Concept Paper

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Green Business

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Executive Summary

What is U-TURN?

Imagine you can easily get from A to B at any time.
Fast, inexpensive and ecological. According to your preferences.
Without having to book and pay for everything individually on countless apps.
Every journey - one app!

U-TURN is a modern mobility platform and bundles the demand for mobility into one offer for mobility service providers.

U-TURN is an open community. By involving users, providers and cities, ambitious goals can also be achieved. Together we develop the mobility of the future.

Our goal is intermodal routing, ticketing and payment - seamlessly and globally.

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1. Vision

What does U-TURN want?

U-TURN aims for an about-face ("u- turn") in mobility behaviour.
The current dominance of privately owned cars makes neither ecological nor economic sense. We want to establish the principle of use instead of ownership.

Our goal is to create an offer that is so much better that nobody wants to own a private car anymore. This will generate demand for differentiated mobility services worldwide.

Within five years, we can develop attractive alternatives for up to 80% of the population. By selecting and combining suitable options, they can…

GREENER - save at least 50% of CO2 emissions,
CHEAPER - save at least 50% of the costs,
FASTER - be faster and more comfortable.

Through One-Click-Planning (OCP) and One-Click-Ticketing (OCT) it will be easier and cheaper to go with U-TURN than with your own car.

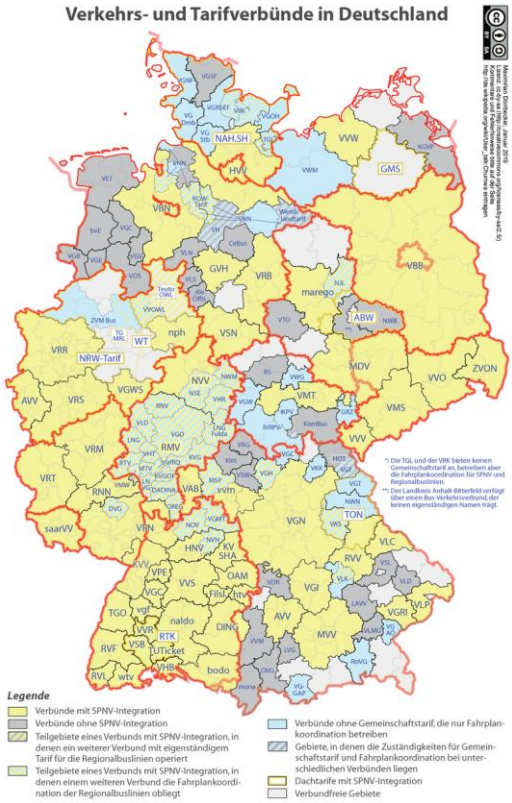
2. Status Quo

2.1 Disabler

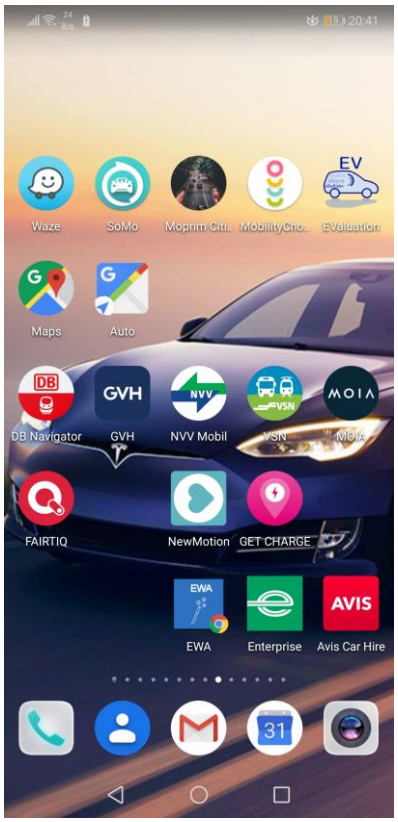
The market is fragmented regionally, by transport associations and tariff areas of states, countries, regions, municipalities and horizontally by public and various private providers, such as taxis, rental cars, sharing providers and many more.

- Internationally, currency and language barriers make it difficult to access a wide variety of tariff models.
- Timetables and routes are not sufficiently adapted to connection or capacity utilisation.
- Missing multimodal data leads to incomplete cross-system evaluation.
- The traffic solutions airplane, ship, train, bus, car, bicycle are not linked.
- Digital applications exist only as island systems and repeat analog problems in the digital context.

