



Beyond the Hype - Making Money in New Mobility

Consumer mobility is undergoing a seismic shift along three key dimensions: sharing (now), electrification (now) and autonomy (imminently), all underpinned by advances in connectivity.

In this environment of dramatic and accelerating change, new mobility entrants are seeking to disrupt decades-old car ownership patterns in developed nations and leapfrog ownership altogether in developing nations. While safety, congestion management and increased accessibility to the elderly and infirm are often cited as the reasons for their emergence, make no mistake — the commercial prize is huge. In the UK alone, households spent almost £100 billion on surface transportation in 2015 — the vast majority of which is addressable by these players. On a global scale, this translates to a multitrillion-dollar opportunity.

The landscape changes almost weekly, and making sense of where true opportunities lie, and how to position for them, requires careful consideration. In this *Executive Insights* we identify the key provider categories emerging in this new mobility paradigm (see Figure 1) and highlight the critical success factors as they seek to create commercially viable operations. The points are also relevant to incumbent transportation providers looking to move into this space as well as to urban planners looking to offer mobility as a service orchestration models.

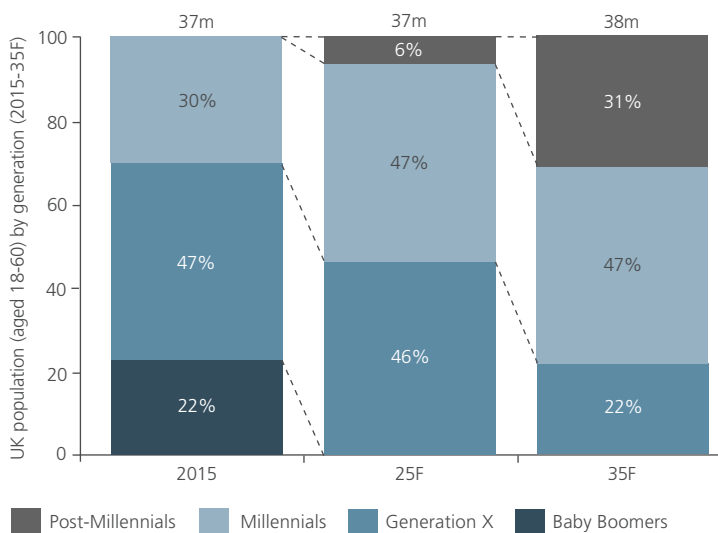
Figure 1

Key provider categories emerging in the new mobility paradigm

Key provider categories	Examples
Traditional OEMs deploying car share / ride hail	VW (Moia) Ford Daimler (Car2go) BMW (drive / reachnow) GM (Maven) Volvo (Sunfleet)
Challenger OEMs with car-share ambitions	Tesla Zoox
Ride-hail / share providers	Uber, Lyft, Gett, Didi, Grab, Ola Careem, EasyTaxi, Google (Waymo), Addison Lee, Cabonline, mytaxi
Car rental providers	Avis (Zipcar), Hertz (Flexicar), Enterprise (CarClub)
P2P platforms	BlaBlaCar, Turo, Getaround, Sixt (Fastlane)
Demand-responsive transit providers	Citymapper, Beeline, Chariot
Tier 1 Automotive suppliers	Bosch, Delphi, Continental
Consumer facing brands	AAA, RAC, Car Dealers

Figure 2

Age cohorts as a proportion of the population



Source: ONS; McCrindle Research; US Center for Generational Kinetics; L.E.K. analysis

The consumer perspective – what do they really want?

There is considerable and compelling research that shows millennials and Gen Z cohorts are turning their backs on vehicle ownership¹. With these groups accounting for more than 80% of the mobility-consuming population over the next two decades, this is a key consideration for mobility providers (see Figure 2).

In our experience, consumers place differing weights on convenience and cost as they think about their journeys (see Figure 3). These vary considerably depending on geography, age, gender, time of day and even the purpose of the journey. It is also true that convenience itself means many things to consumers — it could be the time to pickup, the time avoided hunting for a parking spot, the ability to work while in motion, a combination of these or something completely different such as the ability to load a stroller into a vehicle.

