



SMART BICYCLE

Get moving with our smart vehicle for a smooth, effortless ride

π tenn



SMART, SUSTAINABLE AND SAFE

We committed to continuous safety checks and balances for the safety of our environment and our riders and we are proud to express our commitment through our advanced high visibility and light weight non-motorised dock-less smart vehicle with zero toxicity or toxic materials and components.



SMART BICYCLE

#Dockless Pedal Powered Bicycle



FIND AN AVAILABLE
THTENN BIKE
NEAR YOU WITH
OUR APP

With our app, finding an available smart bicycle near you has never been easier. Explore your city effortlessly by locating, reserving, and unlocking a smart bicycle in just a few taps, all from the convenience of your phone.

OUR MISSION

Our aim is to converge a sustainable integrated data system with thtenn bike to encourage more and more people and companies to choose cycling as a more efficient, green, fun, safe, and easy way to commute, connect, exercise and deliver products and services.

We also want to make cycling the most environmentally sustainable way of commute, exercise, network and deliver product and services; making London the most eco-friendly city in the world.



OUR PRODUCT

While the general micro-mobility solutions reduce air and noise pollution, and ease traffic congestion across the board, Thtenn App optimises eco-efficiency with its pedal propelled, advanced, non-motorised, dual-security IoT, high visibility and low environmental impact smart bicycle. It is integrated with a system which creates easy access, safety and security for all users.

Thtenn's core goal is to contribute to a sustainable environment through its affordable, safe, zero toxicity, low environmental impact and environmentally friendly shared micro-mobility services to enhance user's fitness, convenience and sense of community awareness.

Thtenn uses GPS system to connect users to available vehicles, other commercial products and services through its geolocation system, making it easy for users to find vehicles, products and services nearby.

Thtenn is designed for a sustainable, affordable and a more environmentally friendly mobility solution for a greener and safer environment.



MARKET TRENDS



In the past couple of years, especially throughout the pandemic, there has been an increased and expected surge in demand for integrated Systems for micro-mobility users, and the market driving. Factors are:

- Application area of navigation system and services.
- Demand for connectivity, safety and efficiency.
- Changed and improved lifestyles globally.
- The growing need for sustainable environment.
- Increased purchasing power of consumers/end users.
- The growing demand for efficiency, accuracy, reliability, and precision in positioning, along with timely measurements, feedback and analysis of products and services.
- Required development in road connectivity and infrastructure for micro-mobility users due to the need for a sustainable, safe and greener environment.





OUR VEHICLE

Our Vehicles are reliable , eco-friendly and designed for your ultimate comfort and convenience

OUR VEHICLE HEALTH CHECKS



THE HANDLEBAR & STEM CHECK

Before you begin your ride, make sure the handlebar is stable and tight. Please check if it is aligned with the front wheel, to better keep the balance when riding. If not, please report it to us.

GRIP & BRAKE CHECK

Grip: Please keep both hands on each side of the grip when riding as riding with one hand is not considered as safe riding and may cause accident. Please Check for cracks, cuts or signs of wear for a better grip.





SEAT POST AND CLAMP ADJUSTMENT

Seat post is fitted with a rivet to prevent the pulling out from the frame. With height indicator, please adjust the seat post height to suit your height before riding.

SADDLE TIGHTNESS CHECK

Saddle: The saddle is fitted with a handle, it is easy to hold and lift up the whole smart bicycle. Before riding, please check the tightness of the saddle to avoid rotation. If the saddle is loose and rotates after tightening



FRONT HUB INSPECTION

Front Hub is Alloy dynamo hub with integrated drum brake, visually check for cracks, cuts or signs of wear. Please also listen for abnormal sound as this may indicate loose components.

CHAIN COVER AND CRANK SET CHECK

The Chain cover protects the chain from dust and rain and needs maintenance from time to time. Please visually check for sound and cracks and if you are not sure of its safe use, please report it to us. The Chain cover protects the chain from dust and rain and needs maintenance from time to time.





CHAIN TENSION AND PEDAL CHECK

Please visually check whether the tension is correct. Its maximum play allowed when moving the chain is 1cm or half an inch in either direction. This also requires maintenance from time and your visual check before riding will help keep it in good condition.



