

THE FUTURE OF URBAN MOBILITY


You'll carpool a lot more in the coming decades, or ride a bike to work. Either way, you probably won't consider a car as your first option for the daily commute.

BY LUMKA NOFEMELE

"I need a car," I grumble as I reluctantly rise to start the daily ritual of preparing to catch my morning train or bus to get to work. Sometimes, when the public transport system fails me, I take a cab. And then I find myself stuck in endless traffic, watching bikes, taxis and even what I'm pretty sure was a modern day horse and cart pass me by.

After paying for my ride, I am left reconsidering whether I want or need a car at all. I am not the only person with these ambivalent feelings towards motor vehicles. I discovered at the Mobility Indaba in Cape Town towards the end of 2016 that, to move forward, we might need to move back – to a society with fewer cars on our roads.

POPULAR MECHANICS investigates the alternatives.



Rising petrol prices, insurance and maintenance costs, hours spent in traffic and environmental issues have all turned the car into an enemy of efficiency and led big business and government to start thinking of other options for commuters.

"Investment in transport infrastructure over the past 40 years has focused on the development and expansion of the road network for general traffic and policies have encouraged the widespread and unconstrained use of private cars," says Richard Gordge, CEO of Transport Futures. Transport Futures is an independent consulting company specialising in providing planning, management and strategy support to the public transport sector. Gordge identifies twin threats that represent a very inefficient and hugely costly status quo for mobility: increasing levels of car ownership along with very low vehicle occupancies.

Car ownership has been boosted, he says, at the expense of public transport. "While

money was invested in making it easier for people who use private cars, public transport investment, management and operations were extensively overlooked."

We're all the losers, but the carless poor bear the brunt, he says. And squeezing more vehicles on to the road is more a problem than a solution. "The solutions do not lie in creating more space for more cars, but rather in reducing the demand for private travel by increasing vehicle occupancy and shifting travel to other modes and reducing the need to travel for some trips altogether," he continues.

We need to shift behaviour. And that's exactly what Accelerate Cape Town, a business leadership organisation, aims to do: shift us away from cars. Accelerate's CEO, Ryan Ravens, doesn't mince words: "The biggest challenge to our transportation system are single occupancy vehicles – namely, cars."



How seriously should we be taking this?

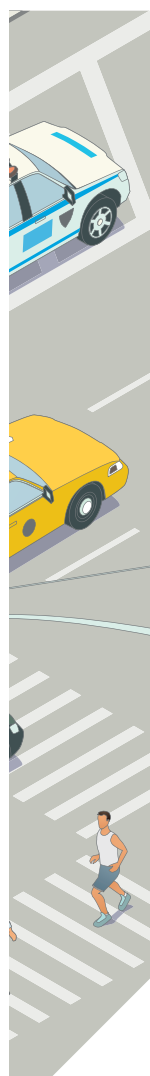
That's not to say becoming a cycling nation is impossible. The Netherlands, for example, prides itself on being exactly that: one out of every four working people in the Netherlands travels by bike.

"The Netherlands used to be a bigger cycling country in the 1940s and '50s. When cars became more affordable, governments started planning car cities. This was met with public protests for more cycling-inclusive cities, with mothers leading the way asking for safer paths for their children to travel on their bikes without getting hit by cars," he explains.

It is widely known that in South Africa a car is more than just a way to get from point A to point B. It is a status symbol as well. In the Netherlands, this is not the case. "Over time, the car changed from being a symbol of wealth to simply being a mode of transport."

The real symbol of success in the Netherlands is not a flashy car. Instead, that symbol of success is freedom, the freedom to choose between using a bike or a car. "A bike is the easiest way to get around cities; it just makes sense to own and use one," says Van Duren.

STOCKPHOTO/MATHISWORKS



The brushless electric motor (top left) is essentially an AC synchronous motor and is the bedrock of the EV industry. POPULAR MECHANICS visited Ewizz Scooters where owner, Andy La May gave us a tour and explained how eBikes work. We also got to give the company's flagship Volt 6 model a test drive.

bring about economic progress. There are undoubted technological gains. Van Duren has had an uphill battle convincing people of the cost and health benefits of bikes, but he feels that South Africans can be convinced of the same.

"South Africa faces security challenges, but safety comes in numbers. The more people cycle, the more people will feel safe doing it," he argues. "Cycling could solve the congestion problem, but infrastructure needs to be built to accommodate this. South Africa actually has a better climate than the Netherlands, so there are great possibilities for cycling."