Providers need to understand their target customer segments' mobility needs — whether for mass-market propositions or niche use cases such as business travelers. This includes how they value cost vs. convenience, the nature of their journeys (shopping / leisure / commute / business), and where their journeys originate and terminate.

Key success factors for providers

It is within this framework that new mobility providers have to seek sustainable and differentiated opportunities in either one or both of cost and convenience. At the very core, we believe there are six key areas on which to focus for differentiation:

¹ James Carter, Vision Mobility

1. Deploy at a high density for the relevant use case
2. Optimize your fixed supply costs
3. Stimulate demand by pulling all the relevant levers
4. Drive high utilization of assets
5. Monetize rides and create rich passenger experiences
6. Choose wisely where to deploy

Excellent user experience and service are common threads which have become hygiene factors to attract and retain customers.

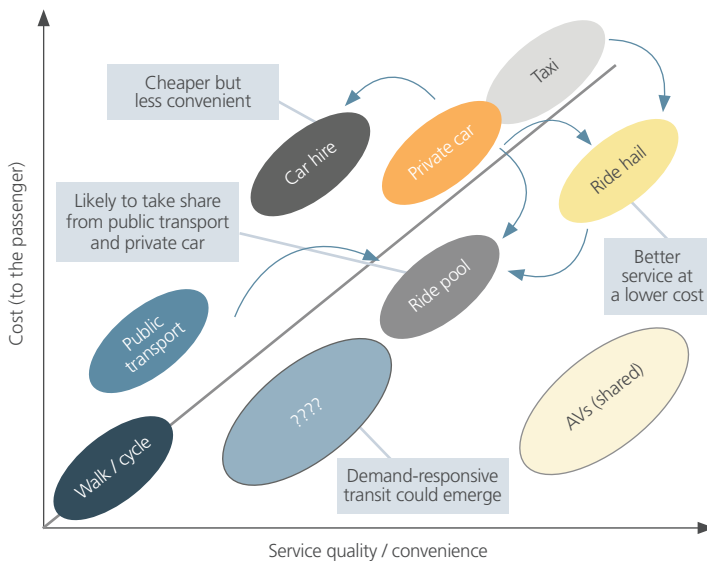
1. Deploy at a high density for the relevant use case

To build the network effect of sharing, sufficient supply density must be in place to allow for a true on-demand service. Uber and Didi, for example, have invested billions of dollars in initial driver subsidies to have supply available when the demand stimulation efforts kick in.

In our own recent trials in London (where we normalized for the cost dimension by paying for rides), we found that millennials were prioritizing by a factor of 4 to 1 in favor of the instant gratification that the cheaper UberX provides (less than two-minute wait) vs. the more upmarket UberExec (less than six-minute wait). This is a function of supply density.

Figure 3

Price and service attributes of different transport modes



Source: L.E.K. analysis

Unless the product is differentiated, providers serving niche customer segments may not be able to compete with mass-market providers who can over-index on the convenience dimension.

As vehicles transition into self-driving fleets, a common refrain is that it will be expensive for anyone other than original equipment

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manufacturers to deploy high-density fleets. This is fallacious thinking — we expect there to be numerous finance options, from leasing to new mobility bonds and securitization products, which will allow for the deployment of vehicles without requiring an extensive balance sheet. Some OEMs themselves are likely to be keen on off-balance-sheet options.

In this autonomous future, car sharing and ride hailing are expected to converge and amplify the convenience factors. This has the potential for car-share providers to serve a considerably larger market. However, there are elements of first-mover advantage in this model — deploying early and at scale reduces the attractiveness of the business case for followers (e.g., Didi and Uber in China).

2. Optimize your fixed supply costs

Consumers will pay a premium for convenience, but the base supply costs need to be attractive for a proposition to succeed. This is as much an exercise in defining the provider’s addressable market and the alternatives available to consumers as it is about the provider’s own proposition.

