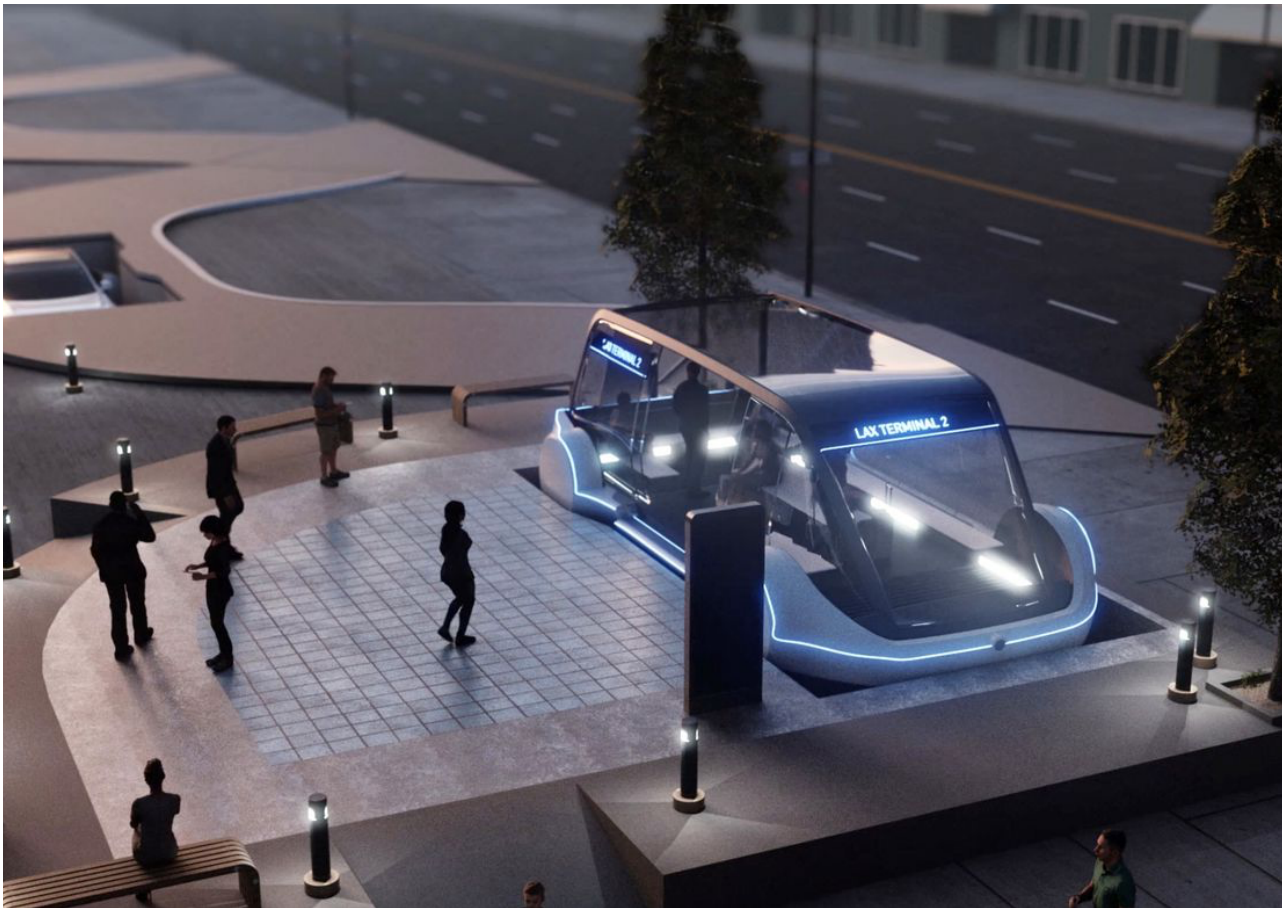

Smart City

TRANSPORT SYSTEMS

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Introduction

Walking and running the two natural modes of human locomotion, have accounted for most of the personal movements in all pre-industrial societies. Energy cost, speed and maximum distance to be travelled have always depended on individual fitness.

But that's all been changed ever since industrialisation and we have even taken a further leap as humans through technological advancements over the centuries, decades.

Smart cities are here and they use data and technology to create efficiencies, create economic development and enhance the quality of life.



Where are we now with smart transport systems?

- ❖ Bike sharing-made available to individuals for a very short-term basis. Smartphone mapping Apps show nearby docking stations /how many bikes are around you.(China, Australia, France, Finland...)
- ❖ Carpooling/ Car sharing-Apps link drivers and passengers in real time.(Uber, DiDi, Lyft, BlaBlaCar, Ridejoy, Taxify...)
- ❖ Geospatial-enabled system-provide periodic traffic forecast, journey planning based on realtime data.
- ❖ Integrated transit hubs- seamlessly connect multiple modes of transportation like bus and metro.
- ❖ Smart Parking- IoT put to use, these use sensors, cameras to provide efficient management of on and off street parking.
- ❖ Smart Traffic Systems- in Australia, traffic lights are prioritised based on the bus schedules so that traffic flows more freely during rush hours.
- ❖ Electric Vehicles- support electric and renewable energy operated cars in cities with plug in ready and also public EVs (Tesla, Polestar, BYD...)
- ❖ Smart Toll, Smart Train, Straddling bus and drones.

❖ AeroSpace/Multi-planetary transport- SpaceX, Boeing, Airbus, Virgin Galactic, Blue Origin.

What are the challenges with smart transport systems?

- ❖ Costly technology- new tech is expensive, SS2 development estimated to be \$400 million and commercial operation of \$200.000 (2011). BFR-Project cost of around \$5-10 billion, launch of \$7 million.
- ❖ Energy shortages-in the developing world and 3rd world countries.
- ❖ Carpooling and bikes generally take time, thus slow speed .
- ❖ Lack of knowledge from the public- users need to be educated on the new tech
- ❖ Adoption rate is slow
- ❖ Privacy concerns-through data collection and possibilities of it being shared with Third Parties
- ❖ Techno is still being perfected
- ❖ Not so much innovation in the maritime transport industry

Where are the possible solutions to make smart transport better.

- ❖ Expand usage of EVs and smart vehicles
- ❖ Develop pedestrian mobility Apps
- ❖ Optimisation
- ❖ Integration
- ❖ Improve Safety
- ❖ Enhance Mobility
- ❖ Address Climate change
- ❖ Enhance Ladder of Opportunity