It helps that the Netherlands has a highly efficient public transport system to supplement cycling. Commuters primarily use trains for long distances; bikes are available for rent at stations. Services such as Uber and taxis are mainly used by tourists or people visiting the country for business.

Peddalling a bike can be hard work. Not everyone is up to making the effort. Let's not even talk about the questions of time, danger and the inevitable sweaty body and creased clothing.

E-power could be the answer. Whether fully powered by electricity, or by a hybrid set-up that combines pedal power with e-assistance, there's both a

reduction in physical effort and a promise of greater range.

Andy le May of Ewizz Scooters says that, because electric scooters take up only a tiny fraction of the space on the road and in parking, they could solve congestion problems. "A scooter can zip through slow-moving traffic, making journey times much shorter and much more predictable. The cost of one month's fuel for a car would run an electric scooter on the same journey for nearly three years, says Le May. And that's fuel: e-scooters also need little servicing.

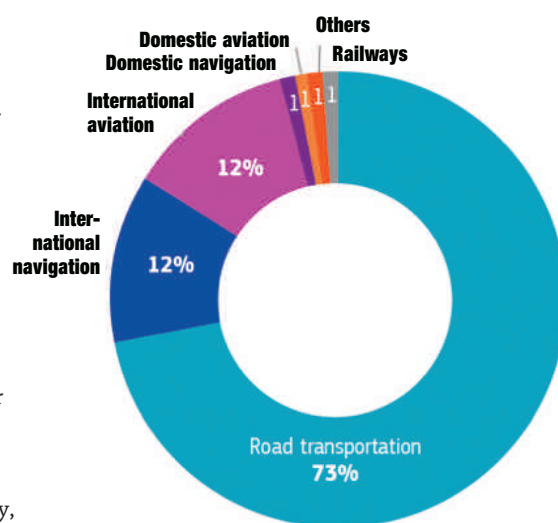
In addition to which, e-scooters are for all practical purposes zero-emissions vehicles. "Yes, there are emissions if the electric scooter is charged using Eskom-generated electricity," he concedes. "But it is still around three times less than the emissions of an equivalent petrol scooter and seven times less than a car. If the bike is charged using solar power, emissions are zero."

The dangers of travelling by bike are overstated, Le May believes. "Bikes and scooters are a very common form of transport all over the world, so I think the perception that they are not safe is not correct. We need to look at all aspects of safety. How about the damage to our environment caused by cars? This is clear danger to all our lives. Driving an electric bike is doing something about securing our future."

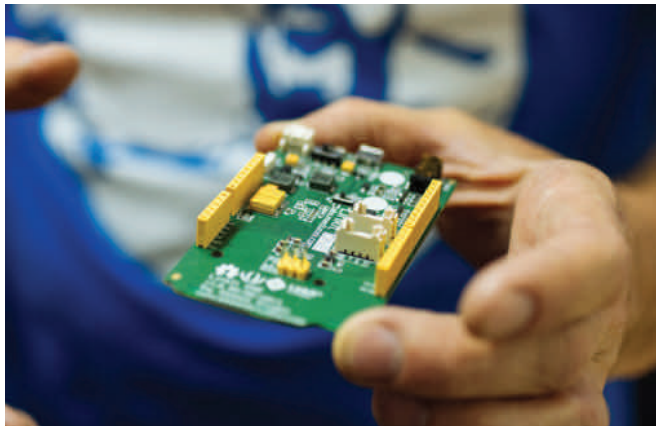
It's a point of view endorsed by Hiten Parmar, deputy director of uYilo, an e-mobility technology innovation programme. The biggest challenge globally, and SA is no exception, is shifting societies towards sustainable modes of transportation, he says.

And Parmar sees e-bikes as a practical option for South Africa, even if that would involve a paradigm shift in commuter thinking. Parmar would start by targeting the youth to adopt this mode of commuting, with the idea of creating a lifelong desire for sustainable transport. Feeding into that on a practical level, local

GREENHOUSE GAS EMISSIONS (GHG) from transport in the EU, 2014



SOURCE: EEA, GHG DATA VIEWER.



Top: La May explains how Ewizz plans to expand into using mobile technology to better monitor the performance of bikes. Above: The Volt 6 electric bike can go for an average of 110 km before needing a charge.

e-bike manufacture would mean cheaper, more accessible bikes that could be lifechanging for the many who might otherwise be resigned to walking long distances.