To illustrate this, a graph shows the transport associations in Germany and a small selection from the colorful bouquet of Mobility Apps:



Source: Maximiliam Dörrbecker



Source: Peter Löck

2.2 Enabler

Digital transformation achieves mobility.
Open Data Public Transport and NeTEx make data accessible to the public sector in the EU via networks, travel times and tariffs. Interfaces to the private sector are standardised in accordance with EU Regulation 2017/1926.
On this basis, a uniform data structure can be developed for all modes of transport.

The majority of the population carries a digital device such as a smartphone or Smartwatch that can be used for tracking and ticketing.

Digital payment providers enable billing in real time.

In summary, digital services have penetrated private areas of life and are taken for granted.

The question of how personal data can be protected from unwanted access has been open so far. Individual movement patterns in particular are in need of protection in this respect.
With the development of blockchain technology, or more broadly Distributed Ledger Technology (DLT), it is now possible to securely assign personal properties to a fixed identity without third party access and to have them managed only by the owner. The user determines exactly who is allowed to know what about him and does not release the entire data set, but only data that is relevant for the process. For example, the location for the route or the name for the ticket or payment data for billing.

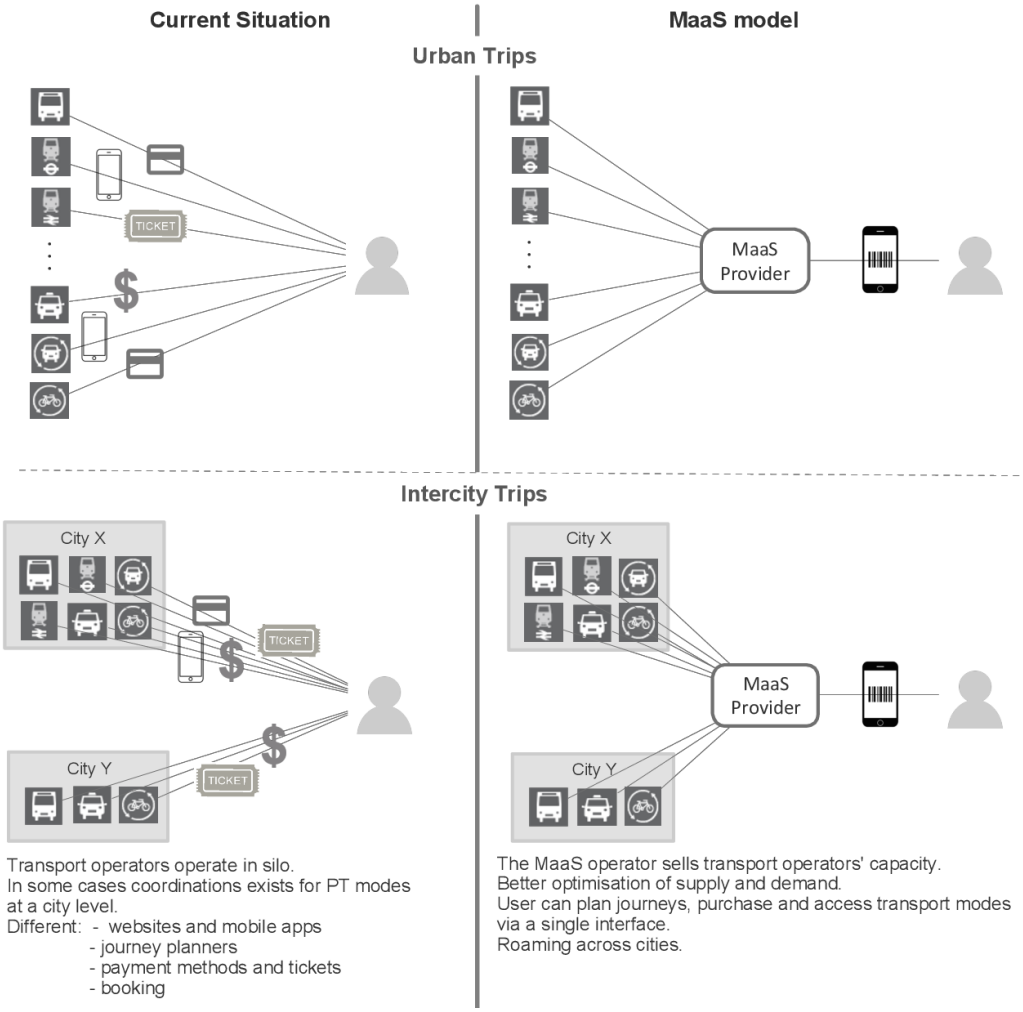
Smart Contracts can also be set up to represent automatic auctions or pay-as-you-go models. As new parameters of such a contract, driving time, CO2 load, capacity utilization, punctuality, comfort, etc. are conceivable in addition to the route.

