

# Jefferies Quick Takes on Big Ideas: *Reinventing the Wheel – Mobility’s Quiet Revolution*

## Small and Light Vehicles (SLVs) Poised to Drive Mobility’s Next Chapter

Americans alone take more than *one billion trips per day* – nearly half of which are under three miles long. Globally, these numbers are much higher. This may be why some of the **fastest growing start ups ever** have created billions in enterprise value in the last few years, by reshaping how we get from point A to point B. While many headlines focus on autonomous driving, it is increasingly likely that a huge part of the coming transportation **revolution will come from knitting together innovations that are centuries old** – bikes and scooters with cars, vans, subways and ferries.

### Is the Future of Mobility...Analog?

Two themes are at the heart of the next era in mobility – i) The large and growing SLV market, and ii) The knitting together of various modes of transport to more efficiently deliver people from one place to another.

- Nearly 50% of journeys in the U.S. were **under 3 miles** in 2017
- In New York City, 56% of all trips are 3 miles or less, and **10% are less than half a mile**
- The average American makes **4 trips per day**
- Dockless bike sharing **added over 44,000 bikes** in the last half of 2017 alone

Uber massively disrupted mobility with the broad based adoption of mass market ride sharing around 2009. But before that, **much of the innovation in transportation was the mode of transportation itself** – the creation of the bicycle, automobile, scooter, the Segway. But the next chapter is as likely to be grounded in knitting these more traditional forms of motion together as upending or creating a new form of vehicle altogether.

**To understand why small and light vehicles (SLVs) are central to the future of transportation**, it’s important to understand their diverse forms, how people use them and what opportunities they offer.



**Docked bicycles:** Think CitiBike in New York or SantanderCycles in London. Docked bicycle systems are public bike sharing systems with manual (non-electric) bikes in fixed locations throughout a city.



**Dockless bicycles:** Think Lime or Jump. Increasingly seen in cities and on college campuses across the U.S. and Europe. All locking and location data resides on the bike, not the docking station.



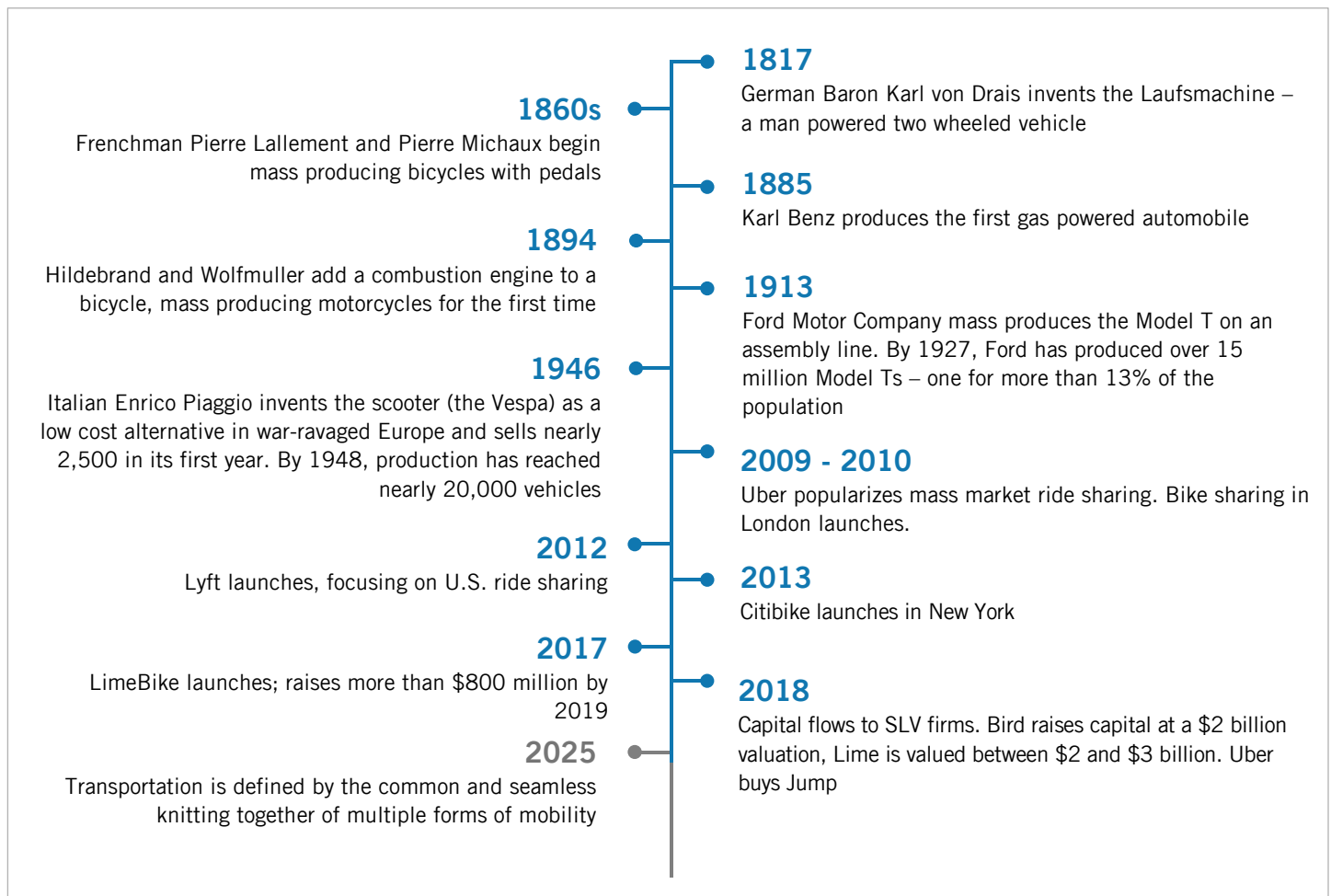
**E-bikes:** Bikes with an extra motor, providing extra energy and efficiency to manual pedaling.

