Uber, Lyft, Hyperloop und Co – Lösung oder Problem?

Mobilitätssysteme in den USA

Dr. Knut Sauer – Digital Mobility Ventures
Los Angeles, California
By 2025
75% of global GDP growth will be generated by middleweight cities in emerging markets

Today
25% of all greenhouse gas emissions come from transportation

By 2030
Urban population will grow from 3.5 billion to ~5 billion, mainly in developing countries
Bedarfsverdoppelung bis 2050

In trillion pkm

2010

<table>
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<tr>
<th>OECD</th>
<th>Non-OECD</th>
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<tr>
<td>10.2</td>
<td>38.8</td>
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2050

<table>
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<th>Non-OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3</td>
<td>49.0</td>
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</table>

Sources: ITDP/UC Davies 2014: A global high shift scenario; UITP/ADL 2014: Future of Urban Mobility, expecting even higher growth (x2.5) over this period.
Los Angeles, United States

Population Growth in 150 Years

Quelle: City Lab Project
Lösung 1 – Uber, Lyft & Co. - Warum dann noch den ÖV?

San Francisco might put the brakes on Uber and Lyft, after a new report has pinned the city's worsening congestion on the ride-sharing services.

The San Francisco County Transportation Authority report found that the transportation network companies (TNC) like Lyft and Uber caused a 31 per cent increase in vehicle hours on the road – far outweighing the impact of other causes, such as population and employment.

City blames half of new congestion on Lyft, Uber

Analysis claims that ride-hailing apps generated as much new traffic as job and population growth combined.

By Leonid Bershidsky
July 31, 2018, 2:41 PM GMT+2

NAME Uber for Your City’s ion

Competitors aren’t the solution to traffic problems, but they don’t cause them, either.
Modalsplit Personenverkehr
New York City

Mrd PAX Miles, Source: MTA
“Lösung 2” – Hyperloop – Alles nur Hype?

Hyperloop firm unveils first images of its new test track in Toulouse

**KEY POINTS**

- Hyperloop Transportation Technologies (HTT) revealed images of its new full-scale test track in Toulouse, France, where it will start a series of tests for its hyperloop passenger pod.
- The company said it will start running tests on the track in April.

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**Rail transport**

Labor rebuffs Elon Musk’s Hyperloop to solve Australian woes

Anthony Albanese says high-speed rail most ‘comprehensive’ option for eastern seaboard

**ARTICLE**

The future of hyperloop: cutting through the hype

Gavin Bailey, Technical and Business Development Manager and Roseline Walker, Technical Consultant from Transport Research Laboratory

Hamburger Hafen will mit Hyperloop den Containertransport beschleunigen

Business Insider Deutschland

Business Insider Deutschland

05.12.2018, 15:00

Ein Projekt verbindet künftig den Hamburger Hafen mit dem Silicon Valley: Das US-Start-up Hyperloop will zusammen mit dem
Am Ende bezahlt der Kunde die Rechnung!

How Total Cost of Ownership Scales with Distance

Cost per seat per km

Distance (km)

Network Air Carrier
Low Cost Air Carrier
Hyperloop
HSR

Source: Airline data based on 25 years of operational statistics from IATA data, HSR Data based on OECD, Hyperloop based on Telegraph
“Lösung 3” : Der autonome Verkehrsstau?

Unless we share them, self-driving vehicles will just make traffic worse
A carbon-free, autonomous car is still a car; it still takes up space.
By David Roberts | @Gdros | david@axu.com | Updated Jul 26, 2017, 10:00am EDT

How More Self-Driving Cars Could Make Traffic Worse And Cost Us More Money
That Utopian ride sharing future? Australia says ‘yeah, nah’.
By Danielle Muñoz | @DanielleMuno | Jun 4, 2017, 10:37 AM | 31,846

Traffic Won't Go Away With Autonomous Cars
There's a lot that's more efficient about autonomous driving and that's exactly why road congestion could shoot up
Eran Shli | 17:36 | 29.10.17

We all feel it—traffic is getting worse and worse. Congestion times have slowly stretched beyond commute hours becoming an all-day phenomenon. Our commute gets longer and longer with every passing year.

How Self-Driving Cars Could Actually Make Traffic Worse
Ride-Hailing Congestion Dims Promise of Robot Taxis
By Jeremy Hsu | February 28, 2018 11:51 pm
<table>
<thead>
<tr>
<th></th>
<th>SPEED</th>
<th>HEADWAY</th>
<th>THROUGHPUT</th>
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<tr>
<td></td>
<td>KMH</td>
<td>Meters</td>
<td>Seconds</td>
</tr>
<tr>
<td>2-second rule</td>
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<td>1.24</td>
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<td><strong>20</strong></td>
<td><strong>0.48</strong></td>
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<tr>
<td>Fully Autonomous Freeway</td>
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<td>10</td>
<td>0.30</td>
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Geschwindigkeit vs. Kapazität

Throughput (Veh/hr)

<table>
<thead>
<tr>
<th>Time</th>
<th>Speed (MPH)</th>
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<tbody>
<tr>
<td>4:00 AM</td>
<td>67.9</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>35.2</td>
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<tr>
<td>5:00 PM</td>
<td>65.1</td>
</tr>
<tr>
<td>5:35 PM</td>
<td>46.9</td>
</tr>
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</table>

Speed (MPH)

4,000  4,800  5,600  6,400  7,200
Aber was sind die wirklichen Hebel?
Integration of different modes of transport

Utilization of infrastructure (Road and Rail)

On-Demand Operation

Safety/Security relevant Computing

V2V and V2I communication

Cybersecurity

Data Management

Liability and Insurance Models

Efficient Computing

Service and Business Models

Persistent Infrastructure

Creating (and maintaining) maps for self-driving cars

Social interaction between driver and pedestrians
... Das gute alte Fahrrad als Alternative