3. Concept

How do we do that?

To break up a system as complex as mobility, the first thing we need is a new approach. We think that the solution cannot come from the providers, but from the users themselves.

That is why it is not a question of offering individual service providers to the customer, but vice versa the user's offer to use mobility services.
To achieve this, U-TURN forms an infrastructure layer over the existing transport systems. We can thus integrate all existing (and future) modes of transport into one level and create an open Mobility Hub. Apps are based on this data background and their aim is to offer the user a simple Mobility as a Service (MaaS). The following diagram illustrates this:



Source: Maria Kamargianni, Melinda Matyas

U-TURN is not a closed platform owned by one company, but a decentralized system open to all mobility service providers. They are invited to turn the competition into a coopetition and jointly develop new business models.

U-TURN is not provider-centered, but user-centered.
To make sure that this doesn't remain hollow words, we build an open system for all involved, on which the users themselves work.

U-TURN will be globally usable due to its consistent open source structure and will be constantly adapted by the skills and knowledge of its users. Regional grown offers have the chance to find imitators worldwide.

The U-TURN Mobility Wallet gives the owner data sovereignty back and reduces the previous number of apps for planning, ticket, payment to one.

The U-TURN community enriches itself with information about good routes, feedback and appreciation for climate-friendly driving, we call it
U-TURN Social Mobility.
As the community grows, so does its market power and the chance to give the individual a voice.

3.1 Output

- With the U-TURN App, the user can combine all means of transport on his way from door to door efficiently and freely according to his preferences and habits.

The route planning is designed for seamless connections, without long waiting times, detours and few transfers. With One-Click-Planning (OCP) and One-Click-Ticketing (OCT), a trip can be booked in one go.
The uniform billing via U-TURN gives a clear overview of the distances covered, times, CO2 balance and costs.
The recorded data is stored in the blockchain, protected from unwanted access.
U-TURN Social Mobility gives you the opportunity to share journeys and experiences and collect rewards.

- Mobility service providers gain access to anonymous data on traffic flows.

This enables them to increase their capacity utilization and develop innovative real-time concepts. In this way, the times, destinations and types of vehicles can be dynamically adapted to customer requirements. U-TURN supports implementation in ongoing business processes through data analysis and consulting.

Our Open Mobility approach prevents lock-in effects and promotes creative collaboration on new business ideas among all market participants.
Payment processes are automated by Smart-Contracts, and the billing of even complex Pay-as-you-go tariffs is simplified.

3.2 Benefit

The key to success is the fun of being part of the U-TURN community.
In the community everyone can live up to their responsibility for climate protection and be on the road with a clear conscience, because we cannot and do not want to do without mobility.
We redefine individual mobility: not the mobility provider makes timetables and stops, but the user determines when and where he wants to travel. Service providers can apply for journey segments.
Owning one's own vehicles can be dispensed with without any losses.
On the contrary: annoying tasks such as maintenance, care and repair are no longer necessary.
In the U-TURN Wallet, personal preferences can be stored in such a way that everyone can take care of their journeys more directly, faster, cheaper, more beautifully or more comfortably.
"How was your trip?" As part of the U-TURN community, users can share their experiences or ride with friends from the beginning.
The evaluation system ensures the quality of the service provided by U-TURN, service providers and users.
Gamification competitions reward climate-friendly behaviour.
The uniform billing gives the user a transparent overview of his costs and climate balance.

U-TURN is open to all service providers.
This should avoid market dominance and entry barriers for new competitors and make cooperative business models possible in the first place.
Many variations from "Pay for Convenience" models to combined offers for concerts and congresses are conceivable.
New transport models for the deeper penetration of suburban areas right down to the last mile can only be realised through a superordinate linkage and optimised adaptation to real needs. Groups that have been excluded so far will also be given new access to individual mobility because they have not been able to use a car for physical or financial reasons.

