Complete Guide To E-bike Startup

Global market & business opportunities

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What's an e bike anyway?

It's not a bike, it's a bike-shaped Uber that says Jump"
- David Alpert

E bikes, digitised in the recent years is a motorised version of regular bikes - one that comes with an in built motor for propulsion. But that does not Eliminate the need for human pedals completely; the motor is used just for propulsion.

The vehicle includes rechargeable batteries and the higher powered ones can be used to travel for upto 45 km/h.

The classifications

There are several types of e bikes across the globe. The law of a state or country has a say on the speed limit & if the vehicle is considered to a an e bike at all. The types are:

Pedelecs - classified as a bicycle in legal terms, this type of bikes come with a low powered motor. It's apt for riders with a heart or muscle condition in need for pedal assistance.

S-pedelecs - legally termed as motorcycles or mopeds, these have a powerful engine and assists the rider continuously once 25 km/hr is reached.

Power-on-demand and pedal-assist - Bikes that has a combination of both pedal-assist sensors and a throttle, has a motor activated by pushing the throttle or by pedaling.

Why E Bikes Are Gaining Popularity?

As our perspective and attitude towards health and the environment are changing, our mobility choices are helping us to shape the future of transportation. Reasons for its popularity are:

Cost effective: Compared to cab rides, on demand micromobilty rides are way cheaper when it comes to shorter distance. Rates for e bikes are $2 for 30 mins compared to almost double the expense for a cab ride.

Going green: E bikes have zero damaging effect on environment as these vehicles run on battery. Climate experts warning us over the detrimental effects of carbon emissions coupled with global awareness efforts are making a positive impact..

cnet.com

Effortless ride: The built in motor assists you to pedal in sloped or rugged roads with minimal efforts. You can choose the type of model best suitable for your needs.

It's a bike shaped uber: It's not a bicycle, it's not a car. They are a whole new world of fun. It is convenient and cheap to travel long distances depending on its power.

Fitness freak's friend: Modern lives are busy and most people are too tired to gym after work. Cycling to and from work or running errands now has a healthy alternative - e bikes gives the rider a sense of satisfaction without making them too tired.

The Current App Industry

E bikes are here to stay for more reasons than the ones mentioned above. Investors have realised the industry's potential and trying to cash in on the increasing demands, offering sustainable app based solutions to the riders.

60% of all trips taken in the America are less than 5 miles. The market opportunity continues to expand around the world, and in the US alone, the micro mobility industry is estimated to be worth roughly between $200B – $300B by 2030.

Investors worldwide in a bid to cash in on this gold mine of opportunities have already poured in about $6 billion into micro mobility startups during the past 5 years.

DISRUPTING THE CAR

Alternatives to car ownership by trip length

Micromobility
0-5 miles

BIKES & SCOOTERS

motivate scoot
Lime SPIN |skip|
BIRD JUMP Razor

60% of trips in the US

Medium distance
5-15 miles

RIDE HAILING

UBER lyft Via
Gett

25% of trips in the US

Long distance
15+ miles

CAR SHARING

MAVEN CAR2GO
Getaround TURO

15% of trips in the US

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Around the world in two wheels

The world has signed up for a greener future and micro mobility services are helping us shape it into a reality.