For those who can afford it, there's Uber. Because, as much as e-bikes might present a solution to one of my many personal transport problems, they might prove to be less useful to parents travelling to and from work or running errands on the weekends. This is where ride-sharing has found its place. Services like Uber and the lift-club app uGoMyWay have made travelling more convenient.

Clint Sheraton, marketing manager for the ride-sharing app Taxify, says that it has been well received. Plans are being made to extend the app (currently active in Johannesburg and Cape Town) to Durban and Port Elizabeth.

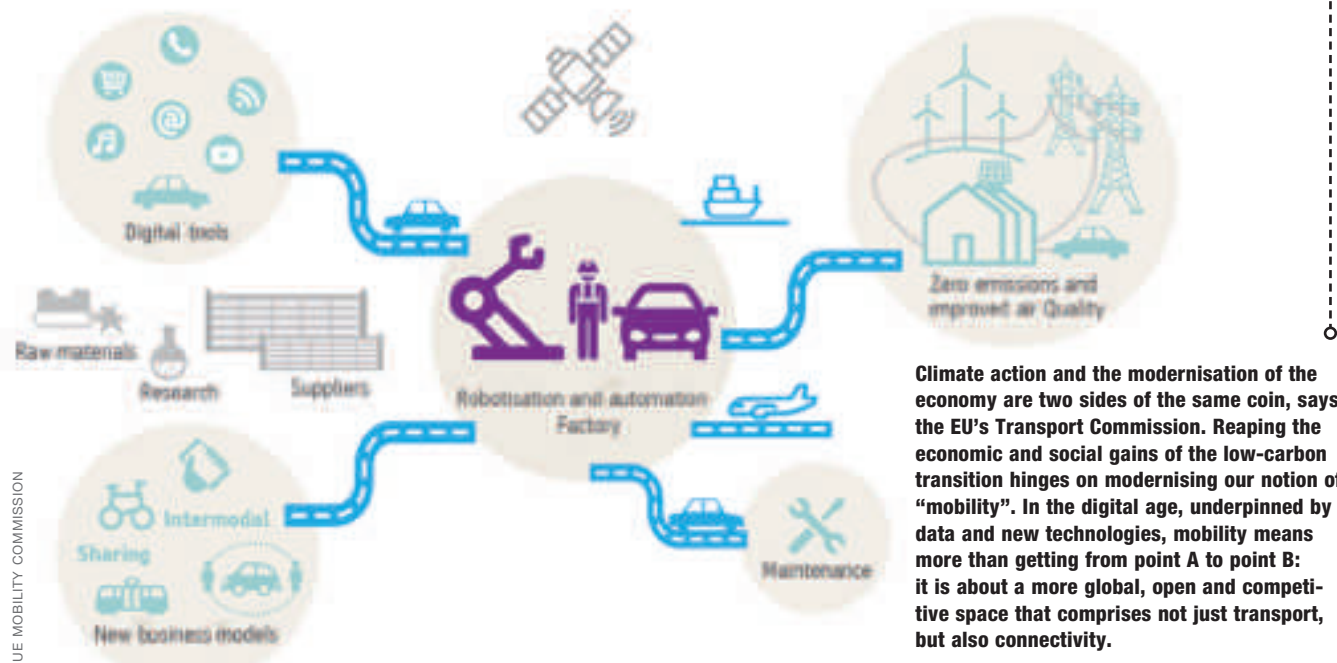
"There is a growing need for apps like Taxify because we offer more convenience. You can request a taxi within minutes, receive instant feedback and charge a competitive price," says Sheraton. Even so, ride-sharing pricing can still be hefty and the environment still suffers.

Enter the Green Cab. The Green Cab is a transport service largely used for guided tours, conferences and transfers. It's notable for being owned entirely by women. And its fleet, like its name, is green; in other words, environmentally friendly. The fleet comprises cars powered by electricity, low-emission liquefied petroleum gas and biodiesel.

"We started the company in the middle of an ecological recession, when there was mounting scientific evidence and increased international consensus that we are living beyond the Earth's means," says Green Cab managing director, Amiene van der Merwe. "We believe that the climate change buck stops with us and so we went the extra mile to reduce and compensate for the residual emissions generated by our transport services."