At least 50% reduction of CO2 emissions, at least 50% reduction of costs and faster and more convenient for all people on the move are feasible.

4. Stage of development

How far are we now?

4.1 Routing

With the U-TURN App it is currently possible to plan with different means of transport (multimodal) in Austria and Switzerland. The corresponding functionality for Germany will be available from Q4 2019 and will be enriched in Q4 by further transport providers.

4.2 Tracking

We can track, analyze and display route histories under various parameters in the analysis dashboard.

4.3 Travel Mode Detection (TMD)

The U-TURN App recognizes the used transport mode without user intervention. Automatic on- and offboarding as well as billing according to means of transport are prepared.

5. Milestones

What's next?

5.1 Global

The U-TURN App is supposed to enable route planning as the next step Europe-wide afterwards also globally.

5.2 Intermodal

We want to seamlessly link not only multimodal but also intermodal routes.

5.3 Ticketing

With the U-TURN App, the user can book the entire route from door to door without being redirected to different portals. A valid ticket must always be legible on the app.

5.4 Billing

Am Ende steht die einheitliche Abrechnung, transparent und steuerlich verwertbar.

6. Business model

How will we make money?

Our business model rests on three pillars:

6.1 Utilisation

U-TURN is free for the user.

6.2 Mediation

U-TURN retains a small fee for arranged trips.

6.3 Analysis and Consulting

U-TURN prepares the transport data in accordance with the question at hand and assists the transport service providers in an advisory capacity.

7. Organisational structure

How are we organized?

Like the concept, our corporate architecture is international and decentralized. Proprietary approaches contradict the objective involve all users and service providers in order to achieve optimal coverage. Open Mobility requires Open Source, Open Data and Open Markets.

U-TURN is built as a decentralized autonomous company, operated by all participants who acquire voting rights in the company through administration, development and use of the platform.

Local partners around the world ensure the networking of regional transport systems in a global context.

8. Founder team

Who is in?

Peter Löck,
Mobility-Expert
Peter Löck | Mobilitätsberatung
https://www.peter-loeck.com/

Roland Heese,
Chief Innovation Manager
CEO disrupt.IT
https://disrupt-it.ee/

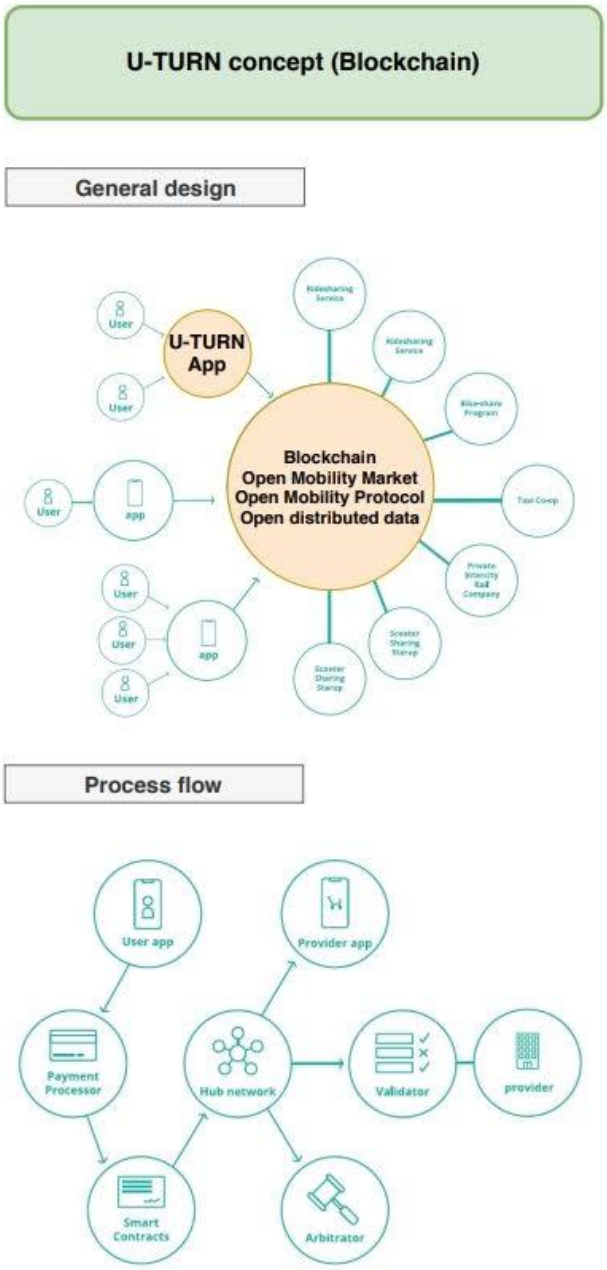
Laura Heese,
Community Manager
digitalwave OÜ

