

**Report to the Chairperson and Members
of the Transportation
Strategic Policy Committee**

STATIONLESS BIKE SHARE SCHEMES

Introduction

Dublin City Council has been approached by several potential operators of stationless bike share schemes with a view to rolling out such schemes in Dublin. Stationless Bike share schemes are wide spread in China and are expanding globally. Dublin City is perceived as having good market potential and is likely to continue to attract potential operators. Having regard to the extent of interest expressed by operators, the impacts both positive and negative of the schemes and the investment the city has made to date in the Dublinbikes scheme, it is considered that the city must be proactive in developing a policy and framework for dealing with Stationless bike share schemes. This report has been prepared by a cross departmental working group within Dublin City Council. It questions whether there is a role for stationless bike share schemes in Dublin City. It examines the benefits and challenges of the schemes and makes recommendations regarding a way forward.

What are Stationless Bike Share Schemes?

Bike Sharing is a form of bike rental whereby members of the scheme pick up a bike at one location and drop it back at the same or another location when the journey is complete. Dublin's current scheme is a station based scheme where the bikes are docked at physical docking stations. The stationless system does not depend on infrastructure such as docking stations or even standard cycle parking facilities. The general idea behind the system is that the bikes are self locking. There is a physical lock on the bike that prevents it from being used which means that the bike does not need to be locked to something. Users download a mobile app on their smartphone which unlocks the bike when they want to use it, charging a fee. Other models of stationless schemes do include a locking system which requires the bicycle to be affixed to something but again do not require a station and operate via a mobile app. The operators who have approached Dublin City Council favour the Chinese model whereby the bikes are not locked to a fixed structure but are left in an identified geo-fenced area or a type of 'virtual station'.

Stationless bike share schemes are the next generation of bike share schemes. They have emerged out of the challenges presented by current bike sharing models. They overcome the geographical range imposed by bike share docking stations and provide users with the flexibility to leave bikes where they end their journey, which may not be at a station. Key to these schemes is the use of technology embedded within the bikes, namely GPS. In terms of accessibility, due to systems being app based, users have real-time information to access bikes that are located close to them. Furthermore, users are able to unlock and lock bikes with their smart phones.

The appendix to the report demonstrates the growing global interest in stationless bike share schemes. As Dublin is a hub of information technology companies with a highly successful bike share scheme that needs to be expanded; Dublin is viewed by innovative bike share companies as a hot spot for their product. Therefore, it is important that Dublin City Council explores the potential of stationless bike share schemes but also seeks to understand the requirements and impacts of these schemes.

What are the Benefits and Challenges of Stationless Bike Schemes?

There are a number of benefits and challenges to stationless bike share schemes that require consideration. These are presented in the table below:

Benefits	Challenges
<ul style="list-style-type: none"> • Can contribute to growing the uptake of cycling as a mode of transport. • Opportunity to expand bike sharing services outside the city centre. • Opportunity to harness private investment. • Capital and operating costs for the City Council will either be zero or significantly lower compared with the costs of the expanding the DublinBikes Scheme. • Does not require intensive docking infrastructure (or no infrastructure in case of self-locking bikes). • Lower cost of implementation. • Ease of use. • IOT (Internet of Things) enabled possibilities of city harnessing cycling data. • Potential start-up opportunities for entrepreneurs. 	<ul style="list-style-type: none"> • Co-existence with DublinBikes - Are these schemes a threat to Dublinbikes or can they complement DublinBikes? • Negative impacts on public realm. • Bikes can be ‘abandoned’ anywhere i.e. on footpaths or other unsuitable (and illegal) locations. • Bikes can be ‘taken’ i.e. users could keep bikes in gated communities. • The quality of the bikes is questionable. • Maintenance of the bikes; issues around servicing, and relocation of bikes when required need to be determined. • Availability of space for parking -cycle parking is currently over capacity in the city centre with growing demand. There are few opportunities to expand cycle parking in the public realm. • Long-term financial feasibility. • Capacity of the city to absorb schemes by several operators.

The main benefit of these schemes is that bike sharing can be expanded at little or no cost to the city outside of the areas currently served by Dublinbikes. The main challenges include managing the potential impacts of the scheme on the public realm, ensuring that the bikes

are properly maintained, ensuring there is adequate cycle parking capacity in city centre locations and ensuring bikes are not abandoned at unsuitable locations.