Asia is the leading pioneer of micromobilty services. Lack of proper regulations in China witnessed a massive growth in it's cities along with countries like Singapore, Taiwan, and South Korea. The unusual amount of gridlock in Asian cities saw a solution in e bikes.
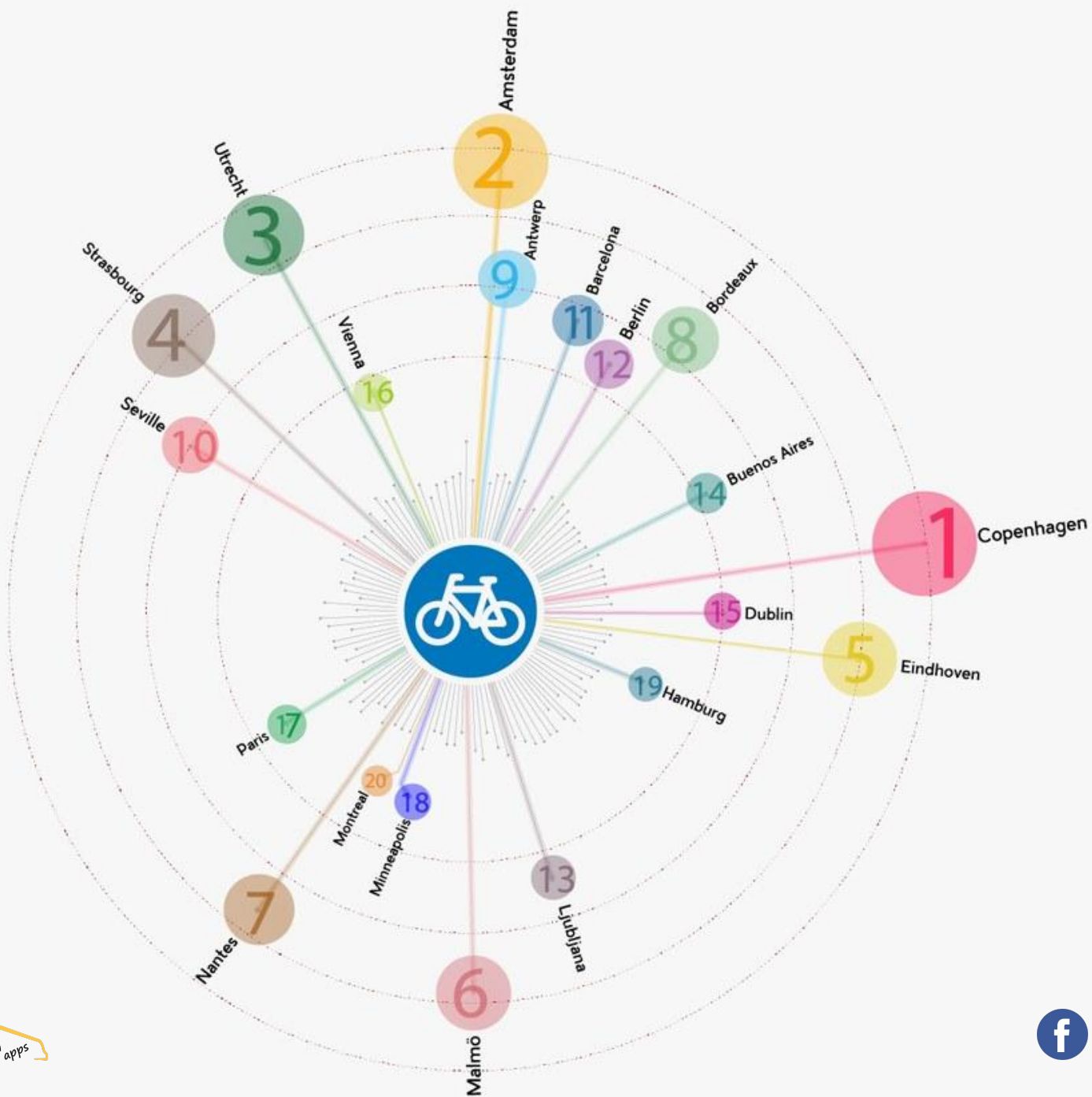
North America's scooter war started with Lime, Bird, and Spin competing for user attention. It ended with Uber buying out Jump and partnering with lime. The bike and scooter sharing industry in USA is estimated to be worth about $10 billion dollars in another 7 years.

South America is rapidly adopting e bikes for short distances. This region is still developing it's micromobilty network grid, especially in Sao Paulo, Brazil. Their largest e bike service Yellow merged with Grin in Mexico and operates more than 1.5 million fleet in South America.

Europe is no stranger to e bikes, as European cities tops the list of cycle friendliness. Greener alternatives are encouraged and as cities are planning to ban gasoline and diesel fueled vehicles, battery powered mobility will win the game of transportation in the long term. American scooter companies including Uber see the European market as a potential one for investment.

Below is a diagram of the most cycle friendly cities around the world.

