber Express Pool

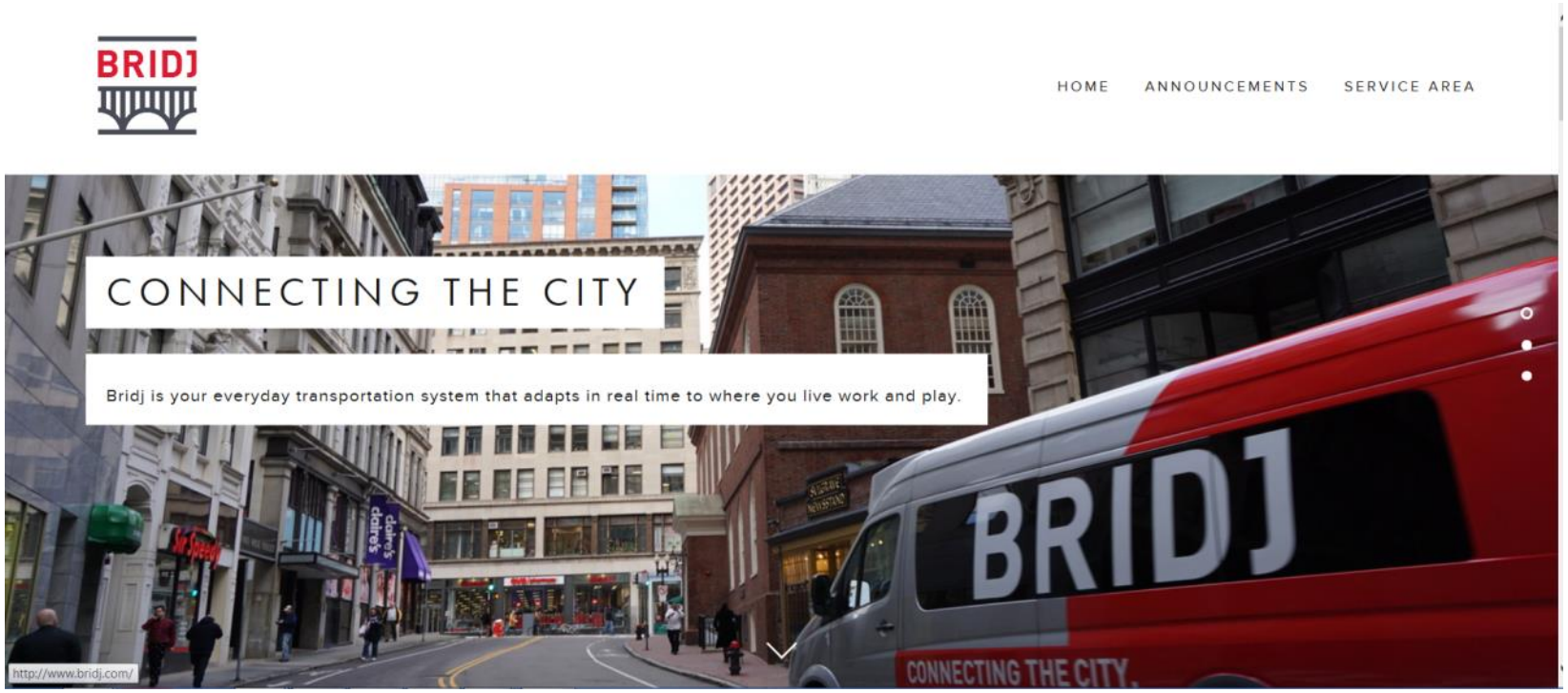
Em troca de redução de preço, usuários terão que caminhar até pontos de encontro para serem buscados pelos motoristas do aplicativo

What is Express POOL?

Express POOL is a new shared ride option that allows you to join other users with similar routes on the same trip and share the cost of the trip. You can take Express POOL wherever uberPOOL is available around the Boston Area. At this time, Express POOL is not available at Logan International Airport and a few other specific venues.

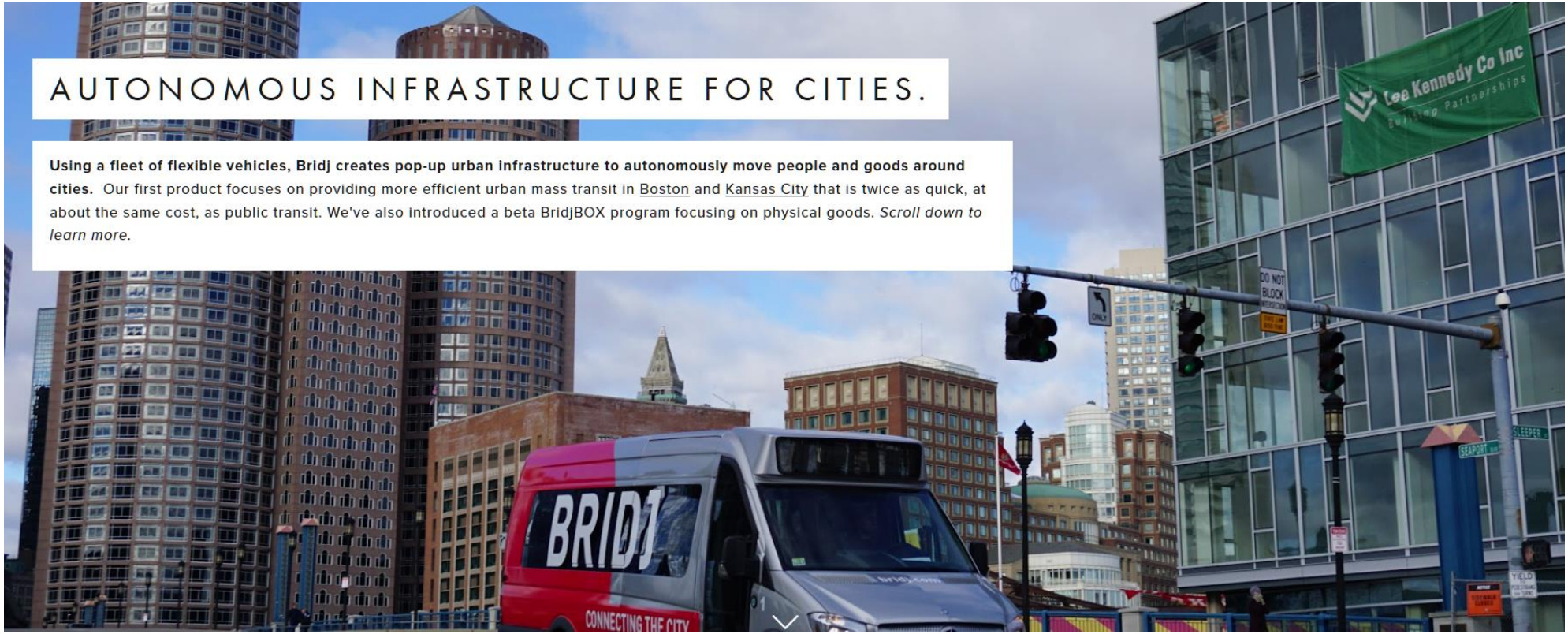
Better routes
We take a few moments to find riders near you for fewer detours en route.

Pickup and dropoff at Express spots
Spots change based on popular routes at the time you request. You'll see walking directions to the best spot.


