Two wheels good?

CoMoUK e-scooter position paper, Nov 2018.

There are various forms of e-scooter but in this case we are talking about 'kick-scooters'; those on which you stand rather than moped like sitting scooters. E-scooters, to fit with the latest trend have been adapted with batteries to make them electrified. Fitted with batteries, the e-scooters allow users to 'twist and go' (or press a button) and glide along at anywhere between 9 mph and 15 mph. This is a similar speed to a conventional bike and is slightly slower than an electric bike. Users stand up-right with both hands on the handlebars to control speed, direction and braking. Like other free-floating modes, e-scooters can be located, booked and unlocked through an app on a smart phone.

Technology, Mechanics and Battery.

The e-scooters have front and rear inflatable tyres on 8" wheels. E-scooters measure their range either in time or distance, but the publicly available 'share' scheme e-scooters generally have a range of up to 20 miles. Other private e-scooters can have a range of up to three hours. Battery technology brings the need to recharge the devices but, unlike e-Bikes, there is no docking station to plug-in to. This has created the market for 'Juicers' (a term used by the operator Lime), these are people who find and retrieve e-scooters to recharge via their own private power supply. This is often done overnight with e-scooters returned each morning. 'Juicers' are encouraged to use bigger vehicles to collect e-scooters in the late afternoon to recharge overnight, with payments made for each e-scooter recharged and redistributed. This unregulated market for juicers could cause problems into the future once the numbers of e-scooters increases and this will put additional vehicles on the road to collect the scooters. It could incentivise larger vehicles over smaller vehicles to capture economies of scale. There are also issues around the ethics of encouraging laypersons to handle these pieces of equipment and potentially encourage them to engage in dangerous practices of charging multiple e-scooters at a time. Some companies are employing people directly or sub-contracting to do the overnight recharging.

Governance

Some of the e-scooter companies (some of whom are also active in the bike share market) took the option of seeking forgiveness rather than asking permission on their entry to the North America market. A bit of toing and froing between city authorities and operators resulted in some e-scooters being deployed, then redeployed, but this has settled down with concentrations of e-scooter schemes on the west coast of America. In the last three, or four, months e-scooters have established themselves in a few key American markets with rising ridership in these locations. Bird, one of the main players in the US, rallied support from users in Santa Monica, California to lobby city hall to allow them to operate. E-scooter schemes have launched across the world in different contexts. Lime launched in Christchurch NZ with 400 e-scooters on a trial basis, which ran for six weeks and is likely to be extended until the new year.

Like dockless bikes in the bike share market they have suffered from 'dumping' and other forms of irresponsible user behaviour. This can be overcome with some smart interventions by the operator and local authority. Other common problems include the privatisation of e-scooters which make their way from downtown to the suburbs and get placed behind fences and in gardens. E-scooters can be used without power which makes them a more attractive for non-official use

Investment and acquisitions

The so-called big four in free-floating mobility (Uber, Lyft, Bird and Lime) have either developed their own range of e-scooters or bought-out an existing start-up. This is in addition to their existing suite of shared modes (cars, bikes, e-bikes). There are significant levels of venture capital investment from the big four in e-scooters, but also from traditional automotive companies like Ford who have acquired Spin.

Safety

The concerns over electric scooters are legitimate as with any new mode entering an urban centre. It should be noted that there are reported increases in admissions to A&E units where electric e-scooters are in operation, which is to be expected given increased use in a mode. In Christchurch, New Zealand which recently launched with 400 e-scooters, 30,000 users clocked up over 100,000 kilometres in two weeks, which is an average of 17 kilometres a day per e-scooter. A week after the schemes launch in Christchurch there were 14 reported injuries compared to 30 in the same period with conventional foot scooters. They have set up a reference group to include city officials, police, Age Concern, and the Blind Foundation to monitor the situation.

For share scheme e-scooters there are some inherently *risky* factors which need to be considered regarding rising ridership. Reports from the US suggest that e-scooters are being mainly used on pavements in the absence of cycle paths. Bird have pledged to fund bike lanes at a rate of $1 per e-scooter per day and asking other free-floating operators to make the same pledge. For the most part main roads are avoided. Use on the footway is likely to lead to conflict between e-scooters and pedestrians, and in some cases, collisions followed by injury. Furthermore, there is no requirement for riders to pass a competency test before riding which is especially pertinent with a new mode such as a e-scooter.

In addition to the above, e-scooters do present some unique safety challenges. Principally their size and stature. They have a small wheelbase and are quiet and quick. The e-scooters have come in for criticism from transport professionals and city officials over their lack of safety precautions either on

the e-scooters or with their riders. Compulsory helmets have been mooted as pre-requisite for use in some instances, but this is a policy fraught with limitations with the use of publicly available helmets.