Amsterdam
2

Utrecht
3

Strasbourg
4

Antwerp
9

Barcelona
11

Berlin
12

Bordeaux
8

Vienna
16

Seville
10

Buenos Aires
14

Copenhagen
1

Dublin
15

Eindhoven
5

Paris
17

Hamburg
19

Montreal
20

Minneapolis
18

Ljubljana
13

Nantes
7

Malmö
6

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Business Scope

The E bike industry's untapped potential is tremendous. With the right strategy and development partner, investing in this growing market can return good revenues. As we already discussed, e bikes have already entered several cities throughout the world. Who are the biggest players out there?

Jump: In 2018 the social bicycles company entered into a pilot programme with Uber, allowing users to rent e bikes from their app.

By October 2018, Jump bikes were available for rent across 13 US cities. They upgraded their vehicles with smart tech features like front computer, changeable battery, and better electric assist.

Motivate: In the same year Uber bought Jump, arguably their biggest rival Lyft bought Motivate. Their bike rental app runs in 9 cities across the USA under various government and private systems. Known as "North America's bike share leader," Motivate has completed more than 50 million trips in 2018.

Ofo: This dockless bike sharing company based in China's Beijing was founded in 2014 and was operating in 250 cities in just 3 years, boasting around 67 million active users. Funded by e commerce giant Alibaba, ofo eventually expanded their services on a global scale.

Yellow: based in Sao Paulo, Brazil, Yellow is a dockless bike and scooter sharing service that raised one of the largest series A financings in South American history - $63M. They recently merged with Grin, an e-scooter startup based in Mexico City and the two are rebranding as Grow Mobility. Today, Grow Mobility operates more than 100,000 e-scooters and 35,000 bicycles across South America, and plans to double its fleet.

Location is one of the most important factors contributing to your app's success. Launching a business in a saturated market is not a good idea and your business will struggle to gain a large user base. Where can you launch your bike sharing business?

- Inside a large Apartment Complex where it is difficult to walk from point A to B.

- Locations where first and last mile transportation is not available.

- Near a tourist attraction like a lake or park

- In any locality where public transport is scarce.

- In an Urban locality where bike sharing system is not present.

- In suburban regions for going to school.

- Near hilly regions with rugged slopes where regular bikes are hard to drive.

Challenges And Solutions

The micromobilty industry, like all the other ones has its own set of problems. But don't let this discourage you, cause you know - where there is a will, there's a way. Working with app based startups and billion dollar companies for Almost a decade, we have the right solutions to any challenge.

Challenge 1: Parking

With the rise in popularity shared mobility, these shared vehicles being parked on the subways has stirred up quite the controversy. Pedestrians in several U.S cities are speaking up against this visual pollution across the city's footpaths.

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E Bikes blocking footpath in Shanghai

qz.com

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There are more than one solution to this, and few cities are already implementing these:

- Dedicated parking slots: in order to make space for pedestrians, some cities are carving out spaces with paints for dockless parking. App based bike sharing companies could also help their users navigate to these slots.

- Swiss bike sharing company Smide has build charging docks throughout the city, an example that can be followed and implemented by bike sharing rental companies.

Challenge 2: Knowing the network system

The network system or network effect is essentially the positive or negative impact an additional user has on your app. In order to gain new users and eventually expand your app's services to other cities, there are a few steps proven to be effective.

- Reduce barriers to login/registration

- Provide sign up incentives and coupons on sharing

- Make your app easily shareable

- You can start by launching in a smaller market initially before expanding to larger to larger locations. This will also help you understand the market and improve your app with help from user feedback.

Challenge 3: Stealing and vandalism

E Scooter and e bike sharing companies all over the globe has faced losses due to theft, vandalism, and mishandling. These can be easily prevented with effective measures by the company. Some of these are:

- **Anti theft locks** like smart lock hardwares sold by individual dealers or cable locks are a great way to tackle this issue.

- **Anti-theft alarms** protect your vehicle assets from theft and vandalism with this mechanism. The alarm goes off if the scooter if any unauthorised action is detected.

- **GPS**: Used to locate the scooter in case of theft and keeping track of fleet by the web admin.

