Shared micromobility: Have they gone mad?

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Abstract:
The development of services for "sharing" electric bicycles and scooters in urban areas are the sign of a revolution in mobility. Linked to technological trends and deep changes in society, this revolution will soon affect cities as much as the coming of mobile telephones affected our lives.

Hundreds of millions have been invested in companies proposing shared forms of "micromobility" (electric scooters and bicycles). Why so much excitement? Is this a new bubble? Didn't we learn anything from the explosion and then implosion of Chinese bicycle services? We sure didn't! Get ready for the next major change in our cities.[1]

During the past hundred years, the development of private automobiles with internal combustion engines devouring fossil fuels laid the guideline for mobility on land. Everywhere in the world, infrastructures were built to welcome these vehicles: gigantic limited access highways were built to connect cities. Streets were widened for traffic. Vast zones were allotted for urban car parks. A complete supply chain formed: service stations, refineries, oil tankers, and so forth. Hundreds of billions of euros in loans enabled each and everyone to purchase a motor vehicle. The car soon became a status symbol, attesting to the person's lifestyle.

This era of private automobiles with internal combustion engines running on fossil fuels is coming to an end for several reasons.

The first is a cultural change. Our parents wanted to own their own goods, car, home, etc. in order to be free and independent. The new generations think differently. They still want to be free, but no longer need to own something to be able to enjoy their freedom. "Sharing" platforms offer all the advantages of ownership without the inconvenience of having to look after and update goods. For music, Spotify replaces CDs; iTunes' on-demand movies replace DVDs; AirBnb and Expedia make it pointless to have a country home. And cars? Why take your own car to the seaside when you can go by train and rent locally a vehicle that suits your needs? Why deal with city traffic and parking when you can take the subway, rent an electric scooter or hail a taxi? A shared infrastructure is more flexible, better adapted, faster and cheaper, especially for transportation. As vehicles are more frequently shared, the cost per trip falls. Such vehicles bring flexibility, and optimize stakeholders' resources and budgets.

[1] This article has been translated from French by Noal Mellott (Omaha Beach, France).

A second factor is the rise of electric mobility, a technology making advances. Batteries are improving year after year, storing more energy in less space. Electric motors are smaller and more powerful. E-vehicles are carbon-free provided that their source of energy is carbon-free — this is not yet the case save in a few countries such as Iceland, Costa Rica and France (but other countries will soon join this group). Nevertheless, certain problems must still be solved. For example, reloading the batteries requires installations that can be expensive, but advances are also being made: fast reloading stations, exchangeable batteries, etc. The upsurge of (personal or shared) e-bicycles, e-scooters, e-cars, is switching the mobility sector to electricity. Electricity is becoming the main source of energy in cities.

A third factor is the coming Internet of Things (IoT). Ever more chips, smaller and more powerful, are being embedded in devices, including cars, bicycles and motorcycles. The automobile industry now does more than mechanically build vehicles; it is also a software and electronics business. Many vehicles will soon be autonomous: starting with the diagnosis of defects, then maintenance and, some day, driving. This technological convergence between the automobile industry, electronics, and ICT (information and communications technology) has laid the conditions for this upsurge in shared vehicles, like Cityscoot's e-scooters or Uber's cars. This was first observed in China, where millions of shared bicycles, connected thanks to the IoT, are used for millions of trips per day. They probably represent the first large-scale deployment of the IoT to consumers.

A fourth factor is social and political. Given the threat of global warming against our way of life, cities are trying to lower emissions of CO_2 and pollution. Municipalities are building "green" lanes (for bicycles), parking spaces for "green" vehicles (e-bicycles and e-scooters). They are trying to curb the use of cars: more taxes on vehicles, car-free zones or fiscal incentives for less polluting alternatives. In this context, a shift is gradually being made toward green vehicles, but much is still to be done to offer a safe environment for light means of mobility.

Four trends are coming together to create a massive change in urban mobility:

- shared property;
- electric vehicles;
- the convergence between ICT, electronics and the automobile industry; and
- investments in infrastructures for making cities carbon-free.

This urban revolution hinges on shared vehicles, which are practical and environmentally friendly. This massive trend will bring as many changes to cities as mobile telephones brought to our everyday lives. Vélib and Uber are Blackberry. The electric battery is the touch screen. Shared e-bikes and e-scooters are the first iPhones. Having understood this, most investors are heading in this direction.

The current question is: which firms will have an impact and conquer this market?

First of all, the AUTOMOBILE INDUSTRY, which knows how to build quality equipment with embedded software applications. Some of these firms are already sharing infrastructures (BMW and Drive Now, Bosch and Coup, Ford and Spin). Keeping up with the acceleration in this market is a relentless challenge. New activities in urban areas are developing too fast for these firms to keep up with them. For example, loading stations for eclectic vehicles is a new business in urban areas. Some automakers have entered the race. Some have started setting up distinct organizations to combine their experience with the rapidity of young companies with direct contacts with consumers.

Secondly, ELECTRONICS FIRMS. Why are firms like Foxconn or Apple not moving into this field? These experts in electronics know how to embed software in devices. Their expertise can serve as the basis for partnerships. Till present, these players have not launched services of this sort, but this might change.

Thirdly, RIDE-SHARING AND CARPOOLING FIRMS (Uber, Grab, Taxify, etc.). They have a sizeable user base and are used to operating in urban areas. Though well placed for staking out a position in the shared mobility market, the essential characteristic of these firms is that they have experience in managing relations between consumers and drivers on virtual markets (an e-market business model) instead of between consumers and physical assets (a retail business model). The customer base is nearly the same, but the business is completely different… a taunting challenge for them.

Finally, the PURE PLAYERS who offer these new services (Bird, Dott, Lime, Mobike, etc.). They are specialized and are quick learners. They have a definite, clear objective and act fast to reach it. Although their financial resources and expertise might not be on par with the previously mentioned players, many engineers and experts are moving from the first three types of firms to join this group. These pure players might, therefore, take off.

So, what do you think? Are we mad if we invest so much in sharing electric vehicles? We sure aren't! A revolution of mobility is dawning with new players (like Dott) springing up everywhere in Europe and elsewhere.