WHEEL REFLECTOR AND TIRE CHECK

The yellow coloured wheel reflector is installed in front and rear wheel of Our vehicle for visibility, Please visually check for cracks or any abnormality before riding. If not in a good working order, please report it to us.



PHONE HOLDER ADJUSTMENT CHECK

Please lift up the top of the phone holder to adjust the length of the smart phone holder before mounting your device.



SAFETY MEASURES

The front plastic basket cannot be used to take children onboard. User will need a specialized child seat typically mounted either on the front or the back of the vehicle.



MUDGUARD AND DRESS GUARD CHECK

The front plastic mudguard also serves as a dress guard which prevents long skirts, coats and other trailing clothes or luggage catching in the wheel or the gaps between the rim and the brakes.

FRONT DYNAMO LIGHT CHECK

The front dynamo light is charged by the dynamo hub and will turn on automatically when riding. Before riding, please visually check that the front dynamo light is in a good working order and without any damage.



4G IOT DEVICE AND ALARM CHECK

The 4G IoT device attached to the rear of the vehicle allows you to scan a QR code or the RFID card and unlock your vehicle. It is also fitted with an alarm system which prevents theft and unauthorized use.

REAR LED LIGHT CHECK

The rear LED light mounted on the rear side of the vehicle enhances visibility and guarantees safety when riding during night.



1.MARKET BACKGROUND

Market survey

Technology

Technological advancements are driving transportation market, especially micro-mobility market. For instance, the mobile devices with integration of route safety data, fitness, connectivity, interaction, efficiency and access to other user data with navigation systems, product and service delivery is a major innovation that captures all current and future market.

Innovation

100% of these innovative business strategies will be seen with Thtenn services and products delivery. The Internet of Things is a strategically important part of this evolving market and it will accelerate fast and drive both revenue and cost efficiencies for both end users and commercial platforms.

Market Needs

With this level of growth in the technology market and the need for efficiency, sustainability, greener environment, safety, connectivity and navigation; shared mobility services and cyclist navigation systems are widely being used by different industry sectors, especially the mobile application features market to reach potential customers and deliver products and services.

Internet of Things

The emergence of connected need for accurate and real time tracking, security, product and user analysis and convergence technology has led us to the development of an integrated system through sustainable use and growth of integrated navigation system. We are also developing a sustainable environment by supporting the advances towards low/zero-emission and environmentally sustainable outcomes like good air quality, public safety, low environmental impact micro-mobility vehicles and low noise pollution.

Navigation

The navigation system market is expected to register CAGR of at least 11.3% over the forecast period 2021 - 2026. (Mordor Intelligence, 2020) Owing to the increasing demand for real-time information, products and service delivery in a wide variety of applications ranging from micro-mobility hire or share services, navigation and fitness, to the essential products and service delivery sector.

There is also an increasing adoption of an integrated navigation system globally in order to achieve a sustainable environment.

Optimization

With the advancement in technology, these systems are projected to transform and offer multiple services and facilities for an optimised product service, thereby creating a considerable service ecosystem around shared transportation and navigation technologies.

Navigation systems naturally provide users with the ability to detect, locate, and characterise interference sources but today many companies are trying to provide a wide range of products and services to cater to other needs of various end-users.

Governments are also increasingly realising the potential of indigenous satellite systems and investing in these technologies for economic growth.

Overall, the UK micro-mobility market is expected to grow significantly, with IMARC Group predicting a compound annual growth rate (CAGR) of 12.90% from 2025 to 2033, reaching USD 6.20 billion by 2033 and the global micro-mobility market predicted to reach between £235 billion and £395 billion by 2030, with Europe being one of the largest markets alongside China and the United States.





2. CYCLING INDUSTRY

Cycling in the UK has increased by as much as 200% during the coronavirus lockdown. Secretary for Transport Grant Shapps announced in Thursday's daily coronavirus briefing that levels of cycling in the UK had soared by as much as 200% on weekends with a 100% increase on weekdays. (Cyclist, 2020).