- **Self vandalism:** A sensor used for collecting data on damage and overall health of the scooter.

- **Penalty** is an effective way to crack down on vandalism. Dublinbikes, a highly successful bike sharing system in Ireland requires their users to return the bike bike within 24 hours or face penal charges.

How Apps Spike Your Profits

Business owners are rapidly shifting the availability of their services online which makes sense given the immense benefits online platforms provide. How can an app solution help your e bike rental business?

Improved Visibility: About 97% of all customers look up a local business online. If you index your app on the popular platforms, users will find the application when they look bike rental services. Since everyone today has access to the internet, it is more likely to be visible to users compared to non indexed services.

You can set up a website for a small investment, or a blog for free.

Enhanced Accessibility: Carrying a device around is undoubtedly much more feasible and easier for the user to interact with the bike service and functions. Smartphones are easily carried around, which makes accessing your product's services hassle free.

Beat Competition: If your competitors are offering a solution that your business is not, your users are likely to abandon you for the competitor, and with lesser number of users, eventually you will be wiped out of the market! We recommend buying a pre build app solution for your business.

Build Your Brand: Brand building is an essential strategy for growing your business, it helps service providers gain the trust of their customers. It is a well known fact that customers will opt for big, popular names over local ones. How does an app help you grow your brand?

As stated before, the vast majority of customers look up a service they are looking for in an online platform. Users will install your bike rental software if it shows up in a Google search. Downloading is the first step towards building a brand. If the customers are satisfied, they will refer to other riders and thus help you expand your solution to multiple cities.

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Easy Fleet Management: If you want to upgrade your bike sharing business with reliable technology, a mobile app solution is the smartest option.

Any vehicle rental service needs substantial fleet maintenance and management for its automobile assets. Manual monitoring is tremendously challenging and expensive.

The admin panel of your mobile app makes the entire task smooth, uncomplicated, and effortless. With smart monitoring hardware that collects data on location, attempt at stealing, battery levels, and other physical damage, you get full control of your fleet.

Advanced User Experience: An app will allow users to report damage, park it and use the in-build GPS navigation to walk to the nearest bike station and complete the journey. For any other issues, they can contact customer care and solve it instantly. A good experience equals to higher customer retention rate.

Improve Your Rental Services: A mobile solution is the perfect tool for improving the services provided and serve customers better. With an app, you can easily collect user feedback, work on the complaints, and other issues. This will give you an idea of the areas that needs improvement. The result? A product with improved stability, amazing experiences, and enhanced overall build quality.

Business Expansion Analysis: Increase your profits, expand your business, and create a strategy for sustainable growth of your business with an app.

The web admin panel is more than just a control center for your business, it is a powerful tool that generates useful data and statistics. This helps you to work up an estimate of the locations with higher demand, features that users love and issues with the overall service. When you plan to expand your business to other cities, this data will prove to be remarkably useful.

Hassle Free Payment: The world is moving towards a future of cashless transactions. Business owners are upgrading payment options to a smarter and advanced one. Bike rental app services in the current market have auto payment deduction systems in their solutions. Most pre build solutions come with payment gateway integration, so will not burn a large hole in your pocket.

How App Solutions Work

E bike apps functions similar to scooter sharing apps. Micromobilty solutions have 2 panels - one each for the rider and admin. The user flow journey looks like this:

1. Login using OTP: Easy onboarding using mobile number.

2. Locate nearest ride: Allow the app to auto detect your location and show the nearest station.

3. Choose your vehicle: Select the type of bike or scooter you want.

4. Unlock vehicle: Use QR scanner in app to unlock and start riding.

5. Pay: Secured online payment gateways like Stripe, Paypal, and CCAvenue for easy payment.

6. Complete ride: End trip and park the vehicle to the nearest station.
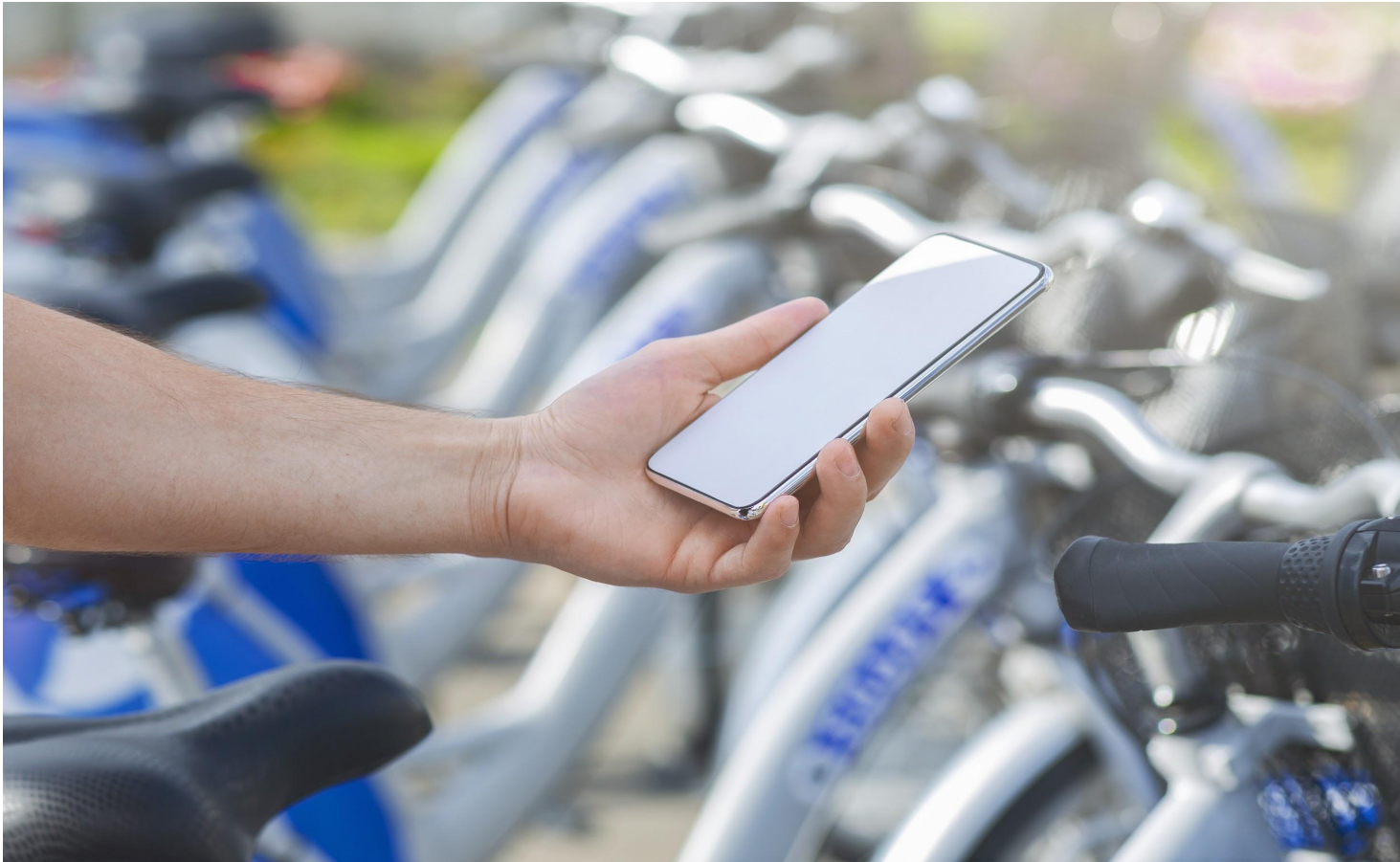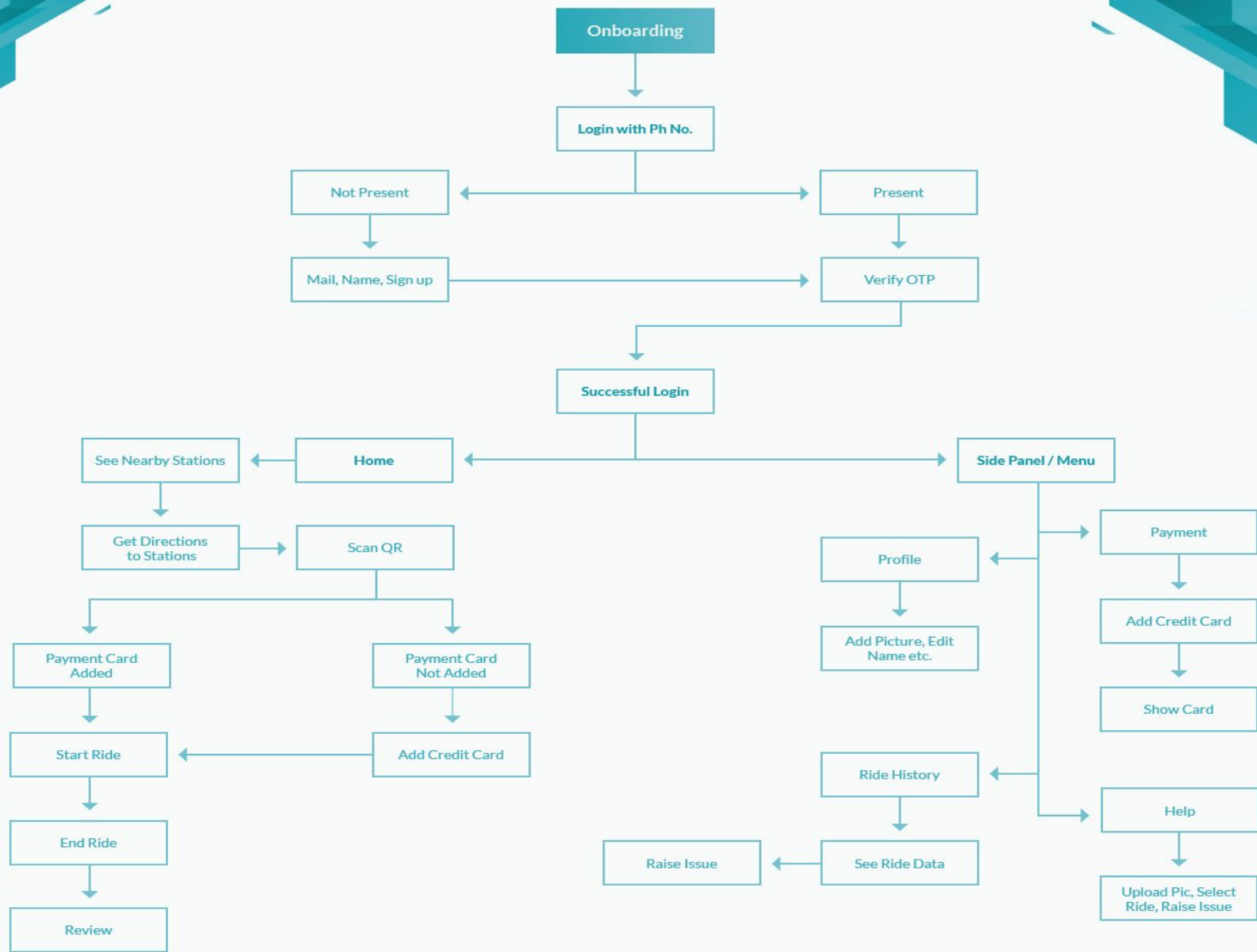
App Solution Cost Estimate