**Scooters:** Not your kid’s Razor. Outfitted with a small engine, typically maxes out at ~15 mph.

Chart 1: Snapshot of SLV Usage<sup>1</sup>

	Type of SLV system	Approximate number of users	Total Rides	Average Daily Rides	Total Raised	Last Financing Amount
<b>CitiBike, Ford GoBike, Santander Bicycles</b>	Docked bicycles	~140,000 subscribers	Over 100 million	Nearly 50,000	Over \$100 million	N/A
<b>Lime</b>	Dockless bikes and e-scooters	150,000 users	20 million	Over 15,000	\$867 million	\$450 million
<b>Bird</b>	Dockless e-scooters	2 million	Over 10 million	Over 25,000	\$718 million	\$450 million
<b>Jump</b>	Dockless bikes	38,000	326,000	2,250	\$22.8 million	\$250 million (acquisition)

## A History of Transport, Abbreviated



Mass adoption is always part facilitating technology (GPS, wireless connectivity, smart phones) and part culture (it is acceptable to be seen riding a scooter with a helmet). Adoption rates for shared SLV programs have accelerated since Citi Bike first rolled out in New York City in 2011. It took Citi Bike – in a city of more than 8 million people, and a 23 million person metro area – 5 years to achieve 50 million rides, after 8.1 million in its first full year of operation (2014). Lime passed the 11 million ride mark 14 months after launch.

## What Do I Need to Know

This sounds like a huge topic – what are the 5 things to know about SLVs in 2019?

- 1. Data First** – Getting in on the bike, scooter, and SLV game allows transportation firms to more completely and robustly map the transportation patterns of customers. What routes do they take, at what time, and in what conditions? Do they pit stop for a matcha latte en route to their final destination? Given that the future of much commerce is grounded in a firm's ability to harness the data of its customers, it's possible these companies will remain big targets for other transport firms looking to fill out their picture end to end.
- 2. Another Chapter in the Battle Between Hardware and Software** – Look for an ongoing discussion on making stronger, lighter, faster vehicles...and how much that complements software that allows bikes to be found and used anywhere, even where you least expect it.
- 3. Cannibalization...or Healthy Competition?** Given the future of mobility's focus on last mile solutions – we are strongly focused on how these solutions can complement rather than cannibalize pre-existing offerings. Multi-modality, or the use of different modes of transportation to complete a journey, will be the holistic servicing of a customer's transportation needs.
- 4. Safety First.** There is a considerable educational component to the long term success of SLVs – companies need to ensure customers don't end up in headlines because of accidents, collisions or other issues that threaten the firm's reputation. People want to get from A to B efficiently and rapidly – but most importantly, they want to get there in one piece!
- 5. Navigating Diverse Regulatory Regimes Will Be of Critical Importance Going Forward.** Just like ride sharing had to navigate multiple state and local regulatory regimes – and in some cases educate and fight municipal battles to fully roll out products – SLV firms will have to build local support and consensus as they expand into new markets.

## What Lies Ahead?

**The future of mobility is one of the most exciting and rapidly changing corners of technology.** While many of the headlines that have garnered the most attention have focused on autonomous vehicles, drones or other Jetson-like solutions, we remain as enthusiastic about learning how innovations of years past can be repurposed or knitted together more seamlessly to help us commute to work, school or for leisure more painlessly. Investments just in the first month of 2019 indicate this corner will remain in investors' views for months, if not years, to come.

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<sup>i</sup> PitchBook, Axios, TechCrunch, Digital Trends, The Verge, Forbes, CitibikeNYC.com, and Expanded Ramblings