Cycling rates are highest amongst young professional men, women, students and business in parcels, food, services and essentials delivery sector.

Cycling is associated with fitness, commuting, leisure, and Olympics competition; food, commodities and service deliveries thus, unleashing a wide range of users.

Technology is an ever-present in all aspects of modern life, and to enhance sustainable environment concept, cycling will need to be included for environmental improvement, reduced carbon emission and congestion, zero emission plans and improved public safety, spaces and architectural structures.

Bike's Retail sales and hire services have grown by more than 70% in the last 8 years with Britons spending more on bikes. British Cycling has reported that its membership has increased 16% in the past 8 years and the 2020 UK budget sets £2b to improve cyclist's safety in London. (Herman, Martyn, 2020)

This is currently explored also in E-Bikes E-scooter hiring services in London and surrounding cities.

E-Bike and E-Scooter Industry

E-bikes and electric scooters have become a common sight in the UK, especially in major cities such as London. Whilst they can be purchased from a wide variety of online retailers, they are also more frequently becoming available in cycle stores across the UK which has been quick to jump on the fast-growing market.

Arising need for fuel-efficient vehicles, backed by increasing concerns over carbon and greenhouse gas emissions, is expected to drive the adoption of e-bikes e-scooter. Easy incorporation of efficiency, relatively economical maintenance costs, and low noise levels are also among the crucial factors pushing for a greener and environmentally sustainable means of transportation of people, products and services. The regional market is fuelled by the growing awareness among consumers to adopt clean energy transportation to curb vehicular emissions, rapid urbanisation, and the increasing affordability of e-scooters. (Grand View Research,2020). Additionally, research and development activities will continue to give this market a significant boost over the next decades. Increasing adoption of e-bikes and e-scooter sharing services in countries such as the UK, Spain, the U.S., Germany, and France has spurred the demand for battery-powered two-wheelers.



Companies such as Lime, Tier, Jump, and Voi Electric are offering e-bike and e-scooter sharing/hire services in London and surrounding cities. The penetration of these sharing services has witnessed an exponential adoption rate since 2016. Currently, more cities and various universities across the globe use e-bikes and e-scooter hire and sharing service.

Sustainability Needs

The need for sustainable urban mobility and modern transportation infrastructure is driving the transition from to electric modes of transport. E-bike and e-scooters are anticipated to have a positive influence on energy, security and air quality. Zero-emission initiative is significantly contributing to the reduction of the carbon emission gap. This, in turn, creates a highly conducive environment for a healthy community and economic growth. UK Government is faced with the need to re-structure the laws around e-bikes, e-scooters and how they are used in the UK and drafting policies to increase the penetration of electric/ motorised micro-mobility. Support in the form of research and development initiatives is also a prominent growth factor.

Major E-Bike and E-Scooter market challenges Survey

Fire Hazard

It is said that zero emission electric vehicles have reduced harmful vehicle emissions and has helped to clean up London's air and for this reason, London is filled with a high number of electric vehicles including motorised micro-mobility vehicles and charging station installation sites, sparking an alarming level of danger they pose to 8.866 million Londoners from an equivalent of 1-2 million potential Fire Hazards which may cause damage to properties and major injuries or death in worst cases.

Serious Incidents

There is an increasing number of incidents recorded with riders who are intoxicated or under the age of 17 in London and its surroundings, either due to speed, unqualified rider, or fire. Motorised micro-mobility (e-bike and e-scooters) accidents are increasing, and injuries from these vehicles can be serious.

Increased Nuisance

The surge in dock-less motorised micro-mobility vehicles like e-bikes and e-scooters have caused particular difficulties for vulnerable pedestrians, including those with visual or mobility impairment. Abandoned motorised micro-mobility vehicles on pavements have become an increasing nuisance for Londoners, with public call for stricter oversight gaining momentum in 2024/2025.