BRIDJ
HOME
ANNOUNCEMENTS
SERVICE AREA
CONNECTING THE CITY
Bridj is your everyday transportation system that adapts in real time to where you live work and play.
BRIDJ
CONNECTING THE CITY.
http://www.bridj.com/

Bridj


RIP

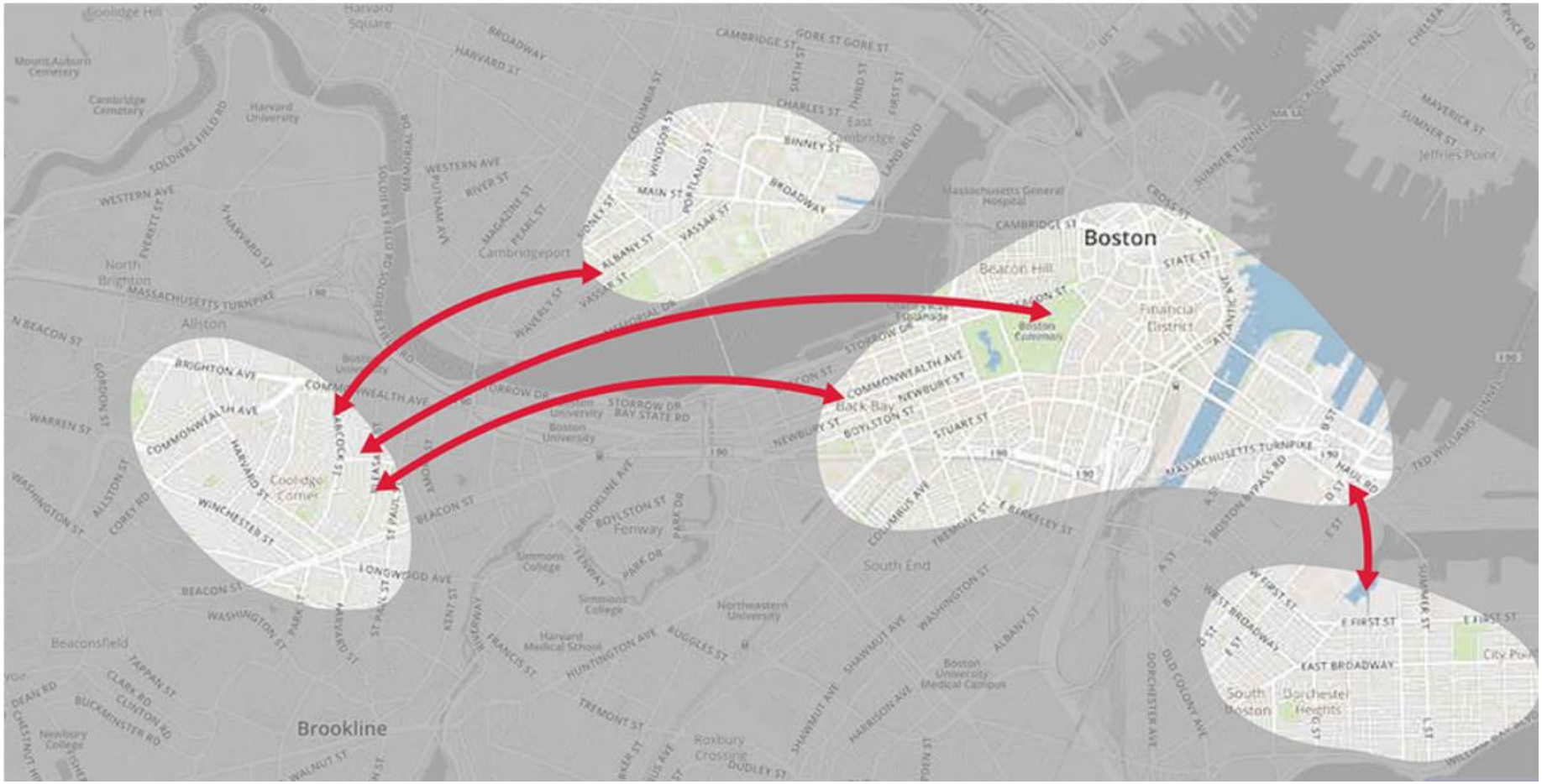


AUTONOMOUS INFRASTRUCTURE FOR CITIES.

Using a fleet of flexible vehicles, Bridj creates pop-up urban infrastructure to autonomously move people and goods around cities. Our first product focuses on providing more efficient urban mass transit in Boston and Kansas City that is twice as quick, at about the same cost, as public transit. We've also introduced a beta BridjBOX program focusing on physical goods. *Scroll down to learn more.*

Área de atuação

- Boston (MA), horários de pico



- Linhas Fixas, horários programados

Bridj, on-demand bus service backed by Ford and others, shuts down

'Major' car deal falls through, leading to startup's demise

by Andrew J. Hawkins | @andyjayhawk | May 1, 2017, 12:27pm EDT

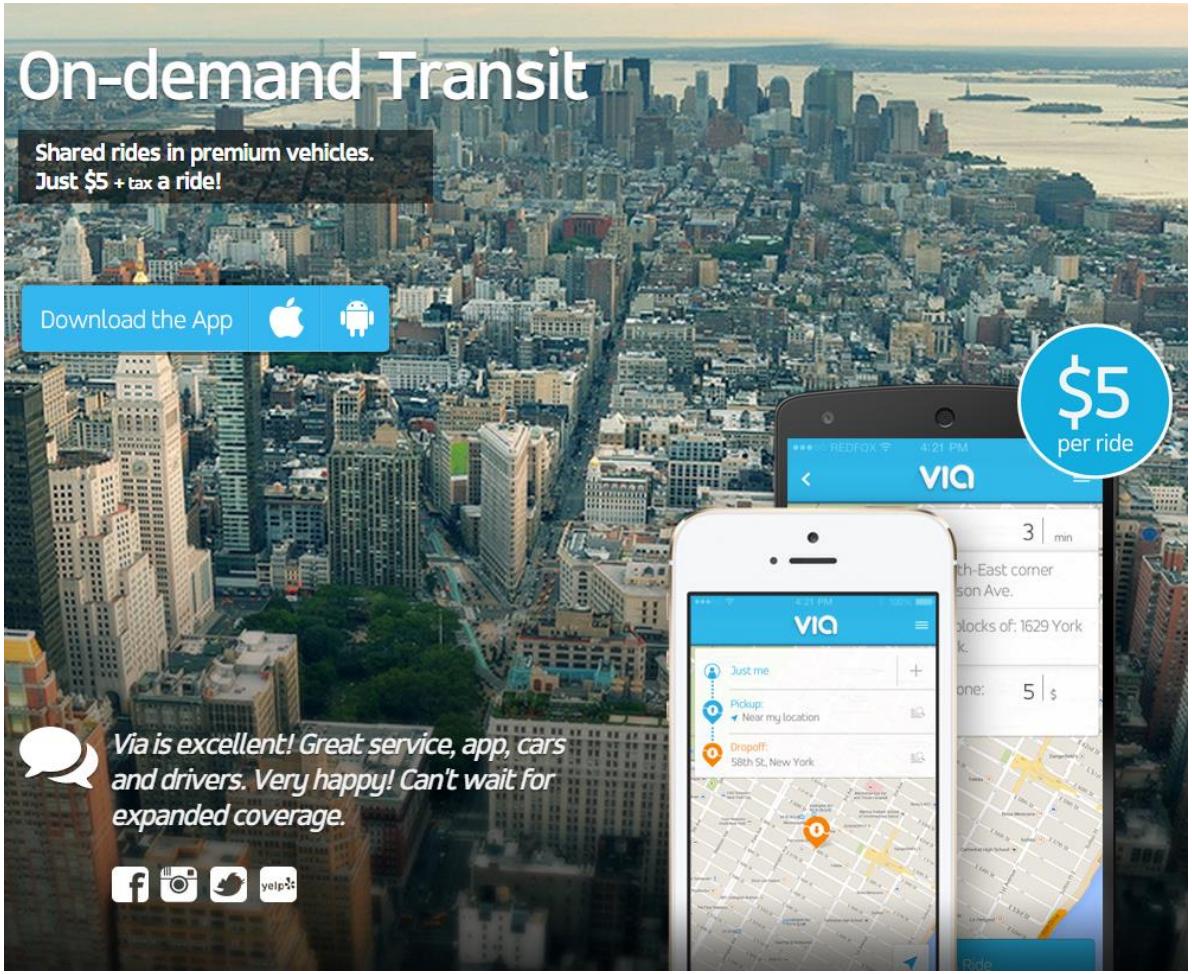
Bridj, the Boston-based on-demand bus service, is closing up shop after failing to close a "major deal" with an unnamed car company, the founder explained in a Medium post yesterday.