Van der Merwe's company is busy building a fully fledged cab division that, ironically, aims to empower taxi drivers sidelined by the e-hailing phenomenon typified by Uber. Social franchise opportunities will be awarded to existing individual

THE MOBILITY ECOSYSTEM INVOLVES NEW PLAYERS



Climate action and the modernisation of the economy are two sides of the same coin, says the EU's Transport Commission. Reaping the economic and social gains of the low-carbon transition hinges on modernising our notion of "mobility". In the digital age, underpinned by data and new technologies, mobility means more than getting from point A to point B: it is about a more global, open and competitive space that comprises not just transport, but also connectivity.

taxi operators who, besides being uncompetitive against e-hailing technology, often drive an ageing internal combustion engine vehicle. "By joining our Green Drive, they will be able to leapfrog into the future by being as aggressively green as possible and operating on a world-class e-hailing platform," she says. It's a development that's inevitable as sustainable transport is becoming more important to key players in the economy, she adds. "And the country will see a shift towards green transport alternatives in the very near future. Given that transport, as a key driver of our economy, is responsible for almost a quarter of all carbon dioxide emissions in SA, this is where the rubber hits the road and where we can make the best inroads in terms of emission reduction. We believe that corporate South Africa is waking up to this fact and is looking for ways to reduce their emissions in an effort to reduce their future carbon tax obligations."

In political and societal terms, too, sustainable transport is assuming ever greater importance and features increasingly on the agendas of cities as they grapple with ways to achieve a low-carbon future. The Paris Declaration on Electro-mobility, for example, states that 20 per cent of all new vehicle sales worldwide by 2030 would need to be electric if we are to meet global emission reduction targets. For Van der Merwe, this is proof that there is the necessary political will to change. "As charging infrastructure improves and electric vehicles become more affordable with improved range and reduced charging times, there is bound to be greater up-take by the public," she believes. Experiencing what electro-mobility can mean through experience in her company's initiatives, she adds, will help build the necessary momentum. But it's not just a mind-shift towards warm and fuzzy feelings: there are very practical dimensions to all of this. "As we drive demand for Green Cab, operators will be convinced that the radically reduced maintenance cost of operating an electric vehicle makes it an ideal vehicle to operate as a cab."

Ride-sharing services are feasible transport alternatives, but not for all. That's true whether they are eco-friendly or not. I certainly could not afford to take a cab everyday, so what are the options for the average cash-strapped commuter right now?

The bad news is that public transport, nationally, doesn't hack it. It's in dire need of an overhaul: capacity needs expanding and safety and ageing rolling stock are huge concerns, as is reliability.

But there is good news, too.

Integration, identified as the cornerstone of future successful public transport systems, is gaining traction. "Cape Town's MyCiti is currently busy with the roll-out phases and will continue to do so until most congested areas are reached and serviced," says Gordge. "Integrating public transport is key for commuters. For example, being able to purchase



one ticket that covers your entire trip, even if it means switching modes of transport. You could use a minibus-taxi as a feeder service to reach a rapid transit bus station, but only pay one integrated fare."

The Department of Transport is on the same page, though in terms of integrating different modes of transport it's looking at things more broadly. Although we need to integrate motorised and non-motorised transport, the non-motorised kind should be first option, says Moshe Ramotshwane, the DOT's deputy director of non-motorised transport policy, strategies and programmes.

"The transport system and access to quality are unequal and government needs to work to reform that," Ramotshwane told the mobility indaba. "The National Land Transport Act needs to integrate all forms of transport and government communication channels need to stay open so that those who do not have cars, those who do and those who don't want to use their cars any longer all have equal opportunities to travel as they please as efficiently as possible."

Here's how it could work.

"For example", says Gordge, "there's the ability to be able to take your bicycle on the train during peak hours without paying an exorbitant fee. The government and businesses need to promote ride-sharing and need to encourage commuters to carpool to work and back as well as supporting cycling as a mode of transport for a full or integrated trip."

And these can't just be solutions for our current situation. "An ever-increasing majority of the world's population today lives in major urban centres," he says. "South Africa is no exception, with estimates indicating that continuing rapid migration to, and organic growth of, primary urban centres will result in four out of every five South Africans living in cities by 2050.

"To function effectively, cities depend on efficient, climate resilient transport systems. Without such systems, they fail as economic engines to attract and sustain investment. They become uncompetitive. That results in steady economic, social and environmental deterioration and eventual collapse. Major policy shifts are occurring (that will) constrain private vehicle use and create livable cities through transport and land use planning responses that are becoming truly sustainable."

