

Mobility
Readiness
incex

Mobility 2030 series

KPMG in Ireland

Introduction

For the majority of cities around the world, the reality of urban transport today is far short of what it could be, with crowded streets, nose-to-tail traffic, unacceptable air pollution, and arbitrary journey times so frequently the norm. Ireland is certainly no exception, with research suggesting Dublin commuters spend more time stuck in traffic than all other cities of the 200 surveyed in 38 countries, with the exceptions of Bogota and Rome¹. The Environmental Protection Agency (EPA) has warned of worsening air pollution levels as a consequence, with NO2 levels closely correlating to traffic volumes.

Mobility as a Service (MaaS), an umbrella term for the provision of multiple integrated mobility options via a single digital platform, represents a real opportunity to leverage new technology in order to improve this state of affairs. Of course, to say so is easier than to do so, and successfully deploying a comprehensive MaaS offering is a major undertaking, both in terms of the physical and digital build and the enabling governance framework. But this should not deter stakeholders, especially public bodies, from grappling with the task, given the clear utility to public health, to general wellbeing and to the economy. The risk that public authorities run if they sit back and allow private sector interests to forge ahead on a piecemeal basis is that they lose the opportunity to shape the development of the MaaS ecosystem, depriving the public of the oversight and involvement that should enable such new mobility systems to gain durable acceptance.

This year saw the Department of Transport (DoT) publish its National Sustainable Mobility Policy (NSMP), explicitly envisioning MaaS in Ireland, as well as Smart Dublin and the SMP's 'Rethinking Mobility in Ireland', which makes a strong case for MaaS. We have developed the Mobility Readiness index, to assess the relative preparedness of ten major urban centres across the island of Ireland to develop MaaS. We hope that this will spur consideration and collaboration between relevant stakeholders, and smooth the path to adoption for what promises to be a revolutionary development in transport history.

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1 https://www.irishtimes.com/news/ireland/irish-news/dublin-one-of-worst-cities-in-world-for-traffic-congestion-1.3791651

About the index / reader guide

The Mobility readiness index aims to assess the readiness level of 10 of the biggest urban centres on the island of Ireland (Dublin, Belfast, Galway, Cork, Limerick, Derry, Lisburn, Bangor, Waterford and Craigavon (including Portadown and Lurgan), assisting Local Authorities to focus on the areas that require more development. The intended audience is Local Authorities, or private sector interests considering where is most appropriate to penetrate the Irish market, launch a new service, or invest.



KPMG's Mobility Readiness Index combines over 20 individual metrics from a range of relevant sources, arranged across the following five pillars: shared mobility; micro mobility; electric mobility; public transport; digital penetration, and enabling technology.

The metrics we have used are inherently limited by availability of comparable data. Each city is scored for each pillar, with these scores being aggregated into totals for comparison. As data improves, we expect to revisit it with improved results for some of those towards the lower end of our top 10 in particular. For this reason we provide the ranking for 2022 with a health warning: our purpose is to initiate relevant discussion rather than claim a definitive or comprehensive ranking. It is important to note that we included electric mobility in our index, therefore we use the term mobility and not only MaaS. KPMG excluded AV (autonomous vehicles) this time as other than FMCI (Future Mobility Campus Ireland) near Limerick and early feasibility studies elsewhere, there isn't much to differentiate the urban centres.





Methodology:

To build the index, we scoped available relevant public data sources (see endnote), and met or corresponded with: Belfast City Council, Cork City Council, Dublin City Council, Galway City Council and Limerick City Council, all of whom we would like to take this opportunity to thank². In addition, we held meetings with relevant SMEs including Mark Elmore of Connected Autonomous Vehicle Ireland, and Wassim Derguech of Future Mobility Ireland.

Finally, to add to the above background information we conducted a public survey of approximately 300 respondents across Dublin (~50%), Belfast (~35%) and other parts of both Ireland and Northern Ireland (NI). To account for a lower number of responses from residents of Bangor, Lisburn, Derry and Craigavon, these areas have been aggregated as 'other NI'.