Bridj Is Making a Comeback in Sydney

BY RACHEL DOVEY | OCTOBER 18, 2017

(Credit: Bridj)

Bridj, the on-demand bus service that **abruptly ceased operations** in Boston and Washington, D.C., earlier this year, has announced that it's relaunching roughly 10,000 miles and 20 hours of air travel away in Sydney, Australia.


On-demand Transit
Shared rides in premium vehicles.
Just $5 + tax a ride!
Download the App
$5
per ride
VIA
Via is excellent! Great service, app, cars and drivers. Very happy! Can't wait for expanded coverage.

Via

Como funciona

Via. Smarter than the subway. Better than the bus. Cheaper than a taxi.

Book a ride on your phone

Get picked up on your corner by a professionally chauffeured SUV

Share your ride with others going the same way

Save cash and reduce your carbon footprint

The number of passengers you will share a ride with varies depending on who's headed in the same direction at the same time and the make and model of the Via-cle picking you up! Capacities range from 3-6 passengers per Via-cle

Ridesharing Company Via Launches Service in Tel Aviv

After launching operations in cities like New York, Tokyo, Sydney, and Paris, Via arrives at the city whose unique van-based public transportation inspired its ridesharing model

Hagar Ravet 13:12 27.11.18

TAGS: Via Dan Bus Company Ride Sharing Transportation

New York-headquartered ridesharing company Via Transportation Inc. is launching its service in the Tel Aviv metropolitan area, the company announced Tuesday. Via will collaborate with Israeli public transportation company the Dan Bus Company to launch a pilot for its shared ride service using a fleet of vans operated by Dan. Tel Aviv already has a low-tech van-based ride sharing service as part of the city's public transportation lineup.

Published February 21, 2018 3:53 pm, Via NYC

Via Awarded Contract to Develop Singapore's On-Demand Public Bus Service

Via, the leading developer of shared ride technology, has been selected by Singapore's Land Transit Authority (LTA) to leverage its best-in-class ride matching and routing algorithm to incorporate on-demand technology into Singapore's public transit system.

Published July 31, 2018 9:00 pm, Via NYC

Via brings on-demand shared mobility to Tokyo, partners with Mori Building to launch dynamic shuttle

The Mori Building Company, a leading Tokyo-based urban developer, has tapped New York startup Via to launch an on-demand transit service in Tokyo, providing an innovative new transportation solution to urban areas.

Published August 20, 2018 9:00 am, Via NYC

Via to provide its Technology and Support Services for Harvard University's Evening Van Service

Via's first university sector project applies the company's on-demand rideshare technology to the campus environment

Via's on-demand mobility solutions announced today that it has entered into a license agreement with Harvard University for the provision of Via's rideshare technology and support services for the University's evening van service.

Published November 6, 2018 5:10 pm, Via NYC

Via Launches New Rideshare Service in Auckland

Via, in partnership with Auckland Transport and Go Bus, has launched AT Local, an innovative rideshare service providing first-and-last mile connectivity in Devonport.

TRANSPORTE

City Bus 2.0 é uma espécie de Uber do transporte público que está operando em Goiânia

por
Guilherme Tagiaroli

publicado em
20 de fevereiro de 2019 @ 15:59

As pessoas já estão acostumadas com apps de transporte individual. Você chama um veículo via aplicativo, ele vai até o seu local e te leva a um destino. Agora, a empresa norte-americana Via e a HP Transportes Coletivos, companhia de transporte público de Goiânia, estão implementando o City Bus 2.0, uma espécie de UberPool, só que com vans com espaço para múltiplos passageiros. O sistema está em testes desde 11 de fevereiro.

- Cidade americana recusa implementação de transporte público e adota app de caronas
- Mais barato, Uber Juntos faz você andar um pouco para pegar um carro compartilhado

Funciona assim: a pessoa diz onde está e qual o seu destino pelo aplicativo da companhia. O sistema, então, cria uma espécie de parada virtual de ônibus onde o usuário deve esperar o veículo. O valor a ser pago também é mostrado assim que é feita a solicitação via app.

Bloomberg

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Technology
Hyperdrive

Via Shuts Down Ride-Hailing Services to Focus on Public Transit

- Rides in New York and Washington will cease as of Dec. 20.
- Decision comes after investors valued company at $3.3 billion

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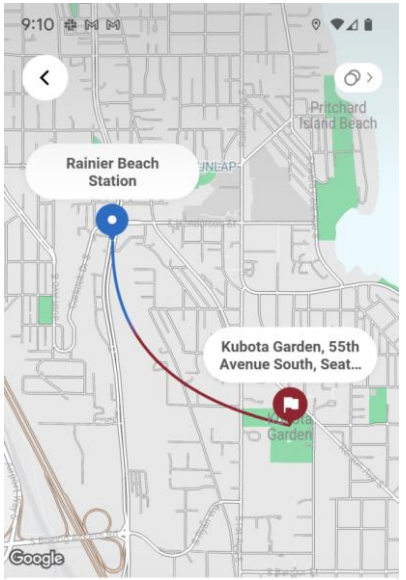
Trending: Amazon is laying off another 9,000 employees — read the CEO's memo