For example, Uber swiftly moved beyond the realm of executive cars when it realized the true prize was in mass mobility rather than in disrupting taxis (see Figure 4 for Greater London illustration). In order to address this market, it needed to create supply propositions that were fundamentally much cheaper in delivered costs and still viable for drivers. This clarity makes its

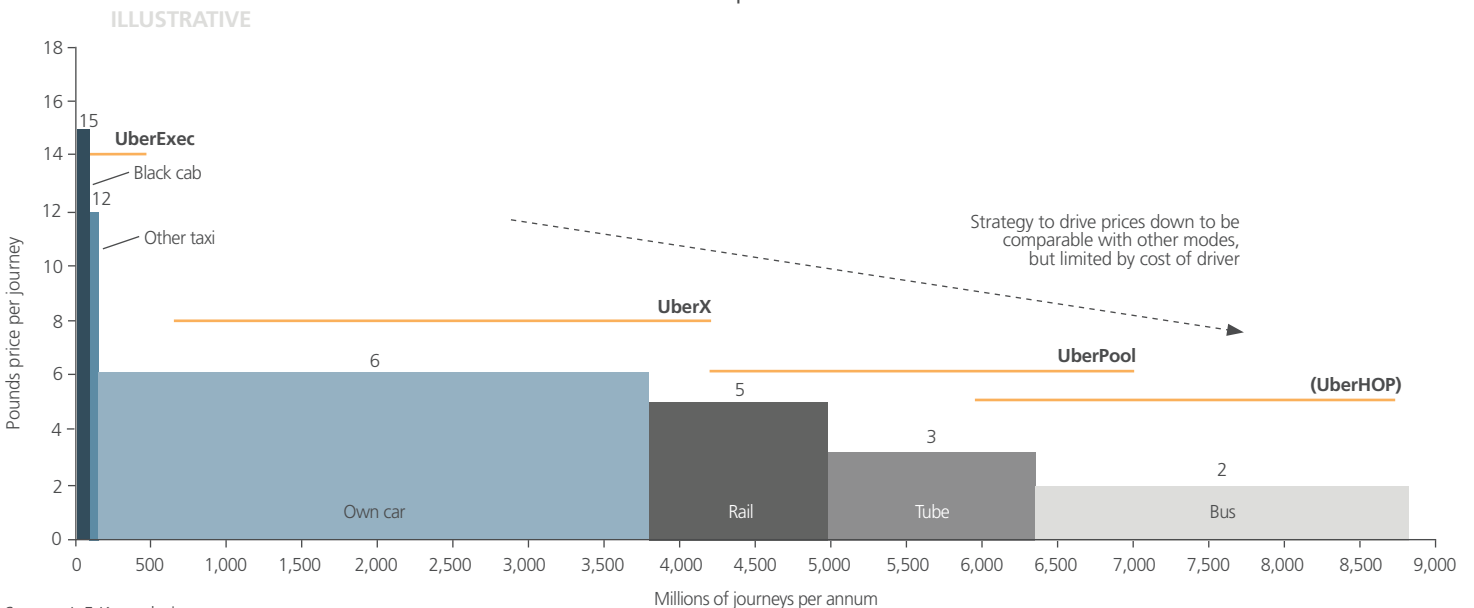
addressable market considerably larger; for example, nearly 9 billion annual journeys in London vs. about 100 million that are taxi and private-hire vehicle journeys.

Clarity from customer insight in their focus segments should help providers in creating internal targets to be effective at scale in stimulating demand. Even in the example of Uber, while it is clearly benefiting from intermodal switchers, there is still a cost (and in some cases a speed disadvantage) to public transport. Furthermore, as Figure 5 illustrates, even in a best case “perpetual utilization” mode, Uber’s propositions are limited by the cost of the driver. This is where autonomous vehicles are a game-changer and transform the industry’s cost curve. By taking the driver out of the equation, providers can become significantly cost-advantaged. The main question here is whether regulators will create alternative “taxation” regimes, including road charging, to mitigate potential congestion concerns.