Metrics

Pillar		Weight	Metric
Public Transport	Use	40%	% of journeys by mode of public transport ³
			Number of journeys by mode of public transport – normalised by population ⁴
	Infrastructure	30%	Number of bus stops per 100,000 residents ⁵
			Length of public transport lanes in km2 per size of the city ⁶
	Assessing further potential	30%	The time gap between public transport and private car ⁷
Shared Mobility	Use	55%	Existence of: Peer to peer (P2P) car sharing services Business to customer (B2C) car sharing services Carpooling, Ride hailing, Shared micro-transit ⁸
	Policy	30%	Willingness to use shared mobility services in a typical week ⁹
	Assessing further potential	15%	Existence of strategy for shared mobility and/or monetary incentives for shared mobility ¹⁰
Micro Mobility	Use	30%	% of journeys made by cycling ¹¹
	Infrastructure	20%	km of cycle lanes per 1,000 people ¹²
	Policy	40%	Existence of bike sharing scheme ¹³
			Local/state investment in micro mobility in the area ¹⁴
	Assessing further potential	10%	Willingness to use shared micro-mobility services weekly ¹⁵
Electric Mobility	Use	30%	Number of private electric cars ¹⁶
			Number of electric buses ¹⁷
	Infrastructure	20%	Public charging stations ¹⁸
	Policy	25%	Strategy, policy, legislation and incentives ¹⁹
	Assessing further potential	25%	 Innovation: local startups, initiatives and developments²⁰ Willingness to use electric vehicles²¹ Willingness to spend spend more money on an electric car compared to an internal combustion engine car.²²
Digitalisation and Tech enablers		33%	Internet speed ²³
		33%	Contactless card penetration (including non-card, watches etc) ²⁴
		33%	People that define themselves as tech-savvy ²⁵
3 NTA, National Household Travel Survey, 2017 8 P2P car sharing: Turo, JoinTheFleet; B2C car sharing: GoCar, EnterpriseRentACar, Hertz, EuropCar, Toyota Yuko Car, Carpooling: LiftShare, BlablaCar, Carpooling: LiftShare, BlablaCar, Carpooling, LiftS		JoinTheFleet; 1 Car, Hertz, EuropCar, oooling: LiftShare, orld, Carpling, hailing: The nicro-transit:	11 reland NTHS Survey, NI Cycling Report, 2016/17 13 MOBY, Bleeper, Zipp, TFI Bikes Ireland, Beffast Bikes (2022) 19 Dublin City Development Plan; DLA Electric Charge Point Draft Strategy. Data provided from city councils. 12 Cycle Lane Data 2019, Belfast Bike Life 2019, NTA Cork Metropolitan Area Transport Strategy 2020, Limerick Metropolitan Cycle Network Study 2019, Galway Transport Strategy 14 NTA Ireland, UK Department for Infrastructure 19 Dublin City Development Plan; DLA Electric Charge Point Draft Strategy. Data provided from city councils. 20 Survey 21 Survey 20 Survey 21 Survey 15 Survey 16 BeepBeep - Motostats 23 TheJournal.ie; Three 2016, Craigevon Cycle Rottes, Cycle 17 NTA, TransLink 23 TheJournal.ie; Three 24 Survey 24 Survey

7 KPMG analysis. Travel times were measured at 5 popular routes in each city and were measured at 8.00 a.m.

10 NTA

- Development Plan 2019, Bangor Cycling Routes
- 18 ESB, Zap-Map, EasyGo, Chargemap, Open Charge Map, PlugShare
- 25 Survey

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Perhaps unsurprisingly, as the biggest city and the most developed transport system, Dublin topped the index overall by a good margin. However, this should not be taken to imply that Dublin is 'ready' for MaaS, since the data for individual pillars reveal many areas that are in need of improvement, as will be shown. Belfast, Cork and Galway all score within a margin of error of each other, with Lisburn, Craigavon and Bangor similarly clustered. However, it is only in drilling down into these figures by pillar that we can make the most of the index.



The public transport pillar is also dominated by Dublin, which scored relatively highly for its percentage of journeys undertaken on public transport (PT) and the number of bus stops per 100,000 residents. The obvious point of improvement for Dublin as far as this pillar is concerned was the availability of PT lanes. By contrast, whilst Lisburn received a lower overall score, it scored higher than any other city for this metric, and its score for the public transport pillar as a whole is dragged down by its lower percentage of journeys made by PT.²² In shared mobility, lower scores across most indicators reflect the fact that most shared mobility services (ride hailing, shared micro-transit on demand) are not yet present in Irish cities, for regulatory reasons. Exceptionally low scores were registered by all urban centres in the index, with only Belfast, Cork, and Dublin managing a five or above, reflecting the fact that many have no existing strategy for shared mobility, offering local decision makers plenty of low-hanging fruit as they consider how best to bring MaaS to their area.





22 In part reflecting that some data points reflect the wider Lisburn & Castlereagh Council's boundaries, which cover significant rural and small settlement areas where private transport is more practical.