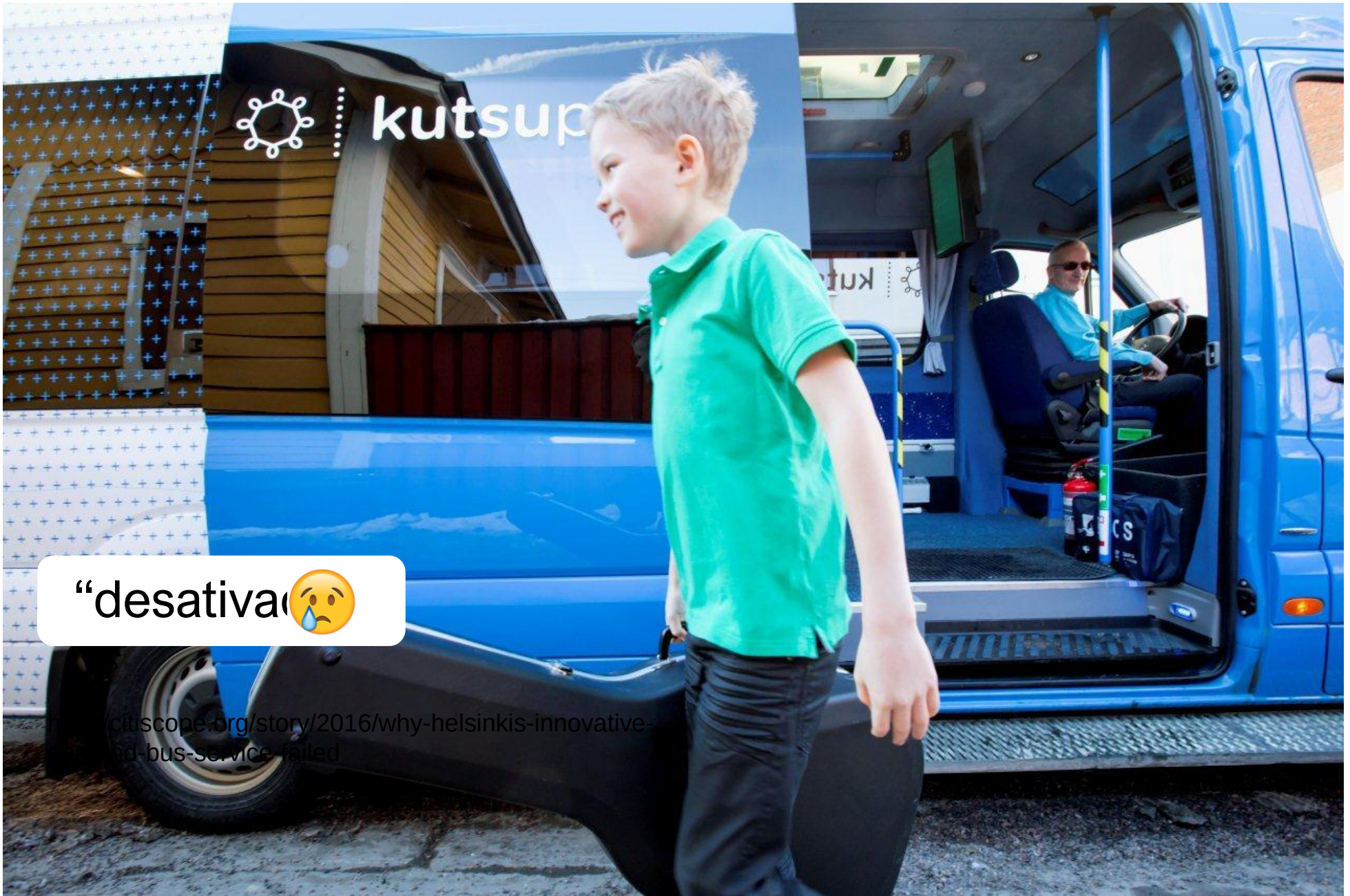
Seattle-area transit agency partners with tech company Via for first- and last-mile rides

BY LISA STIFFLER on March 9, 2023 at 7:04 am



https://www.bloomberg.com/news/articles/2021-12-15/via-shuts-down-ride-hailing-business-to-focus-on-public-transit?leadSource=uverify%20wall
https://www.geekwire.com/2023/seattle-area-transit-agency-partners-with-tech-company-via-for-first-and-last-mile-rides/

Kutsuplus



citiscope.org/story/2016/why-helsinkis-innovative-
d-bus-service-failed

Gridlock

D.C.-based Split acquired by Volkswagen-affiliated mobility group

By Faiz Siddiqui June 2

(Split)

Ride-sharing start-up Split has been acquired by a Volkswagen-affiliated mobility company, its co-founder said, the latest disbanded ride-booking app to find new life with an automaker's investment.

Gridlock

D.C.-based Split will discontinue rideshare service, citing market 'saturation'

By Faiz Siddiqui September 27, 2016

Local ride-hailing service Split expands its offerings to three more neighborhoods. (Photo courtesy of Split).

D.C.-based ridesharing company Split will end its passenger service next week, the company announced in a blog post Tuesday. The crowded marketplace is partly to blame.

The company, whose 100 drivers had shuttled tens of thousands on trips in the District, said it will discontinue service and turn its attention to technology, where it can "refocus our efforts on the next generation of transportation challenges."

Heróis ou vilões? Qual o impacto que aplicativos de transporte têm no trânsito de grandes cidades

27

Gabriela Fujita
Do UOL, em São Paulo 25/02/2018 04h00

Ouvir texto Imprimir Comunicar erro

Marcos Bezerra/Futura Press/Estadão Conteúdo

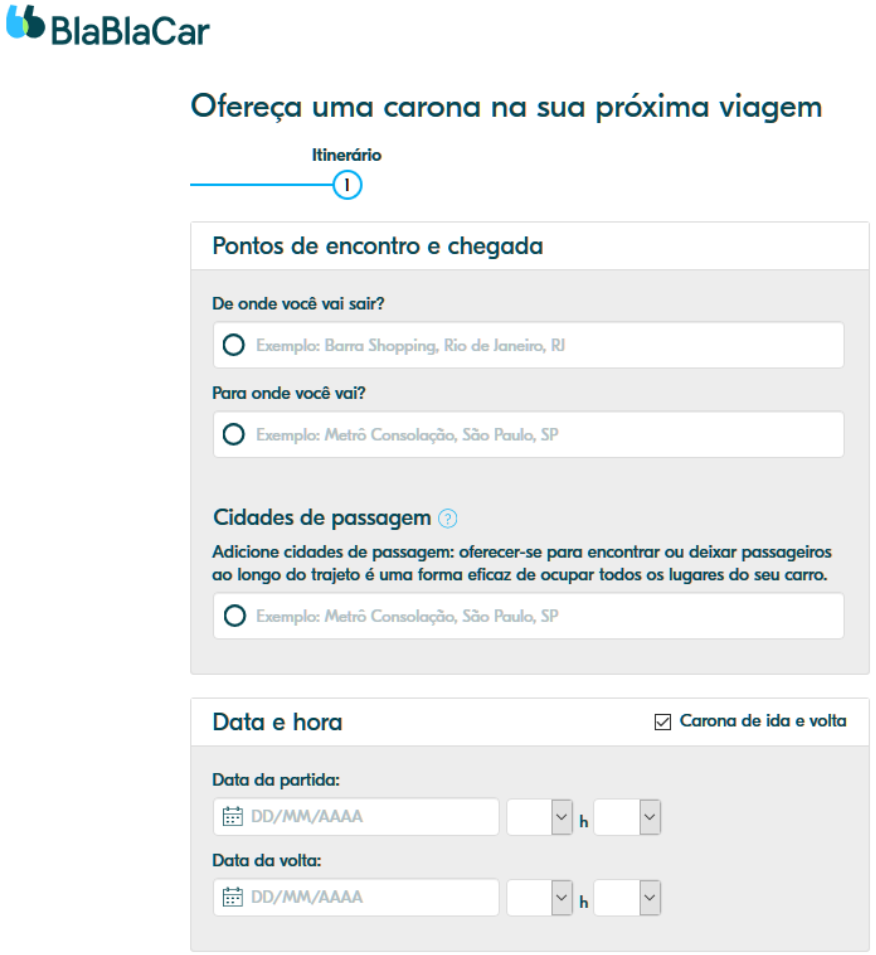
Marginal Pinheiros, via de tráfego intenso na cidade de São Paulo

- É de fato alternativa para a mobilidade urbana?
- Aumentam os congestionamentos?
  - 150-240 mil veículos cadastrados
- São piores que os carros particulares?
  - Ficam circulando o tempo todo, em busca de passageiros
- Enfraquecem o transporte público?
  - Menos gente andando a pé ou de bicicleta na última milha
- Deve haver cobrança pelo uso do espaço urbano?
- Qual o futuro desses serviços pós-pandemia?