Road, Vehicle and Public Safety

The increasing popularity of motorised micro-mobility vehicles transforms the city life in London by offering fast and eco-friendly alternatives to cars and public transport, yet, the rising incidents linked to reckless riders, heavy vehicles and poorly regulated high-speed vehicle models pose serious risk to 8.866 million Londoners, with high profile cases like Ian Hislop's head injury highlighting the urgent need for stricter road and vehicle safety rules as London now seek more innovative and practical solution to tackling societal challenges from pollution and environmental safety to physical inactivity, obesity and economic struggles



Renewable Energy, Batteries and Infrastructural challenges

The need for robust energy storage, and the development of a comprehensive charging infrastructure are crucial hurdles. Additionally, the environmental impact of lithium-ion battery production and disposal, as well as the potential for safety issues with these batteries, need careful attention. Lithium-ion batteries, commonly used in e-bikes and e-scooters, require raw materials like lithium, cobalt, and nickel, which are sourced through mining. Mining these elements can be energy-intensive and environmentally disruptive. Improper disposal of lithium-ion batteries can also lead to hazardous chemical leaching into the environment. Advancements in battery recycling technologies are needed to reduce the environmental impact of e-bike and e-scooter batteries. Lithium-ion batteries can pose fire and explosion risks if they overheat, are damaged, or charged/discharged incorrectly. The development of a robust and widespread charging infrastructure like charging stations and the potential need for grid upgrades to handle increased electricity demand is essential for the widespread adoption of e-bikes and e-scooters. However, these developments in public spaces, residential areas, and workplaces, will also affect structural integrity.

Critical Material Recycling Crisis

E-bikes and E-scooter batteries including other strategic materials pose serious recycling issues including fire risk from lithium-ion batteries, inefficient recycling techniques and the need for better infrastructure and regulations to deal with the rapid growth of battery wastes especially from all motorised vehicles. Every unsafe and unmonitored disposal of lithium-ion battery is a potential fire in recycling centres, refuse collection vehicles and waste management facilities. In recent months, battery related fires with over 1200 fire incidents were recorded in the waste systems. Mechanical processes in the recycling plants like shredders and trommel screens may also cause damage to lithium batteries, leading to potential fire. Existing recycling technique/ method like pyrometallurgical recycling method only recover just about 50% from wastes leaving the other half unrecoverable causing environmental issues and landfills. Highly toxic materials in electrolyte and binders may react and form hydrogen fluoride, cobalt and nickel compounds that may cause respiratory issues. The storage, transportation and labor cost per unit is significantly high and considering the environmental impact, the intensive labor also pose a risk to workers handling hazardous materials.

The UK currently lacks sufficient infrastructure and the capacity to manage the high volume of battery wastes abandoned especially from motorised vehicles.

Other potentially cheaper battery options may not be economically viable for motorised vehicles. There is an urgent need for regulatory bodies to enforce the need for safer storages and transportation; clarity on battery ownership and responsibilities, consumer complete awareness on environmental and health dangers surrounding the high volume of strategic materials like lithium-ion batteries.



3.OUR GOALS FOR THE ENVIRONMENT

We aim to facilitate user; commercial and regulatory market demands in one system to create a market place for all users (Everything Cycling).

This development takes our ideas into device and system integration which allows us to:

- Improve the environment with Our ultra-low/zero environmental impact product to reduce toxicity, boost environmental safety and improve spaces and architectural integrity in London.
- Prioritise and promote cycling as the ultimate solution to our society's challenges from pollution to economy.
- Create a sense of environmental awareness while reducing carbon footprint, keeping the environment clean and making London a leading eco-friendly city.



Product Functionality

Our products/services are focused on non-motorised shared vehicle Hire and micro-mobility route navigation, security, user fitness data, networking, and product/service delivery. We are also developing a sustainable environment by supporting the advances towards low/zero emission and environmentally sustainable outcomes like good air quality, public safety, low environmental impact micro-mobility vehicles and low noise pollution.

We major in:

Cycling Route Optimisation

Our system is focused on enhanced cycling route optimisation, navigation, safety, user fitness, networking, and commercial products/services delivery.

Our route optimisation system uses GPS system to determine vehicle locations, users' location for product service access, plot paths i.e. Safe, easy, frequently used, shared, quiet and crowded routes, where users select the preferred vehicle, route and follow through turn-by-turn instructions to reach their destination.

