Domain: Transportation- Environment

The Solution for the Urban Parking Chaos

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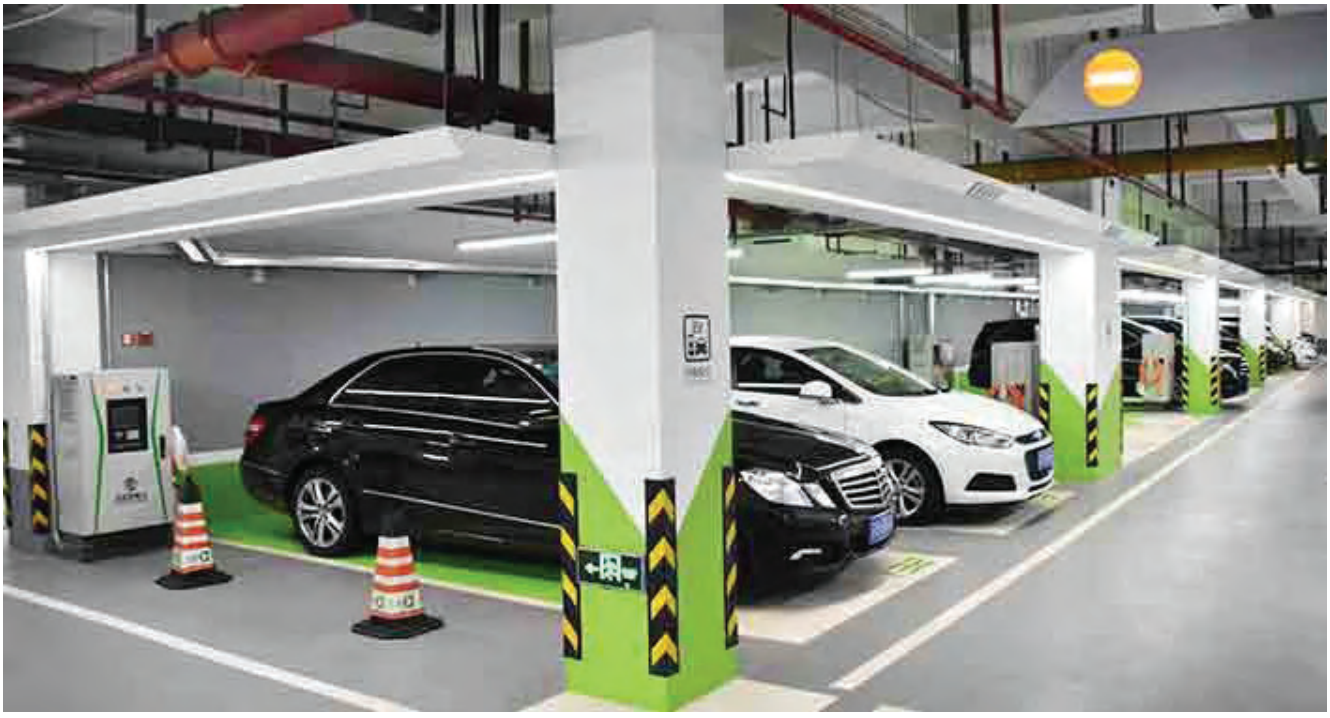
Globally, A commuter on an average spends approximately 20 minutes in searching for a parking space. While in Delhi, an average commuter spends more than 80 hours (i.e. 13 mins/day) or 240 kms every year to find a parking space. As a result, it costs to time, additional fuel consumption, congestion, rash driving and most importantly the air pollution leading to health issues, conflicting with Sustainable Development Goals (SDGs)- 3, 7, 9, 10, 11, 12 and 13 directly & indirectly.

Vehicular traffic contributes to 30% - 40% of air pollution in Urban areas, which are hazard to ecology as well as causing health issues like premature deaths, cancer and respiratory diseases. On the other hand, Cars remains parked 80% to 90% of their useful life, making enormous space demand on useable land, streets, public spaces, pedestrian- and- cycle pathways. With the increasing number of vehicles, parking requires huge land parcels. With this challenge of meeting the supply to ever increasing demand, below are few questions that need be answered and the solution is provided aligning these questions:

- Do cities have sufficient land & funds to meet the ever-increasing parking infrastructure demand?
- Does providing parking infrastructure by consuming huge land parcels is the ultimate solution? How to mitigate this ever-increasing demand aligning with the National Urban Transport Policy (NUTP)?