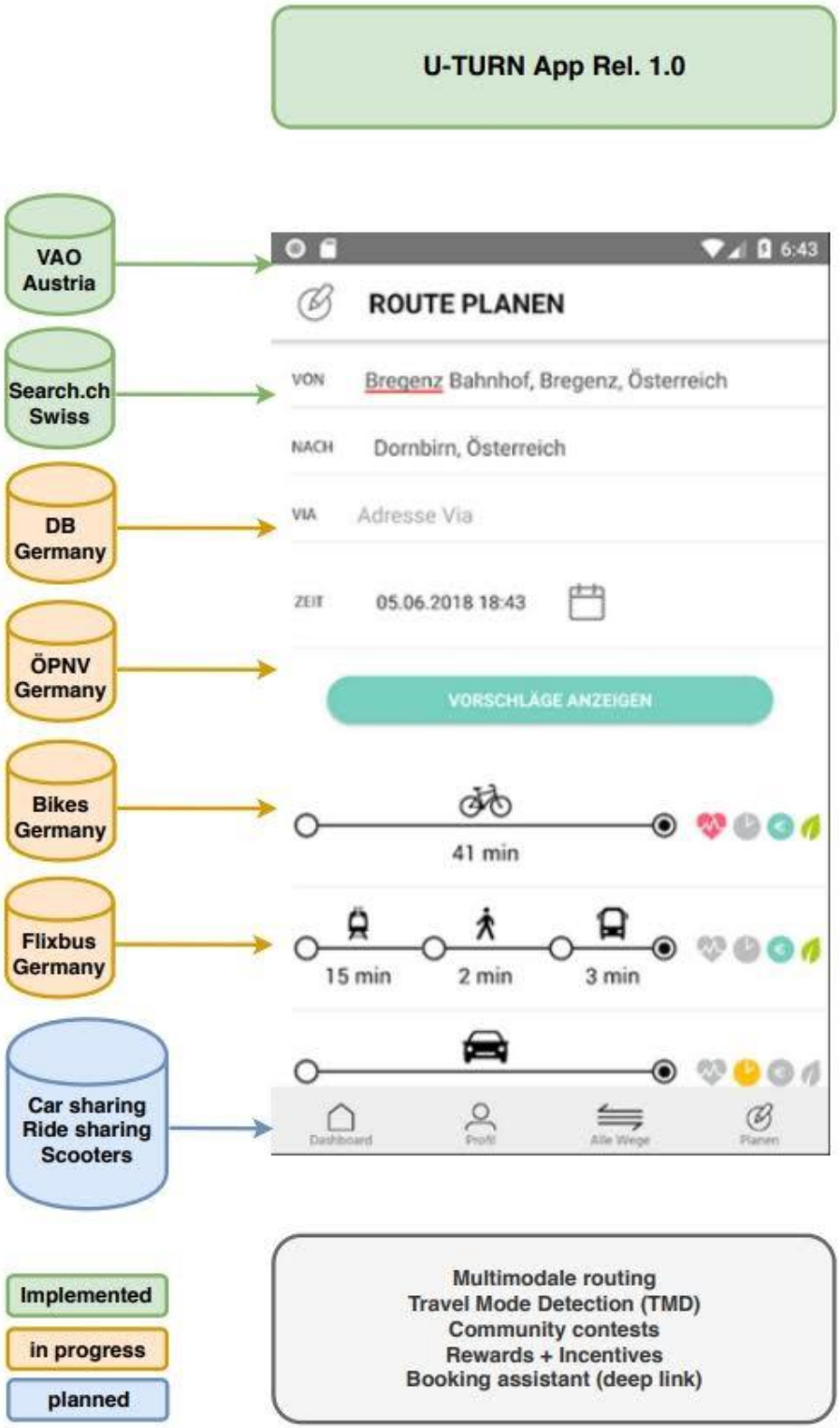
Ingo Pfuhle,
Business Development
Projectmanager at ITS Informationstechnik Service GmbH