Data collection

Our system uses basic navigation information to create awareness. All collected data enhances safety, security, interaction, and efficiency for product/service delivery whilst protecting user data and general integrity of the environment.

Users may consent or decline to share their information, analysis, feedback and messages with integrated chosen vendors for efficient product/service delivery and share their experiences with their connection whilst they are protected from unwanted interaction.

Our system will not share user information with anyone outside users' connection and specified interests.

Crowd sourcing

Our interactive system allow users to share crowd sources and personal information with their contacts in order to build a community with other users including commercial users for efficient product/service delivery.

Value exchange

Our system ties user/consumer to a range of products, services and resourceful systems through user lifestyle and needs. This is acceptable in the market due to new world order, regulations, conformity, human survival and environmental sustainability.

Our technology convergence system facilitates product/service user demand and commercial supply through sustainable use to enhance data management, product/service cost, efficiency and delivery.

Performance and Efficiency

Our continuous development and innovative strategy introduce new and updated range of user interactive, efficient, and sustainably functional product/services into diverse markets and will enhance all existing systems and service markets.

Our system builds people, places, products and service awareness and manages basic/enhanced user data with common values in real time to improve user performance, and experience.

User Experience and safety

Our technology convergence and user focused system optimises cycling routes, navigation, safety, value exchange and sustainable environment to create an experience and give a sense of safety and security to all users.

Facility analysis and Results

Our consolidated solution system facilitates user research, analysis and feedback for verification and updates published user information progressively for efficient product/service delivery.

Product and service delivery

Our application system brings product/service demand and supply together through sustainable use. This means that our convergence technology facilitates all user demands and commercial market supply into one system and creates a market place for all users. (Everything Cycling).

Advertisement

We provide advertisement platform for networking, communication and engagement between users and all local and web businesses, for awareness, product/service knowledge and interaction to improve efficient user product/service delivery.

We run campaigns for security, route safety, cycling regulation, governance and environmentally sustainable city information for cycling social groups, local authorities and government agencies.

THTENN-TEAM also attend social and interactive cycling events and activities organised, to engage with attendees and potential product users to build awareness.

Concierge and Security

Our technology convergence and user focused system protects and restricts user data to users' contacts and only shares route optimisation information anonymously with other users to give a sense safety and security to all users.

Commercial users may share their location, status and other relevant information with users for efficient product /service delivery. Vendors may also interact with users on their customised system tailored to THTENN specification and user will be notified with any updates.

Users may consent or decline to share their information and experiences with other users through a direct message or publish if they choose.

Our system will not share user information with anyone outside users' connection and specified interests.

By meeting all user needs (individual and commercial) in every aspect, we obtain more users and expand the demand for economic growth.



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4.MARKET TARGET

Our Product users are:

- Every day cyclists and electric scooter users.
- Commuters.
- Fitness cyclists.
- Sports Enthusiasts.
- Bike hire service users.
- Food delivery platforms.
- Parcel and mail delivery platforms.
- The Metropolitan Police.



We primarily focus on the cycling user market which includes navigation, security, user fitness, networking, and other product/service efficient delivery and interaction between vendors and customers. We consider the increasing user demand for wireless connectivity, reliability, vendor interaction and access to products and services through convergence technology.

We also consider the increasing concerns over carbon and greenhouse gas emissions and growing product safety awareness among consumers to adopt clean energy transportation; rapid urbanisation and the increasing affordability, swift adoption of bike and E-scooter-sharing market; Governments policies to increase the penetration of smart bike hire with the responsibility to provide a safer environment through regulation and policing.

We focus on technology convergence to facilitate all user demands, commercial and regulatory market into one system to create a market place for all users - Everything Cycling

Target location

Bike's Retail sales and hire services have grown by more than 80% in the last 8 years. Britons have been spending more on bikes and pushing the hire market. British Cycling has reported that its membership has increased by 16% in the past 8 years and the UK budget sets £100 million boost in addition to the 2020 £2b budget to improve cyclist's safety in London.

London is the best city to start encouraging more and more people and companies to choose smart cycling as a more efficient, green, fun, safe, and easy way to commute, connect, exercise and deliver products and services.