Fonte: https://noticias.uol.com.br/cotidiano/ultimas-noticias/2018/02/25/aplicativos-no-transito.htm

“Car sharing”

- Compartilhamento de viagens
- Não é um serviço prestado por profissionais



Minnesota transportation department wants robot buses in the streets next year

Tuesday, February 28, 2017 by Susan Du in News

The Mercedes-Benz Future Bus has a driver, but his job is to just sit back and supervise the computers that do all the work. Mercedes-Benz

Fully autonomous, driverless buses have hit the streets in France, Germany, and Australia. In Switzerland they shuttle college students around campus. In Japan they ferry the elderly. In China they weave expertly through city traffic.

RELATED

Squee! Crowd-funded 'Mystery Science Theater 3000' has a Netflix release date

Bin He: The Futurist

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Why this ad?

Self-driving shuttle coming to Gainesville in April

▲ HIDE CAPTION

Gainesville's RTS bus transit system plans to put an autonomous electric shuttle downtown in April that is expected to look something like this one, the EZ10. [Photo by Jil McIntosh/Wheels]

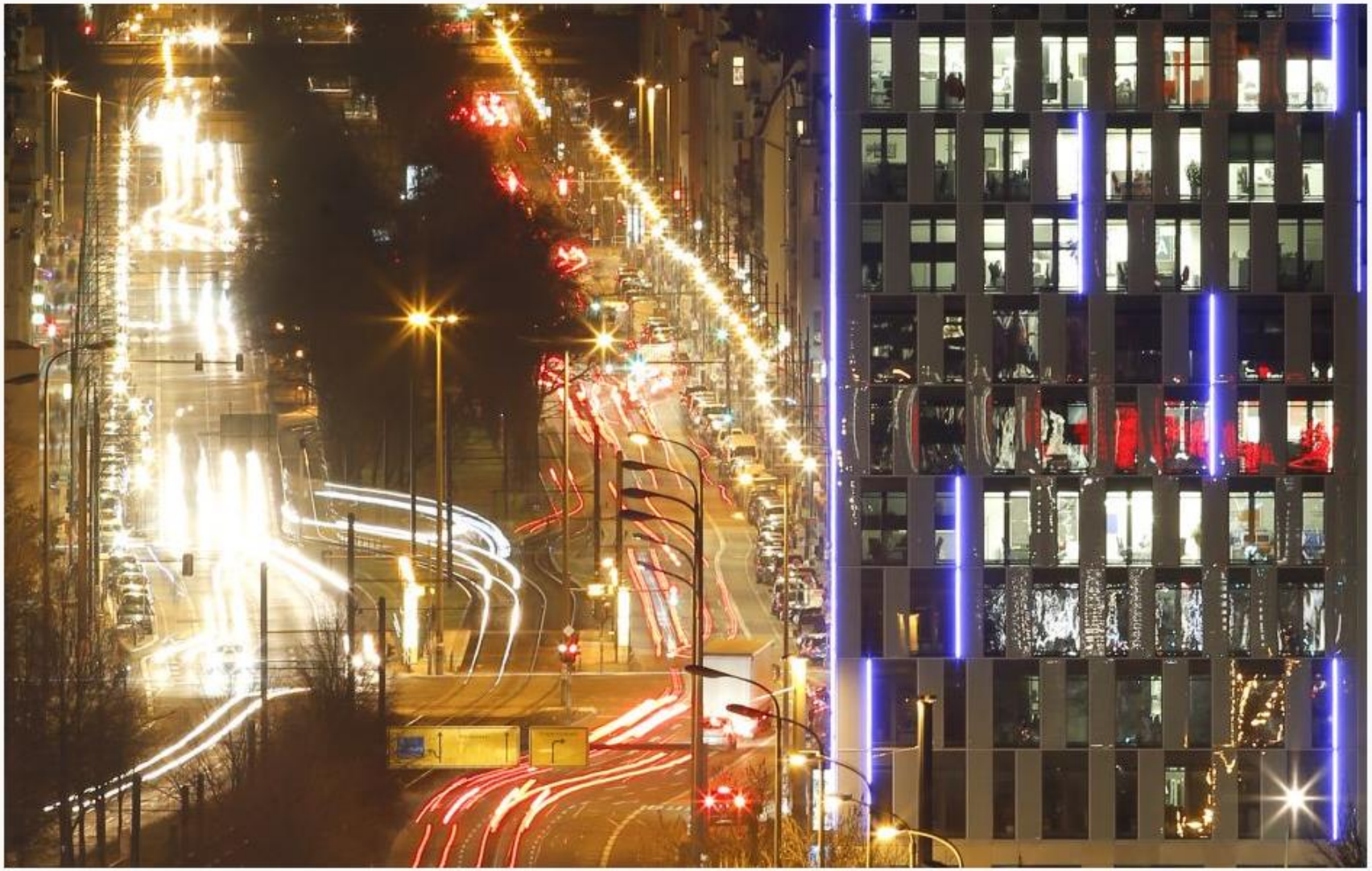
Las Vegas is expanding its self-driving shuttle experiment

Three stops on a 0.6-mile loop downtown

By Andrew J. Hawkins | @andyjayhawk | Nov 6, 2017, 3:40pm EST

FARE GAME

Startups in Germany are racing their Silicon Valley rivals to reinvent the bus



Startups in Germany are racing their Silicon Valley rivals to reinvent the bus

The “shared mobility” industry is a confusing tangle of automakers and tech companies developing services for car-sharing, car-pooling, and ride-hailing at the tap of an app. Passenger cars have been the focus in recent years, but now the humble bus is up for re-imagining as well.

Two startups in Berlin are developing on-demand shuttle buses, equipped with AI that figures out where people are and where they want to go, tracing algorithmically optimized routes around town. One is owned by Volkswagen and will deploy fleets of VW vans, while the other is building an AI-powered platform for urban planners to link roving shuttles into local transport networks.

Fonte: https://qz.com/1011323/german-ride-sharing-startups-vw-moia-and-door2door-are-racing-silicon-valley-rivals-to-reinvent-the-bus

Journal of Transportation Engineering, Part A: Systems / Volume 143 Issue 11 - November 2017

Some Thoughts on the Future of Transportation Engineering

Chris Hendrickson, Dist.M.ASCE

Hamerschlag University Professor, Dept. of Civil and Environmental Engineering, Carnegie Mellon Univ., Pittsburgh, PA 15208. E-mail: cth@cmu.edu

DOI: 10.1061/JTEPBS.0000092

In honor of the 60th anniversary of the *Journal of Transportation Engineering*, we are publishing two articles, one on the history of the *Journal* and one on prospects for the future of transportation engineering.

Predictions of the future of transportation engineering have a long history of being incorrect. Some predictions are fanciful, such as travel to the moon via a projectile. Some predictions are overly optimistic, such as the expectation of common urban air travel from 50 years ago. Some predictions lack imagination, such as the prediction that the market for home computing would be minuscule.

This article will focus on the revolutionary changes in transportation that are occurring right now and will be continuing over the next decades. These changes include (1) automation and connectivity, (2) alternative fuels and fuel economy standards, and (3) the availability and use of so-called big data. I do not believe transportation has seen such drastic changes since the early twentieth century, which was a time when motor vehicles became a dominant mode of travel, petroleum products became the fuel of choice for transportation, and airplanes first appeared.

First, vehicles are becoming more automated and starting to communicate. Basic automation and communication technologies have been around for several decades. At Carnegie Mellon University, we just celebrated 30 years of research on automated vehicles. Initially the vehicles were fairly primitive: I remember one pioneering vehicle programmed to follow straight lines. It tried to go up turns green. Adaptive cruise control is a simple technology that can manage these starts and make traffic flow more smoothly.