- Will the parked vehicles on streets will remain going to cause congestion, resulting in traffic delays, noise and air pollution?

The Automotive Industry:

In present, India has a car ownership of 22 cars per thousand persons. The International Energy Agency (IEA) finding suggest that the passenger car ownership in India will grow by 775% over the next two decades with 175 cars per thousand people by 2040. This suggests that- there will going to be enormous demand of parking and issues related to it.

Inequity among the Cities (More land for parking than for Housing for Poor):

In Delhi, about 4.5 million slum population occupies 3% of the city area. But the parking demand generated by the cars makes the demand close to 10% of the city's urbanised area, which usually gets supplied by the building norms, parking lots and by commercials (Centre for Environmental Science, CSE). The city provides more land for car parks than housing for poor.

As per Housing norms set by MoHUA (Ministry of Housing and Urban Affairs), the space allocated for LIG dwelling unit is 25 sq.m to 40 sq.m. While a car parking slot requires a space of 23 sq.m to 28 sq.m. Having these statistics, it can be inferred that at the policy level itself, the spaces are not well formalised as well as the regulations. The inequality in land consumption norms is recognised as a big barrier by the 'Government's Housing for All Mission'. The same space which is getting used for car parking could be used for some other purposes like houses for slums, public parks, plazas, pedestrian pathways, cycle tracks, etc.

High Investments on MLCPs (Multi-level Car Parking) are turning to Ghost Infrastructure Delhi needs at least 382 hectares every year, that is 2.58 times the size of IIT Delhi campus- just to park its newly registered cars, even though the multilevel car parks remain underutilized, as per a report by EPCA (Environmental pollution preservation and control Authority). MLCPs require huge investments. These are usually constructed and operated through PPP models. With lack of accessibility, proximity and technology advancement, majority of the MLCPs are converting to ghost infrastructure, eventually leading to loss making business for partners. And not impacting much on public users. While, very few of the MLCPs in city core are suitable to the location and are helpful in demand management.

It has been observed that in London and Delhi user finds it difficult to use MLCPs. In London, numerous MLCPs has been converted to community spaces offering free spaces for events, education, training and for other purposes [Institute for Transportation and Development Policy (ITDP)].

The Consequences:

The number of parking demand will continue to grow with motorization. The existing parking strategies have failed to reduce parking pressure, pollution and congestion. Search for Parking leads to Fuel guzzling, air pollution and aggravating climate impacts.

As parking pressure builds up in cities

with scarce land area, neighbourhood brawls, road rage happens, and even heinous killings become commonplace. This is the most ugly and scary social ramification of the parking crisis.

Delhi police control room receives around 250 calls every day about parking feuds; And in last one year at least one person has been killed every month because of parking related disputes (Source: Delhi Police & India Today).

Conclusion:

Building multi-level facilities for parking which are turning up as ghost infrastructure in cities will not alone solve the parking issues; it will only consume more space and investments. People tend to park their vehicles in the nearest proximity instead of wasting their time & fuel in search of parking lots.

The sharing of parking space allows users to park their car at parking spaces that are so far not accessible to them. Creating such technology-based model (incorporating business) by aggregating all the parking lots to a platform where all citizens have real-time information will help in creating a better living ecosystem. While, the city parking management module helps in managing the dynamic pricing along with parking administration. The same model can be replicated through out globe for creating sustainable and resilient cities.

It can be inferred that the increasing the supply isn't an ultimate solution, there has to be alternative solutions for parking management and an overall understanding on parking to tackle issues.

The Solution:

The concept allows sharing of parking space by one or more users, to utilize the existing parking space effectively and efficiently without pressuring the urban land to develop more parking infrastructure. In return, the fuel, time and money are saved by real-time information provided by the technology throughout the city. Eventually curbing down the congestion of streets, promoting smooth traffic flow, noise and air pollution reduction. The idea is to create a 'parking space sharing ecosystem' through agglomeration of technology (i.e. IoT) and gadgets available in the market to create a parking management tool.