The final price of your eBike app depends on a number of factors that include the features, development partner, technology used, and time taken to build it. To get an overview of the features, see this list.

User app features

- Login with OTP or social media
- Choose type of bike
- Real time navigation
- Scan barcode on e bike

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- Seamless online payment

- Unlock bike and start riding

- End trip and park in closest station

Web admin features

- Secured encrypted login

- Database on cloud

- Real time bike tracking

- Revenue generation analysis

- Vehicle database management

- Complaint and feedback management

You can add more features as per your business needs. The cost estimate for a bike sharing app is around $15000 to $20000. Getting a white label customizable solution can drastically reduce your expenses.

Marketing Tricks You Should Know

You have created the application and the fleet is ready to be deployed. But how will you reach out to your customers? Or create a trusted customer base?

"Make your marketing so useful, people would pay for it" - *Jay Baer*

Nothing works out without a proper plan. So you need to work on your app launch strategy in a systematic manner.

So what a basic checklist of your app pre launch marketing plan must have? We have discussed them in little details, hope this helps you to guide throughout the product development journey. It worked for most of our clients (both startups and mid-size companies).

Competitor analysis is a crucial step not just for application based business but any industry you can think of. This does not mean blindly following their models and features.

- Snoop around their reviews and find out why users love it. Include those features in your own app.

- Click on the negative reviews and try to find out in which areas the users are facing problems. Apart from the big names, don't forget to look up the failures as well. You can learn plenty from their failures. So do make a note of all of it and create a working plan before developing your app.

User personas helps you understand your customers, so spend as much time as required to make sure that your product fulfills the requirements of your customers well. You must answer certain questions before spending money on development of your app, like for example;

- Who are your target customers?

- What language do they speak?

- Why would they download your app?

- What features will solve their pain points?

- Why did they uninstall a competitor's app?

Indexing your app plays a huge role in terms of visibility. Indexing means connecting your app to your website or social media accounts. This helps your app it will come on Google's search results and ultimately increase downloads. Create an SEO optimised website for your app, a landing page to connect with your users and keep them updated. Social media accounts are a free way of popularising your product.

medium.com
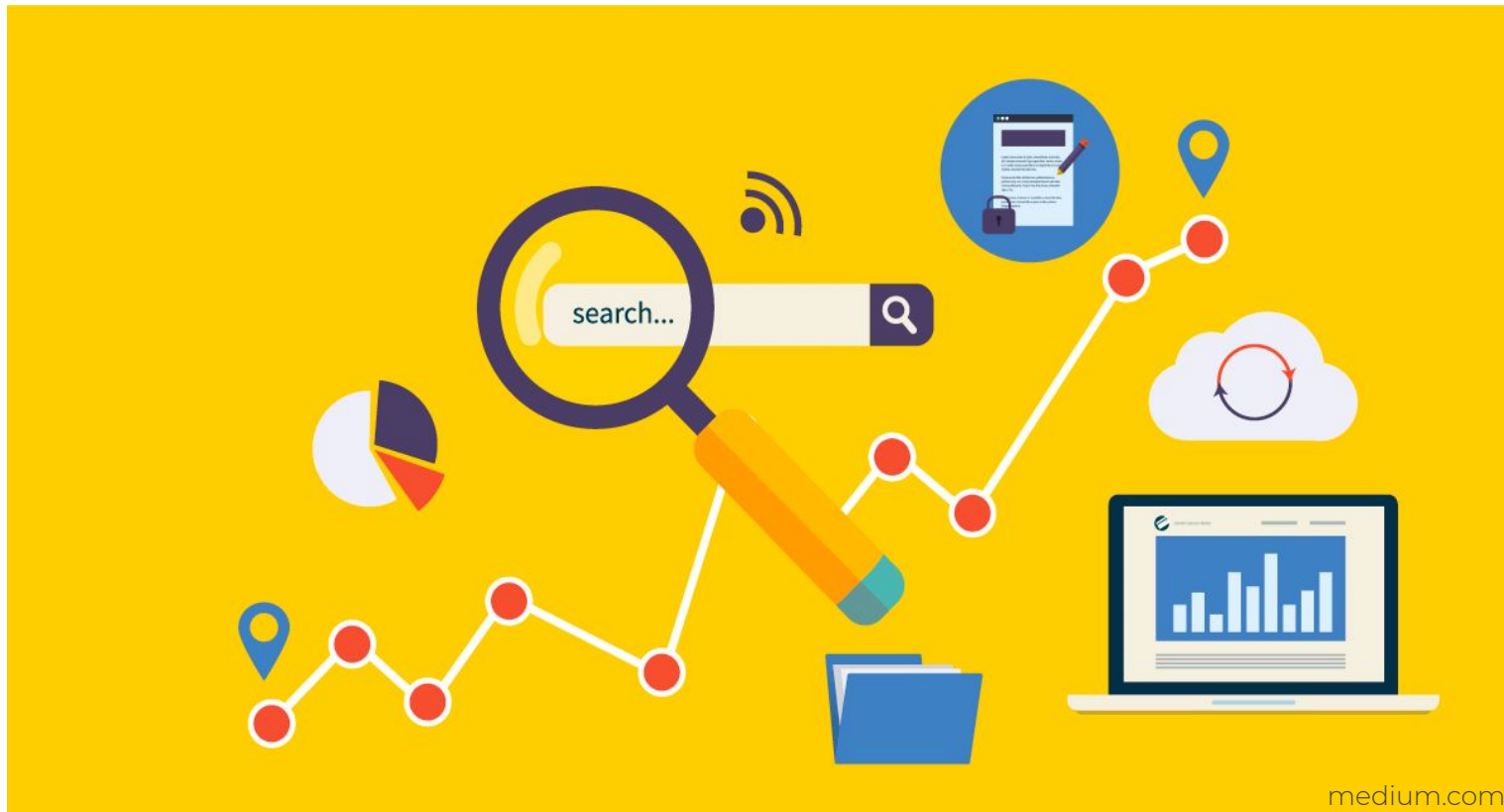
Reaching out is an excellent method of getting your app to the right audience. Contact influencers, publications, and other media for backlinks, reviews, and featuring. Talk about your product in the forums of micro mobility industry.