What are the implications of these new technologies for our roadway infrastructure? Biehler et al. (2014) looked at some appropriate policies. For example, roadside message signs will not be necessary with an entire fleet of connected vehicles. In rural areas, moving farm and other equipment should be easier and safer with communication connectivity and improved traveler information. In the short run, Biehler et al. recommend moving ahead on installation of dedicated short-range communication equipment with traffic signal upgrades to enable future communications. Because dedicated short-range communications can be used in existing vehicles, the introduction of widespread connectivity could happen relatively quickly.

There are some big uncertainties in the Biehler report. Will crash reduction, better traveler information, and platooning be sufficient to reduce congestion and thereby make capacity expansion unnecessary? Will safer vehicles be designed to downsize and achieve better fuel economy? How much extra travel will result from making driving less burdensome and, eventually, available to population groups for which driving is now difficult or impossible? How much and in what fashion will traffic engineering procedures and standards require change? These are pressing questions that transportation engineers will have to answer in the next few decades.

Beyond infrastructure and vehicle impacts, there will also be a wide range of effects on virtually everything and everyone connected with transportation: freight systems, public transportation, taxis, the insurance industry, component suppliers, parking lot providers, and real estate developers. Transportation engineers will have to change their assumptions about traffic flow and driver behavior. Automation and connectivity are truly revolutionary changes in how transportation performs.

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Journal of Transportation Engineering, Part A: Systems / Volume 143 Issue 11 - November 2017

Some Thoughts on the Future of Transportation Engineering

Chris Hendrickson, Dist.M.ASCE

Hamerschlag University Professor, Dept. of Civil and Environmental Engineering, Carnegie Mellon Univ., Pittsburgh, PA 15208. E-mail: cth@cmu.edu

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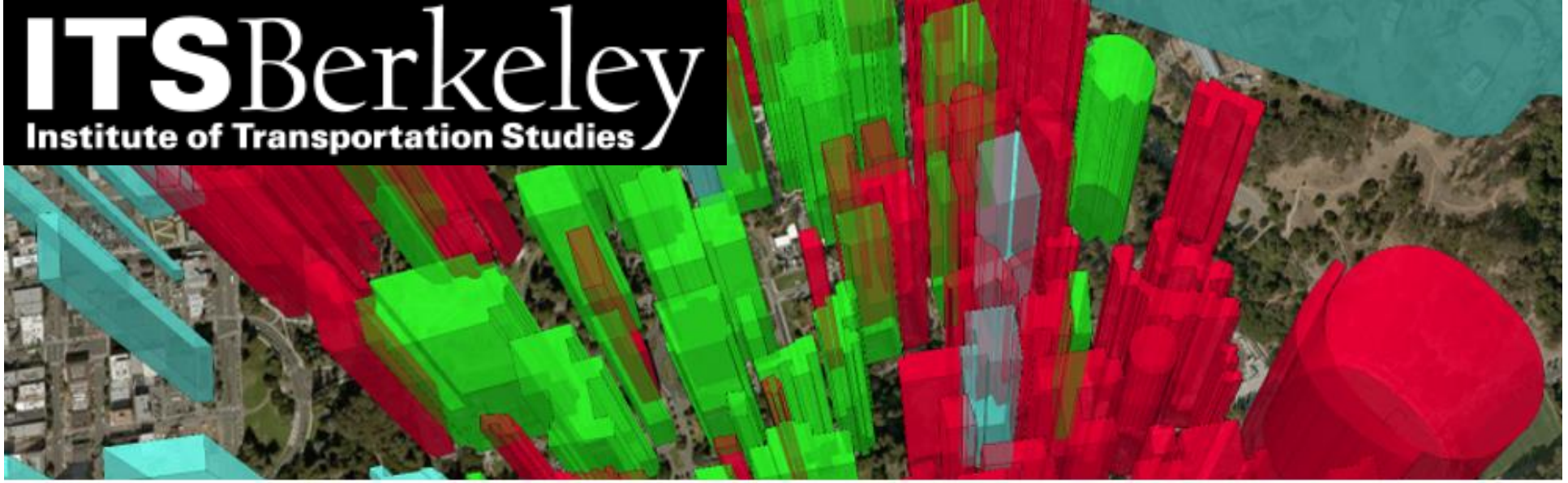
ITS Berkeley
Institute of Transportation Studies



The past decade saw the explosion of data, with the convergence of sensing, computing, and communication on single platforms, and the transportation landscape is just beginning to see the profound changes to come from the use of this data by new technologies in the fields of automation, energy, planning, and operations.

A new era is beginning in which the transportation sector has the opportunity to enable decision making based on large-scale data analytics

Dados, muitos dados...