In an autonomous world, the ability to deploy “robot-taxis” is likely to be a significant differentiator between firms. This is the strategy that Waymo (Google) appears to be pursuing by building a fully self-sufficient “artificial intelligence driver.” This is also the opportunity to create a new network in place of (by then) established ride-hail providers.

A driverless world will bring other aspects of fixed running costs further into the limelight — optimal fuel selection (including electric) and fleet management will become more relevant to success.

Figure 4
Greater London Transportation Economics



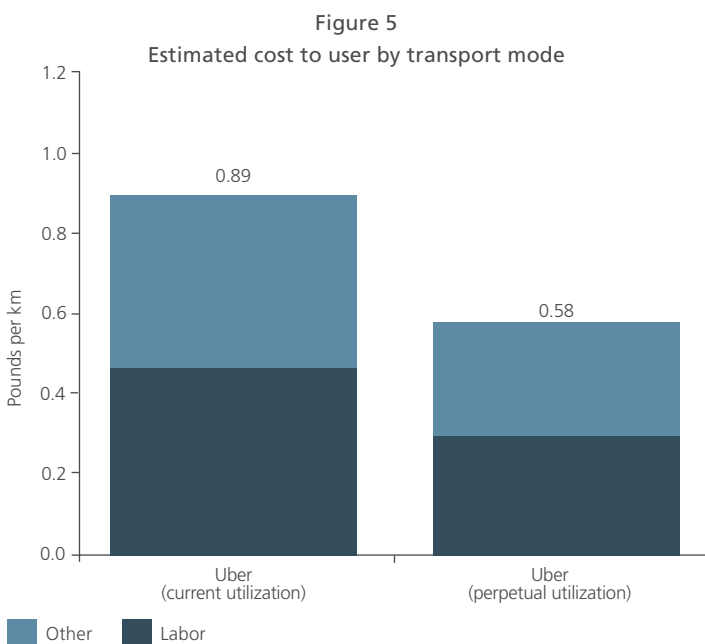
3. Stimulate demand by pulling all the relevant levers

Optimizing the network effect relies on accelerating the consumer adoption. Using customer acquisition incentives and emotional selling early to attract adopters² should be a central pillar of any strategy. Financial incentives and promotional activity were used widely by Didi and Uber in every city they targeted and then phased out as markets started hitting the early majority of consumers. The authors themselves received over £100 in free rides because of referrals to friends and colleagues from Uber.

Developing a good understanding of current journey types and pain points is central to developing consumer-centric propositions and capturing demand. For example, Enterprise Car Club teamed up with Virgin Trains in the UK to provide an integrated mobility solution to train passengers by providing car share services at stations along the train route. An alternative approach is to stimulate new journeys altogether, for example, through targeting the elderly. However, this is not without its challenges; our study of consumer demand for ride-share providers illustrates the lack of awareness of new mobility services among older customers (see Figure 6). Similarly, women also under-index in their usage of ride-hail services, possibly due to concerns about security.