Lime has launched a $3 million safety campaign called 'Respect the Ride'. The behaviour change campaign asks users to the sign-up to pledge of safe and sensible usage. They're also giving away helmets to the first 25,000 sign-ups to the pledge.

There is a safety concern that is unique to the UK which is how well will e-scooters ride on UK roads. The 8in wheels aren't pothole friendly which is likely to cause some discomfort, if not pose a significant danger, to the rider. As of March 2018, 400 cyclists were killed seriously injured due to poorly maintained roads in the UK since 2007, of which 22 were fatalities.

There is no set of uniform rules governing the use e-scooters and no set safety regulations to adopt. From recent reports the main safety concern is to riders themselves rather than to other road users or pedestrians. Questions remain over who is responsible in the event of a technical malfunction on the e-scooter. Riders have reported brake failings and a stuck throttle. Companies have abdicated responsibility for injury in the user agreements which is the cause of several lawsuits from riders who have had collisions on supposedly malfunctioning e-scooters.

Street Clutter and Vandalism

As we have seen with dockless bikes there is much concern about what these free-floating modes will do to our street scape. These issues can range from visual pollution to causing obstructions on the footway or on the carriageway. Vandalism has been a problem with free-floating modes in the UK, with dockless bikes becoming private units after being hacked. Compared to their bigger two-wheeled counterparts e-scooters are smaller, lighter and easier to move without being ridden.

Opportunity

E-scooters can be part of the urban mobility mix and the first-last mile solution. They have a uniquely different appeal to an e-bike with a different 'feel' to it as you stand upright compared to the seated position of a bike. This puts the rider at eye level with pedestrians which makes them more human-scale friendly. This doesn't necessarily help in terms reducing conflict with pedestrians and other road users. An opportunity with them is they don'tunlike an e-bike, require the user to spend time learning to ride it.Whilst this clearly poses its own challenges it is an opportunity for those who never learnt to ride a bike. They may also appeal to a new audience who don't enjoy riding a bike or don't see themselves as cyclists. With no physical exertion required it is not addressing the health agenda compared to cycling, but it can be a useful alternative to the car for those who don't want to exert themselves. Like many new mobility modes, it is not yet clear which trips the e-scooters are replacing. However, Lime Bike who operate bikes, e-bikes and e-scooters surveyed their users in San Francisco found that half of respondents might have taken the car (or taxi) had they not used an electric e-scooter. Rides start at $1 rental fee with $0.15 per min thereafter.

Legality

Currently in the UK, Electric scooters are classed as Personal Light Electric Vehicle (PLEV) which requires it to comply with the Highways Act, however, without pedals this makes them harder to classify leaving them in a mobility grey area. Essentially, they are banned from the public carriageway and from cycle lanes. They are permitted to be used on private land only.

Already there is a burgeoning private market with Halfords offering a range of models while budget supermarket Aldi have created their own model using in-house brand Crane. Their popularity is growing in London though, at least anecdotally as you see more on each visit.

E-scooters in the UK

In November 2018 Bird e-scooters announced they would launch a pilot scheme in east London near their offices with use limited to private land of the Olympic park, the closed scheme will only be open to employees within this district. The situation is not likely to remain static, with the government pressed into developing policies on e-scooters in the coming year. It's likely that e-scooters would launch in London before entering other cities in the UK. The current impasse in their legality is unlikely to change in the near future with the current regulatory environment in the UK, with Brexit on the horizon.

CoMoUK recommendations

- E-scooters could be an attractive and useful tool in increasing the share of non-car travel in cities. It is unclear where this ridership would come from in terms of modal split but we estimate a percentage would be 'new' trips, while a significant proportion would come from congested peak services on public transport. With a proportion from taxis and ride hailing services. In cities with shared e-bikes and dockless bikes, e-scooters have proven to significantly more popular with users.

- Space is created for e-scooters (and bikes) on our roads so that they don't have to interact with pedestrians or vulnerable road users. It should serve as a further incentive for city authorities to build cycle lanes to accommodate these modes.

- Prior to any sort of roll-out it should be considered how e-scooters fit into the mix of sustainable and active transport options. Planning should consider where and how we want these e-scooters to be used. We would recommend virtual or light-touch parking bays for e-scooters in and around other mobility options.

- Finally, we would recommend a UK wide accreditation scheme for e-scooter operators similar to that which has been successfully established in the car club and bike share industries. The accreditation scheme would cover: safety features, operating practices, data sharing, customer service and ethical and environmental working practices.

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