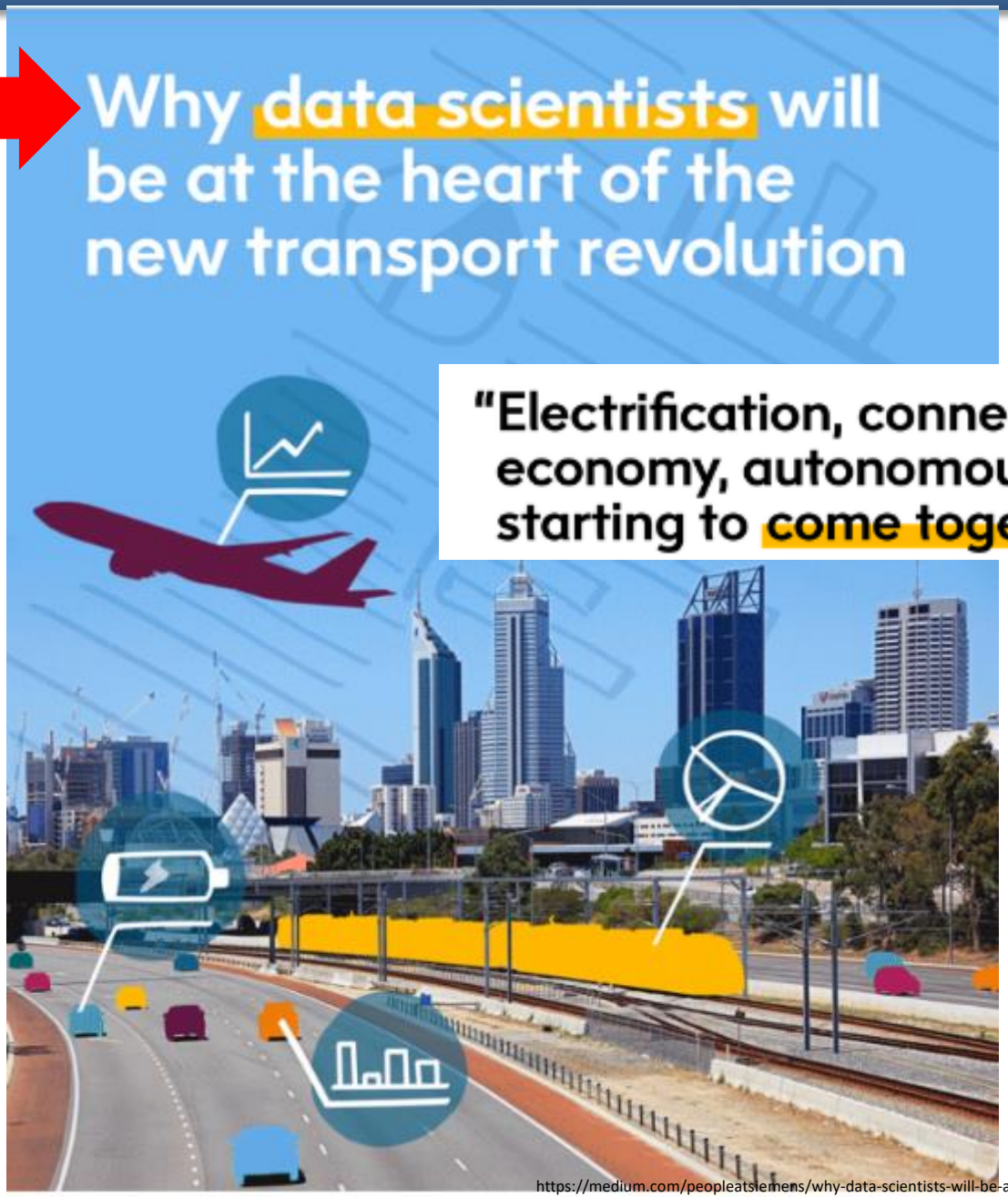
Bilhetagem : 13 milhões transações /dia

Ônibus em SP: 30 milhões registros/dia

Veículos aplicativos:
80 milhões registros de localização por dia

Radares em SP: 25 milhões registros/dia

Mobilidade Inteligente: Big Data + Analytics + IA



https://medium.com/peopleatsiemens/why-data-scientists-will-be-at-the-heart-of-the-new-transport-revolution-1c9337b5f8dc

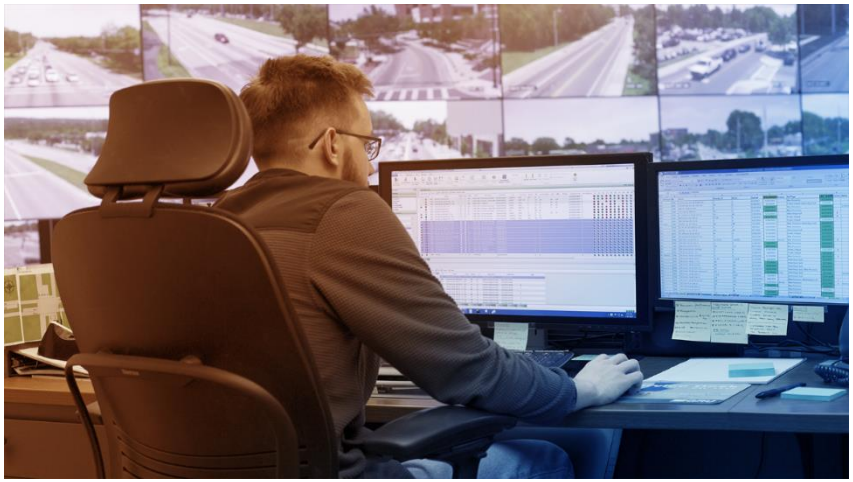
As AI (Artificial Intelligence) becomes ubiquitous, it transforms many aspects of the environment we live in. In cities, AI is opening up a new era of an endlessly reconfigurable environment. Empowered by robust computers and elegant algorithms that can handle massive data sets, cities can make more informed decisions and create feedback loops between humans and the urban environment. It is what we call the raise of UI (urban intelligence).

UF HERBERT WERTHEIM COLLEGE OF ENGINEERING

University of Florida Transportation Institute

ABOUT RESEARCH EDUCATION TECHNOLOGY TRANSFER

COLLABORATE ON NEWLY-FUNDED NSF SMART CITIES PROJECT



The goal of this project is to enable cities and communities to deploy technology that saves lives through safer transportation systems.

Video data will be gathered through edge-based real-time machine learning (ML) techniques and videostream processing from intersections and public vehicles.

TRANSPORT REVIEWS
https://doi.org/10.1080/01441647.2023.2189322

Routledge
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Integrated people-and-goods transportation systems: from a literature review to a general framework for future research

Rong Cheng, Yu Jiang and Otto Anker Nielsen

DTU Management, Department of Technology, Management, and Economics, Technical University of Denmark, Lyngby, Denmark

ABSTRACT

The promotion of urban mobility by integrating people-and-goods transportation has attracted increasing attention in recent years. Within this framework, diversified forms such as co-modality, freight on transit, and crowdshipping have been proposed, piloted or implemented. The success of the implementation and market penetration depends on not only the novelties of the concept but also the planning and operational efficiency. Thus, a comprehensive review focusing on the operation of integrated people-and-goods transportation systems and associated critical decisions and subproblems is performed. Different practical forms in which people and goods are transported in an integrated manner are identified. The critical decisions associated with each form and subproblem are discussed, along with corresponding models and solution approaches. Notably, because integrated transportation systems are in the early exploration stage at present, new forms are expected to emerge. Therefore, this paper proposes a general framework to realise the planning and operation of new forms in the future. The decisions and subproblems identified from existing forms are fed to the proposed general framework to identify two key research opportunities: to improve or extend existing research and to conduct pioneering research to fill the gaps in the frameworks for operating potential forms of integrated people-and-goods transportation.

Transportation Research Part D 121 (2023) 103795

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Passively generated big data for micro-mobility: State-of-the-art and future research directions

Hans-Heinrich Schumann [a], He Haitao [a,*], Mohammed Quddus [b]

[a] School of Architecture, Building and Civil Engineering, Loughborough University, UK
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ABSTRACT

The sharp rise in popularity of micro-mobility poses significant challenges in terms of ensuring its safety, addressing its social impacts, mitigating its environmental effects, and designing its systems. Meanwhile, micro-mobility is characterised by its richness in passively generated big data that has considerable potential to address the challenges. Despite an increase in recent literature utilising passively generated micro-mobility data, knowledge and findings are fragmented, limiting the value of the data collected. To fill this gap, this article provides a timely review of how micro-mobility research and practice have exploited passively generated big data and its applications to address major challenges of micro-mobility. Despite its clear advantages in coverage, resolution, and the removal of human errors, passively generated big data needs to be handled with consideration of bias, inaccuracies, and privacy concerns. The paper also highlights areas requiring further research and provides new insights for safe, efficient, sustainable, and equitable micro-mobility.

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A literature review of mobility services: definitions, modelling state-of-the-art, and key considerations for a conceptual modelling framework

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ABSTRACT

This paper presents a comprehensive literature review focused on the supply side of mobility services, providing relevant insights at the conceptual, operational, and modelling levels. Definitions are first drawn from the Mobility as a Service paradigm due to its predominance in the literature. This is followed by an assessment of the operational features of a range of mobility services, including carsharing, bikesharing, ridehailing, and demand responsive transit. To conclude the review, the state-of-the-art in modelling approaches for mobility services is reported, at different levels of complexity and integration. Three of the most important findings and arguments from this paper suggest that a high degree of generality exists for operational features of mobility services; that it is essential to make a distinction between Mobility as a Service and a mobility service in isolation; along with the argument that human agency should be carefully considered in modelling efforts, both for user agent and driver agent decision-making processes. Finally, key considerations are proposed for the future development of a conceptual framework for modelling the supply side of mobility services, which would have a generic service provider model as its core component.