London has seen the biggest boom with over 110% increase since 2000 in cycling only and most recent exploration of the e-bike and e-scooter market by major market leading companies. Our prime location is London where all our service facilities are set up for efficiency, interaction, maintenance and growth

5.COMPETITOR ANALYSIS

Dockless Vehicle Market

Major dockless micro-mobility companies around the world offer app-accessed dockless e-bike and e-scooters in over 200 cities.

They create a carbon-free transportation future with a net zero target in mind and promoting green travel and reducing emissions.

They partner with cities to deploy e-vehicles and services trips, offering convenience, reliable and somewhat affordable rentals to users.

Some competitors also introduce interchangeable batteries for their bikes and scooters, streamlining operations and reducing the need to charge vehicles in a warehouse.

Stationed Vehicle Market

Stationed vehicle companies offer self-service bike sharing scheme as a convenient and affordable/cost effective way to travel short distances.

Self-service in this context means users will need to locate a docking station, take a bike, use it and return to any of the strategically located docking stations after use, provided there are docking spaces at the chosen docking station.

FREQUENTLY ASKED QUESTIONS

What is Thtenn, and what makes it different from other bike-share or e-bike schemes?

Thtenn is a London-based micro-mobility company that offers smart, solar-operated pedal bikes. Unlike e-bikes, our bikes do not rely on lithium batteries or external charging infrastructure. Instead, they're powered by integrated solar technology, making them a more eco-friendly and maintenance-light alternative.

How do the solar-powered bikes actually work?

Our bikes are pedal-powered with solar energy supporting smart features like route navigation, real-time connectivity, safety systems, and user tracking. The solar panels power the onboard tech without affecting pedaling resistance.

What's the 2/2 logistics strategy?

This is our density model — we deploy 2 bikes every 200 yards in the operating zone to ensure accessibility, reduce congestion, and create visible, consistent infrastructure for users.

How do you ensure the bikes are safe and well-maintained?

Each bike is built with durable, tamper-resistant components and GPS tracking. Regular maintenance schedules are embedded into our tech system, allowing our operations team to receive alerts for issues and coordinate servicing quickly.

What data do you collect and how is it used?

We collect anonymised data on bike usage, routes, parking patterns, and system performance. This helps local councils make informed decisions about urban planning, sustainability reporting, and transport development.

Are the bikes insured?

We are in the process of securing fleet insurance while also incorporating user safety waivers. This dual approach ensures both operational protection and user accountability.

What environmental benefits do Thtenn bikes offer?

Thtenn helps reduce urban emissions, encourages green commuting, and eliminates battery waste, aligning with London's clean air and climate action plans.

What community benefits can councils expect?

Our initiative promotes healthy lifestyles, increases foot traffic to local areas, engages residents in sustainable behaviour, and can create local job opportunities in bike management and servicing.

How are you funded?

We are currently funded through a mix of private investment and strategic partnerships, with plans to expand funding through grants, public-private partnerships, and commercial vendors.

Do users need an app or membership to use the bikes?

Yes. Users can access the bikes via the Thtenn app, which offers real-time navigation, fitness data, and unlock features. Membership options will include pay-as-you-go, subscriptions, and sponsored free ride campaigns.

How do you prevent theft or misuse?

Each bike is equipped with GPS, smart locks, and movement alerts. If tampering or unauthorised movement is detected, our operations team is notified immediately.

What support do you need from councils or partners?

We typically require space for designated parking, data collaboration where appropriate, and council endorsement to support rollouts and local community awareness.

Is Thtenn open to partnerships or sponsorships?

Yes, we welcome collaborations with local businesses, health organisations, and green tech innovators who share our vision for a more sustainable, connected city.

Can the system be adapted for other cities?

Absolutely. Our infrastructure is scalable and customisable to different urban layouts, population densities, and transportation needs.



Bodley Quarter.2A, Hanover Way.
Windsor. SL4 5NL



enquiries@thtenn.com



+447930520110

Download The App

Our consolidated solution system facilitates user research, analysis and feedback for verification and updates.



App Store



Play Store



Available 24 /7 to answer your queries