4. Drive high utilization of assets

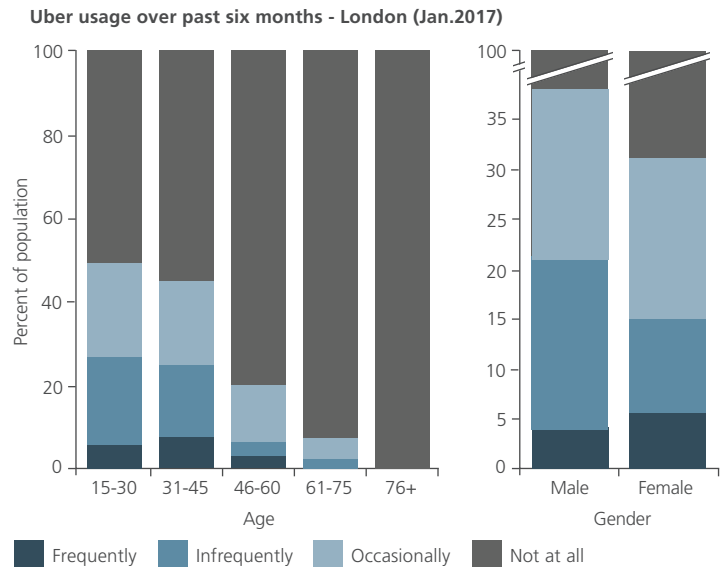
Creating high asset utilization and amortization of fixed costs over a large number of journeys is critical to the success of any proposition. This relies on analytical sophistication and network management capabilities to bring demand and supply together in the right location at the right time. The ability to create actionable insight from quality data is key, and new entrants have to navigate this as they scale up.



Source: L.E.K. analysis

² E.M. Rogers, Diffusion of Innovations (1962)

Figure 6
Usage of ride-share propositions by age cohort



Source: L.E.K. analysis

Third-party data sources (e.g., mobile phone data) can serve as early proxies to minimize the trough in the J-curve as providers scale up.

Solving for peak-hour and peak-location use cases may be the easy first step, but providers also need to solve for all the “dead time” between journeys, between daily peaks, and across weekends and holiday periods. In the gig economy, drivers simply stop working in off-peak hours, but this lever will be lost in an autonomous world, where assets are almost always available. Stimulating journeys for other purposes in shoulder and off-peak times (e.g., as weekend rentals or for the elderly) and reuse of the assets for other purposes (e.g., as logistics or parcel delivery) should be a central part of the strategy for new providers.

5. Monetize rides and create rich passenger experiences

Pricing and customer lifetime monetization are key for value capture in single-mode MaaS propositions. To date, these have been largely pay-per-use, but other modes, including subscription, loyalty programs and differential pricing based on service quality levels, are all levers that should be explored. Understanding local and temporal elasticity of demand (made notorious by “surge” pricing) should also be explored to optimize how specific customer segments are served.

Beyond pricing for the core mobility service itself, and as costs (and in competitive markets, price) per mile decrease dramatically in a driverless world, value-added services are likely to be necessary to create ancillary revenue streams. Indeed, startups like Voyage are hinting that mobility itself may be free. Consumers who are now reclaiming their time are captive audiences, and providers should monetize these moments or use them to enhance customer experience and retention.

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In much the same way Google monetized the platform effects of its Android mobile OS, providers should consider the ecosystem of services they can deploy in a “mobility as a platform” environment. These may range from connectivity-derived income streams (e.g., media and entertainment, business applications), advertising (location-based and personalized) or even retail offers. Providers like Vugo and CarGo are already dipping their toes into this space, as is Skype by integrating into Volvo’s systems. There is likely to be much more innovation, just as there was with app development that changed the way we use the mobile phone. Particularly in an autonomous world, and to a lesser degree today, the passenger (not the driver) experience should dictate how providers design their interior vehicle architectures and their service portfolios.

6. Choose wisely where to deploy

It is natural that cities have become the key battleground in the new mobility space. With increasing urbanization and high density relative to rural configurations it is easier to deploy solutions. But

not all cities, or even regions within cities, are equal. They differ considerably in the fundamental choice and costs of alternative mobility options, consumer spending ability, geography, cultural and regulatory factors, and, in the future, the technical complexity of deploying computer vision and AI reliably. Equally, deploying new mobility concepts and technology also provide an opportunity for incumbent public transportation providers to improve their propositions. While some experimentation is required, upfront analytical rigor could prevent some expensive missteps.

Fortunes to be made...

New mobility is a brave and exciting opportunity with a significant financial prize and a strategic imperative for market participants to get it right. The nascent technology, regulatory environment and consumer demand present many challenges for innovators and investors, but with the right focus, they can navigate the transition effectively and maximize their likelihood of success.

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