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New mobility services: Taxonomy, innovation and the role of ICTs

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1. Introduction

Supported by advancements of information and communication technologies (ICTs), various new types of mobility services such as car-sharing and ride-sourcing have seen rapid advancements in the last decade. The term *new mobility* or *new mobility services* is used in various contexts today. For example, a consortium of ten European authorities and private companies published a policy paper on the topic of *new mobility*: in this paper, car-sharing, ridesharing, bike sharing, and MaaS (Mobility as a Service) are referred to (BMW Group et al., 2018). A recent report prepared by POLIS Network, a network of European cities and regions cooperating for innovative transport solutions, explores case studies to integrate and govern *new mobility services* (Bidasca, 2019). In these case studies, car-sharing, bike-sharing, electric kick-scooters, ride hailing, navigation services and journey planners, real-time passenger information, Mobility as a Service, and autonomous vehicles are treated as *new* or *future* mobility services. Kamargianni et al. (2016) name shared mobility services such as car-sharing, bike-sharing and Mobility as a Service as *recent approaches* to tackle the challenge arising from growing pressure on urban passenger transport systems. In the same literature, they refer to smart card technology, mobility package integration that allows "customers to pre-purchase usage of various transport modes", and ICT integration to assemble information of various modes of transport as new approaches. Yanocha (2018) focuses on dockless bike-sharing in her discussion paper titled "Optimising New Mobility Services". Ripa (2019) reports a new monitoring platform of "new mobility services such as e-scooters, shared taxis and rental bicycles" in Hamburg.

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Transportation Research Part A

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Inferring origin and destination zones of transit trips through fusion of smart card transactions, travel surveys, and land-use data

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ABSTRACT

This paper presents a data fusion method to infer the origin and destination zones of transit trips from smart card data. The fusion framework has disaggregate mixed multinomial logit models at its core that predict the most probable origin and destination zones of individual transit trips using smart card transaction records, land use data, and transit system characteristics. The logit models are estimated using revealed trip origin and destination responses from a travel survey that are augmented by land use and transit system data to provide contexts about the zones' trip generation and attraction potentials. For empirical analysis, the methodology is applied to the smart card system of the Greater Toronto and Hamilton Area. Specifically, it is tested under different system configurations (tap-on-only and tap-on-and-off) and for networks with substantial shares of automobile and walk access/egress. When applied to transit trips constructed from the smart card transactions, the estimated models successfully capture the spatial distribution of trip origin and destination at the traffic analysis zone level. The empirical analysis also demonstrates that the proposed fusion method can be appropriately used to reconcile information provided by transit smart card and travel surveys to generate up-to-date transit demand data necessary for public transport planning and operations.

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Advancing research in transportation and public health: A selection of twenty project ideas from a U.S. research roadmap

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ABSTRACT

Background: Transportation policies and projects have multiple impacts on health. Research on these impacts can help promote positive and reduce adverse health consequences of decisions made by transportation agencies.

Methods: In 2019 the U.S. National Cooperative Highway Research Program published a research roadmap for transportation and public health based on an extensive literature search and key informant interviews. The roadmap identified 44 research gaps and 122 research needs on a wide range of relevant topics. From this list, using pre-established criteria including specificity, equity, potential impact, and long-term usefulness, we selected 20 topics suitable for further research especially in academic settings.

Results: We present the questions, context, and possible research approach for each of the 20 topics. These topics cover issues ranging from integrating equity into performance measures and developing forecasting models for active travel to incorporating health questions into routine household travel surveys and examining health impacts of autonomous vehicles. We added questions on the impacts of the COVID-19 pandemic on transportation.

Discussion: This list will be useful to faculty, researchers, and students as they consider topics for research in transportation and public health. Results of research on these topics could influence transportation decisions in policy making, planning and community participation, capital programming, project design, and implementation. Future leaders of transportation agencies, transportation providers, and advocacy organizations may be more likely to consider transportation policies that incorporate a health perspective if their training includes research findings that increase their awareness of the health impacts of these policies.

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Cities

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Exploring the potential role of bikeshare to complement public transit: The case of San Francisco amid the coronavirus crisis

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ABSTRACT

The recent worldwide SARS-CoV-2 (COVID-19) pandemic has reshaped the way people live, how they access goods and services, and how they perform various activities. For public transit, there have been health concerns over the potential spread to transit users and transit service staff, which prompted transportation agencies to make decisions about the service, e.g., whether to reduce or temporarily shut down services. These decisions had substantial negative consequences, especially for transit-dependent travelers, and prompted transit users to explore alternative transportation modes, e.g., bikeshare. However, local governments and the public in general have limited information about whether and to what extent bikeshare provides adequate accessibility and mobility to those transit-dependent residents. To fill this gap, this study implemented spatial and visual analytics to identify how micro-mobility in the form of bikesharing has addressed travel needs and improved the resilience of transportation systems. The study analyzed the case of San Francisco in California, USA, focusing on three phases of the pandemic, i.e., initial confirmed cases, shelter-in-place, and initial changes in transit service. First, the authors implemented unsupervised machine learning clustering methods to identify different bikesharing trip types. Moreover, through spatiotemporally matching bikeshare ridership data with transit service information (i.e., General Transit Feed Specification, GTFS) using the tool called OpenTripPlanner (OTP), the authors studied the travel behavior changes (e.g., the proportion of bikeshare trips that could be finished by transit) for different bikeshare trip types over the three specified phases. This study revealed that during the pandemic, more casual users joined bikeshare programs; the proportion of recreation-related bikeshare trips increased; and routine trips became more prevalent considering that docking-station-based bikeshare trips increased. More importantly, the analyses also provided insights about mode substitution, because the analyses identified an increase in dockless bikeshare trips in areas with no or limited transit coverage.

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Invited Review

A review of urban transportation network design problems

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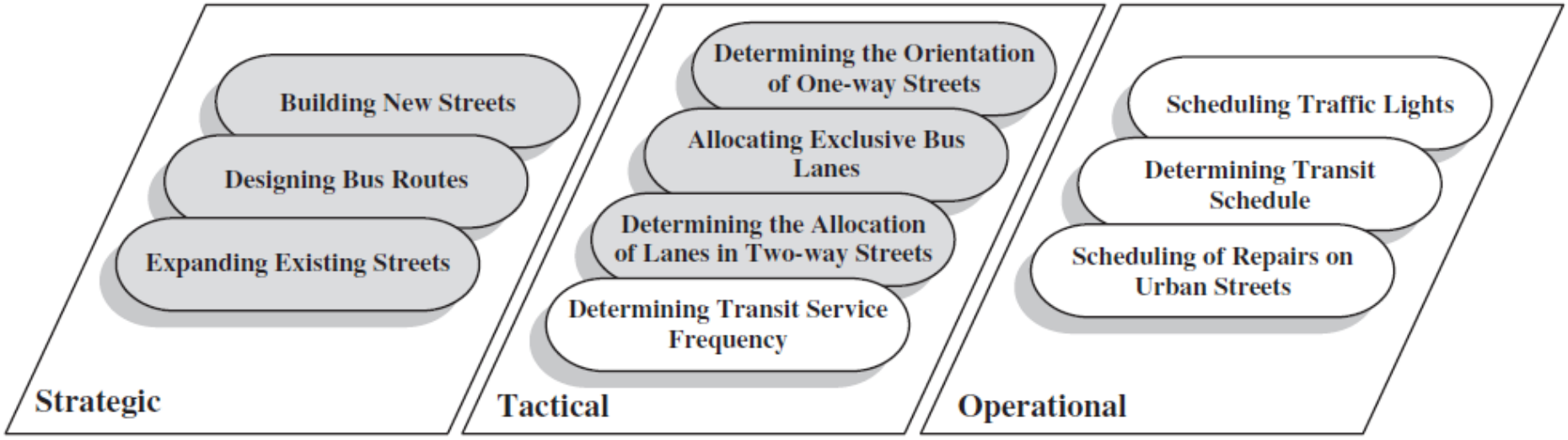

Fig. 1. Examples of decisions in UTNDP.