The micro mobility pillar sees a wide spread of performances, with Limerick edging ahead of Dublin for the top spot due to a greater availability of cycle lanes, greater local willingness to use shared mobility options and a higher score for local investment in micro mobility. Observable score differences were recorded for the existence of bike sharing schemes, which are absent from Lisburn, Bangor and Craigavon. Interestingly, the metric showing greatest consistency across the cities was survey-measured willingness to use shared micro mobility services on a weekly basis, suggesting that providers have a long way to go to convince users to adopt new modes of transport.



Electric mobility also sees a wide spread between bottom and top performers, with Dublin leading and the first four slots all occupied by cities in the Republic of Ireland. Lower-ranked council areas are hampered by having fewer electric buses and no local innovation in the form of relevant startups or developments. It is striking however that willingness to use electric vehicles and to spend extra money on mobility were much more consistent.

Electric mobility Dublin 7.4 Galway 7.1 Limerick 6.7 Cork 6.4 Belfast 6.1 Derry 5.7 5.6 Waterford Lisburn 4.6 4.2 Craigavon 3.9 Bangor 0 2 4 6 8

The digitalisation and technology enabler pillar sees Belfast take the top slot, but the salient feature of the pillar is the general consistency of relatively high scores, suggesting that the availability of enabling technologies should not be one of the major barriers to MaaS for any of the sample cities.



Conclusion

The proliferation of relevant technologies on the pull side, plus the intractability of congestion-related inefficiency and pollution on the push side, seem sure to drive strong interest in MaaS at the municipal and local governmental levels, as well as from enterprising startups keen to raise a new generation to the convenience and efficiency of new mobility options. However, MaaS that is carelessly implemented risks alienating potential users and slowing adoption and acceptance. Success will come where cities adopt a collaborative and comprehensive approach, adopting known best practises and, crucially, moving to fix known weaknesses. We hope that the Mobility Index can provide a starting point to this end. To conclude, we identify some key implications by stakeholder type.



Local Authorities

- Some populations clearly lack confidence in their 'technical ability' with reference to MaaS adoption. Local authorities may be able to overcome this through marketing, free classes or introductory tuition for relevant demographics.
- The provision of lanes to separate e-scooters and bikes from motor vehicles is the obvious low-hanging fruit for local authorities, but other infrastructural requirements such as designated parking hubs are also important.
- The relatively low proportion of journeys that are made on public transport in all urban centres across the island of Ireland suggests massive potential for MaaS uptake, if systems are made effective and accessible - representing a clear win for a range of economic and environmental policy objectives.
- The continued absence of bike sharing schemes from some cities in the index suggests an obvious entry point into building the MaaS future infrastructure.
- A number of cities do not have a strategy for shared mobility of any kind and should begin work on creating one immediately. Doing nothing at all risks ceding the opportunity to shape future mobility with public outcomes in mind.
- At the same time, local authorities do not need to build MaaS themselves, only to facilitate it. The foundational element of any system will be data, and local authorities should look to create an inventory of relevant mobility data sources and understand what new data can be collated from existing mobility options of significance to future MaaS.







Central/devolved government

- The index makes clear that a lack of relevant regulation is hampering adoption of new mobility options such as shared micro transit and ride hailing, which are likely to play a major role in MaaS systems. Now is the time for the Department of Transportation and Department for Infrastructure to take the initiative to set overall policy direction and provide vision for MaaS at the national level, or risk being a passenger as others build it.
- Given the overwhelming importance of data to any proposed MaaS substructure, national bodies have a potential role in defining and providing overarching data standards and protocols for interoperability, as well as security.
- Data sharing and multistakeholder collaboration will be critical to the success of any MaaS system, creating a potential role for nationallevel regulators or government to convene fora bringing interested parties together and brokering necessary relationships.
- Openness of access, both for users and providers, should be a strategic priority for national or locallevel MaaS strategies, to encourage the widest participation possible and avoid MaaS users being held hostage by monopoly providers.

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Private providers

- The index makes clear that an element of persuasion and / or education will be needed to encourage many potential users to adopt new mobility solutions, which could be accomplished through targeted incentives or educational initiatives.
- The Irish market is bigger than Dublin, with at least the ten urban centres in our index representing clear opportunities for the deployment of MaaS. Different authorities may well opt for different MaaS providers and models.
- Engage with local authorities now to help them understand where your offering can fit within an orchestrated MaaS system, benefiting users and local/national policy objectives, as well as what data they can collect from existing mobility options.

OEMs and supply chain

- OEMs looking to profit from the nascent MaaS market should seek to actively drive high-level policy, planning relevant digital and physical infrastructure.
- MaaS will create a multitude of opportunities, not only in equipment manufacture but data management, security and systems integration, as well as adjacent markets like rider insurance.

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