The attached appendix provides some information on stationless schemes in cities outside of China. It appears that while the potential benefits of the scheme are welcomed by cities, there are serious issues arising due to clutter in the public realm and the impact of the schemes on existing city backed systems.

Is there a role for Stationless Bike Share in Dublin City?

Stationless schemes could play a role in continuing to grow cycling and active mobility in the city and could potentially complement the Dublinbikes scheme. Mobility as a service is growing and there is a role for expanded bike sharing within this approach where people rent rather than purchase a bike.

The current Dublinbikes system is a station based bike share system where bikes must be picked up and dropped off or docked at another station. While the current scheme is considered one of the most successful in the world, expansion of the system would be costly and would require substantial up front public capital investment and maintenance costs over time. There is growing demand for bike share outside the current range of the Dublinbikes system. There is a potential role for the stationless system to meet this demand. The City Council, having regard to the cost of expanding Dublinbikes should explore all available options for expanding bike sharing in Dublin. Currently, there are two options:

1. Expand the existing scheme in its current form with docking stations to areas as identified in the existing expansion plan.
2. Explore the possibility of stationless bikes as a compliment to the existing system.

Notwithstanding the success of the current DublinBikes Scheme and the demand that exists for its expansion into other areas of the city, there are very real constraints on its further expansion. Significant capital costs are required to fund the expansion and operating costs would increase as a result of greater tidal journeys associated with stations located further out from the city centre and a greater need to relocated bikes. The current funding model relies on on-street advertising to fund operating costs. There are challenges associated with this model, not least the difficulty in securing approval for on-street advertising structures. It is also very difficult to assess what 'value for money' the city would get, if any, from expenditure on any expansion of the scheme. Furthermore, since the scheme was launched there has been no technical innovation which would, for example, allow a bike or a cycle parking space to be booked through an app or online. The stationless bike share schemes build on the latest innovations in technology.

When examining the potential for stationless bike share in Dublin City, an important issue to consider is the limited space available within the public realm to absorb these schemes. The public realm in the city core is congested and there is a significant shortfall in the number of on street cycle parking spaces required to accommodate existing demand. It may be

necessary to allocate space for parking at specific locations. In order to minimise impacts on the public realm, it may also be necessary to require bikes to be locked to stands.

Should Stationless Bike Schemes be Regulated?

The question arises as to whether it is considered desirable and appropriate to regulate this new form of bike share scheme. On the basis that the schemes provide a public service, operate within the city's streets and make use of the city's public realm, it is considered that some form of regulation of the schemes is necessary. Bye-laws are considered the most appropriate legal regulation mechanism. In 2013, bye-laws for the regulation of car clubs were adopted. Car clubs provide a car share scheme for members. Cars are parked in designated public parking areas in agreement with Dublin City Council. The operators are licensed by Dublin Council subject to meeting criteria set out in the Bye-Laws. Operators pay a small fee for the licence. It is recommended that similar bye-laws be prepared for the regulation of the bike share schemes. These would seek to facilitate the operation of the schemes in specified areas, set out standards for quality and maintenance and address management of the impacts of the schemes.

Technical Dialogue & Pilot Scheme

It is acknowledged that bye-laws may take some time to prepare. It is considered that in parallel to the preparation of bye-laws a pilot scheme could be run in co-operation with potential operators. This would allow the benefits and challenges of the schemes to be explored and the impacts of the scheme to be assessed. A competitive dialogue process could be undertaken to procure a stationless bike share pilot with the City Council. Some financial support could be made available by the City Council in this regard.

Through a pilot scheme DCC will have the opportunity to identify solutions to challenges presented above and to verify the benefits of such schemes. From the perspective of DCC piloting will enable the city to be proactive and use the opportunity to inform the content of bye-laws for free floating bike share services within the city. A pilot would also enable DCC to trial bike share services in areas of the city that are currently not served by DublinBikes. A pilot will also provide the opportunity to examine the potential for a hybrid scheme, one which could complement the existing Dublinbikes scheme.