App store optimization cannot be missed out, and we mean it. If you want more users to download your app, there are a few things that needs to be taken care of, like:

- Put the keyword in the title and description.

- Write a good, engaging description. We can even write one for you!

- Use screenshot and videos from your app.

- Keep updating your software with inputs from users.

- Size matters: make sure your app's size not too big. It discourages users from downloading.

- Did you know that better icon can boost your downloads up to 560%? Put as much time and effort required to make an icon that is catchy. Try out a new one if something doesn't work.

Finding The Right App Development Partner

There are too many companies out there promising to build the most amazing product in the market. It is perfectly reasonable to believe that only a handful will deliver a product that is flawless. But how do you know whom to hire?

We have a list of to do's for you to make your job a little easier. Just follow these and you are good to go.

✔️ Ask feedback from people who hired someone to build a mobile app.

✔️ Consider the mobile app developer's expertise and experience in the relevant industry before you hire.

✔️ Snoop around and peep into their website & client testimonials. Do a research of your own to find out if those are real.

✔️ Before you hire mobile app developers, make a note of their payment methods & costs. Ask what their AMC (annual maintenance charges) are.

✔️ Make sure that they deliver you the app after relevant testing.

✔️ If they have developed a similar app, download it from the app store and check out the stability and overall quality.

✔️ Don't be a cheapskate, even if the budget is an issue for you. Many companies have suffered the consequences of choosing money over quality.

Technology Stack

The technology that goes into creating your app is responsible for its functional stability and the overall quality.

Compromising on technology will result in a poor use experience as a result of which your business will suffer.

You should use the most popular, latest, and strategically accurate technology to power your business. What tech stack is used for building an e bike?

Here is a table for you to understand the backbone of your business better.

Technology stack for building an E bike app like Jump:

Twilio, SNS SMS gateway	Stripe/ Paypal/ CCAvenue Payment gateway	G maps Routing and navigation	Firebase Analytics/ crashlytics Analytics	Smart locks iOT integration
MQTT Real time messaging	Atlas, RDS Database	AWS EC2 Web server	AWS S3 Media server	APNS/ FCM Push notifications

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Post Launch

"The purpose of a business is to create a customer who creates customers." – Shiv Singh

Customer retention and attraction is no easy task but no rocket science either. With time and strategy, your business has the potential to reach unimaginable heights. So post launch, what needs to be taken care of?

Communication is key: users are likely to keep using your app's services if they feel connected to the product. It is therefore vital to establish a two way communication system to ensures that your user does not switch to a competitor.

Everyone wants to pay less: Ace the game of customer retention with occasional discounts, coupons, and free first trips on signups.

Listen to improve: Listen to your user's complaints and feedbacks. Use sentiment analysis tools to get a general idea of your product's issues. Work on those to improve the overall quality of your app.

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Have an app idea? Get in touch with our experts.

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