



Donkey Republic Case

An automated, self-service bike-sharing system

INSIGHT AND INTELLIGENCE
INSIDE YOUR BIKE





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Donkey Republic created in 2015 an automated, self-service bike-sharing system in a Copenhagen home basement. Since then, they have been taking that system on a ride around the world, while aiming to turn the bicycle into the hero of public transportation and a catalyst for greener, more liveable and less traffic-congested cities.

Hub-centric model

Donkey works with a hub-centric model that uses designated parking locations for the pick-up and drop-off of rentable bikes. A hub is defined in their system by the GPS coordinates of a point and a radius (e.g. 10 meters) within that point riders can drop off a bike. Customers can't end a rental unless they lock the bike within the delimited area, and there is a limited number of bikes that can be dropped off in that area.

Donkey sets the maximum capacity of a pick-up & drop-off location based on the available space in each situation and, if required, in coordination with city officials. Once a location reaches its capacity, it's not shown any more as a drop-off option in the app. Donkey bikes also have lock-to technology with a special leash fitting the AXA lock and can do hybrid systems with docking stations. Clean and orderly bike share!

Building a bike share based on the hub-centric model doesn't require expensive and space-demanding infrastructure such as docking stations, and allows for a better control over the system for both operators and city authorities, because they always know where the bikes are placed before and after a rental.

'Our goal is to make urban transportation simple and more sustainable, as well as to make city life in general better for everyone.'



Working with AXA-IN

Starting with a self developed electronic lock they soon partnered with AXA-IN to fulfill the need for a reliable and scalable lock solution. Since then the AXA Bluetooth locks have been the reliable lock credential on all Donkey bikes.



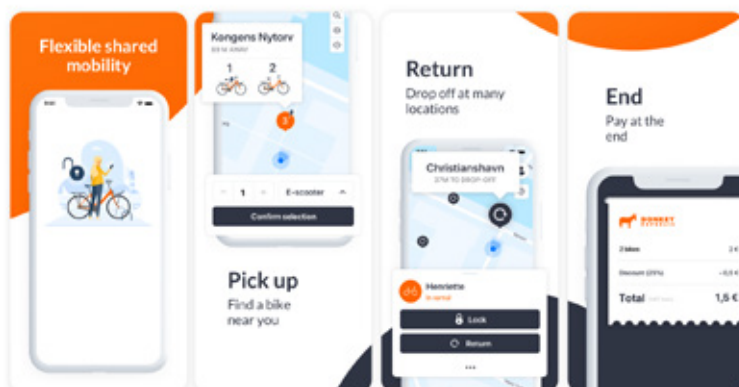
The technology

The Donkey Republic system is enabled by the communication between a mobile app and an electronic ring lock placed on the bike, via a low energy Bluetooth connection.

The Rider app

The Donkey Republic app for riders helps users create their account, find and rent bikes, unlock and lock their rented bike, switch bikes, extend and end a rental, or sign up for special memberships available locally.

‘We have had a very close collaboration with AXA and appreciated their professionalism and ability to respond quickly to our enquiries.’



The fleet management system

The fleet management system consists of the Owner app and an online admin system. They help local operators manage their bike fleet, have an overview of parking locations, rentals, revenue, utilisation rates, issues with bikes and other performance statistics (e.g. cancellation rates, customer satisfaction rates).

E-bikes

With the increasing demand for micro mobility Donkey has now entered the market for E-bikes. In that system they have chosen AXA-IN IOT and locks to connect the E-bike with their users. AXA-IN took care of the system integration of the drive line into the IOT modules resulting in a smooth user experience where the E-bike will be switched on and the lock will open controlled from the Donkey Republic app.

The bike lock

Each of our electronic ring locks from AXA and our own software, is connected to a bike in the system, which in turn assigns each bike to a pick-up location, i.e. a geo-location registered with coordinates in our system.



The advantages of working with AXA-IN

1

Key encryption

The Bluetooth Low Energy lock has a top of the line key encryption program via a highly secured Key Safe Cloud, which makes the connection between the telephone of the user and the lock. No additional hardware is needed.

2

Easy integration

The lock can easily be integrated to existing systems and platforms. It will give you more insight over your bike fleet and you never have to worry about handing out keys again.

3

Platform

The freedom to create your own complete platform solution.

Future plans

Donkey Republic is expanding quickly across the world. For now our main market has been Europe but we are beginning to get more and more interest outside of EU and expect large growth in those markets in the coming years. At the same time we are developing more advanced bikes and E-bikes and look forward to working closely with AXA in that process.

'In Donkey Republic we have tried building our own smart lock and we are always testing new solutions on the market. However we have chosen to stick with AXA as their lock has proven to be extremely reliable and safe.'

AXA BIKE SECURITY

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Used AXA IN solution

- AXA-IN E-RL Bluetooth 2
- Plug-in detection

About Allegion™

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