The objectives of the pilot scheme would be as follows:

1. Determine how bike share services can be expanded within the city.
2. Identify how the system can co-exist with DublinBikes:
 - a. New partnership model?
 - b. Adaptation of current system to accommodate both bike types
3. Develop solutions for potential challenges:
 - a. Maintenance
 - b. Impacts on public realm
 - c. Financing

4. Identify new challenges and test solutions.
5. Develop Bye Laws based on experience with pilot.
6. Explore opportunities for greater public benefit:
 - a. New partnership models for financing
 - b. New marketing mechanism for increasing uptake of cycling.

Conclusions & Recommendations

Stationless bike share schemes are on their way to Dublin. The City Council needs to be proactive in engaging with potential operators in order to ensure that the city can benefit from these schemes and manage the potential impacts. The schemes build on the latest technology, require little infrastructure and can be implemented at little or no cost to the City Council. They can expand bike sharing to areas currently not served by Dublinbikes. This type of scheme should be considered as an alternative to the expansion of the Dublinbikes scheme which would require considerable public capital expenditure.

While the potential benefits of stationless bike schemes are acknowledged, it is considered that some regulation of these schemes is warranted as they are essentially a public service operating in the public domain. Bye-Laws are considered the appropriate legal mechanism to regulate the schemes and as such it is recommended that the process to prepare bye-laws be initiated. It is also recommended that a parallel pilot scheme be run with potential operators to gain a deeper understanding of the operational requirements and impacts of the schemes. The pilot should also explore the potential for these schemes to complement the DublinBikes scheme and to serve areas outside of the city centre. It is recommended that a competitive technical dialogue be initiated to procure a pilot for the city.

Edel Kelly
Senior Executive Planner
Environment and Transportation Department

26th April, 2017

APPENDIX: INTERNATIONAL CASE STUDIES

Portland BIKETOWN – “Hybrid”

- Launched in July 2016, there are 1,000 bikes in Portland
- Bikes are equipped with GPS, U-locks, responsive lights, and baskets
- LCD display screen allow for users to quickly access bikes, put bikes on hold while running errands, and to report repairs.
- Chainless shaft drive
- Bikes can be locked into stations or to public bike racks for an additional fee of 2USD within the service area or 20USD outside.
- Membership schemes include group memberships and low-income groups
- Station design uses minimal infrastructure due to bikes being enabled with technology. Also critically less space is required.
- Marketing unique strategy with Nike producing limited edition bikes; also highly active social media engagement on Twitter, Instagram and Facebook (ie. 1500 tweets since Jan 2016, Dublin Bikes only has 2500 tweets since 2010)

Bluegogo, San Francisco

- Motivate already operate 700 bikes in San Francisco, contract with city means they can be the only operator of A-B operations
- Bluegogo’s initial ambitious plans of 20,000 bikes scaled back due to the city’s response and their operation stipulates that users must return their bikes back to base (A-A model) in accordance with Motivate contract. The city is not requesting they apply for permits to operate from car parks.
- Soft launch of bikes located in parking lots – not visible from public realm
- Similar negotiation process to Uber
- Current bikes only lock the back wheel rather than to cycle parking – theft issue
- Bikes are equipped with GPS
- Bluegogo’s entrance to San Francisco was heavily lobbied against by a rival bikeshare company, Motivate, who are backed by the Ford Motor Company.
- The service is currently on hold (30/03/2017) in the City as the company respond to the recent permit requests introduced by of the city

Nextbike, Cologne

- Nextbike operate a stationless system in Cologne
- Their lock technology is on the bike
- Bikes cannot be taken out of the city limit by a city wide geo fence
- Despite the lack of docks bikes are still kept in predictable main stations at key locations and there is a proactive redistribution system to ensure bikes are sufficient but not too many bikes where they are needed.

MoBike: Singapore, London, Manchester and Birmingham

- MoBike is a Shanghai based start-up, that produces its own bikes
- Bikes are GPS tracked

- Users access bikes through an app downloaded to their phones
- Bikes can be parked anywhere, but there are preferred locations marked by paint.
- Singapore – pricing is still being worked out

Ofo: Cambridge, UK

- Ofo is a Beijing based start-up that is currently operating in 33 cities in four countries: China, Singapore, USA and UK. Company attempted to launch bikes at SXSW in Austin Texas as SPIN
- Bikes are GPS tracked,
- Users access bikes through an app downloaded to their phones
- Bikes can be parked anywhere, but there are preferred locations marked by paint.
- Project is on hold due to concerns over bike clutter
- Challenge bikes being 'owned' / 'monopolised'