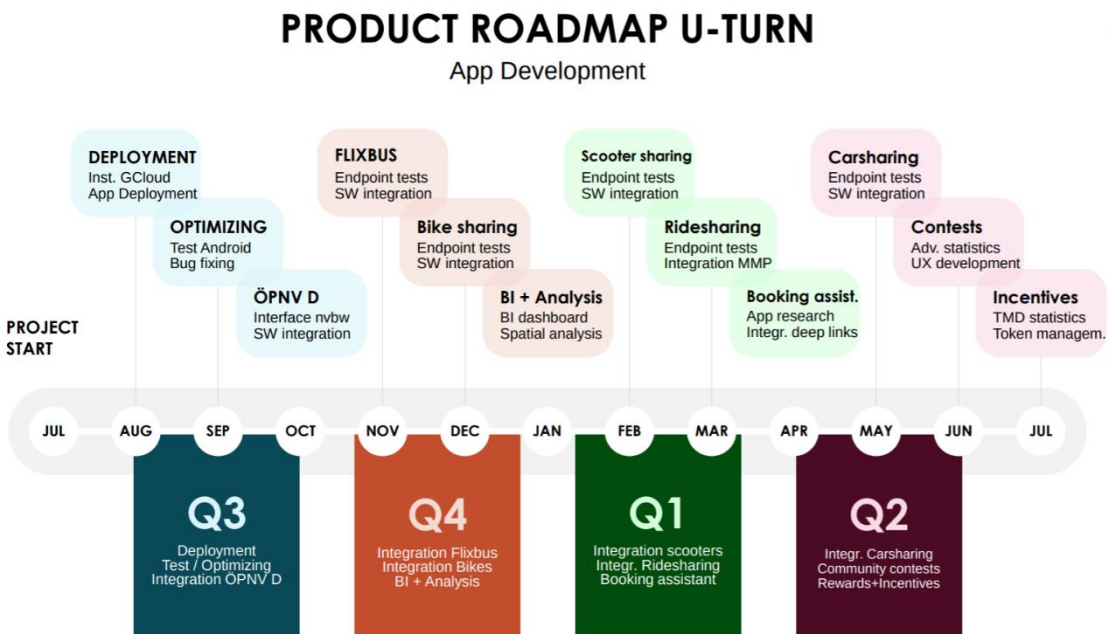
Dr. Rene Höfer
Geospatial Expert
Jena-Optronic GmbH

9. Technical Annex

How does it work?




U-TURN App Rel. 1.0
VAO Austria
Search.ch Swiss
DB Germany
ÖPNV Germany
Bikes Germany
Flixbus Germany
Car sharing
Ride sharing
Scooters
6:43
ROUTE PLANEN
VON
Bregenz Bahnhof, Bregenz, Österreich
NACH
Dornbirn, Österreich
VIA
Adresse Via
ZEIT
05.06.2018 18:43
VORSCHLÄGE ANZEIGEN
41 min
15 min
2 min
3 min
Dashboard
Profil
Alle Wege
Planen
Implemented
in progress
planned
Multimodale routing
Travel Mode Detection (TMD)
Community contests
Rewards + Incentives
Booking assistant (deep link)


PRODUCT ROADMAP U-TURN
App Development
DEPLOYMENT
Inst. GCloud
App Deployment
OPTIMIZING
Test Android
Bug fixing
ÖPNV D
Interface nvbw
SW integration
FLIXBUS
Endpoint tests
SW integration
Bike sharing
Endpoint tests
SW integration
BI + Analysis
BI dashboard
Spatial analysis
Scooter sharing
Endpoint tests
SW integration
Ridesharing
Endpoint tests
Integration MMP
Booking assist.
App research
Integr. deep links
Carsharing
Endpoint tests
SW integration
Contests
Adv. statistics
UX development
Incentives
TMD statistics
Token managem.
PROJECT START
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
Q3
Deployment
Test / Optimizing
Integration ÖPNV D
Q4
Integration Flixbus
Integration Bikes
BI + Analysis
Q1
Integration scooters
Integr. Ridesharing
Booking assistant
Q2
Integr. Carsharing
Community contests
Rewards+Incentives

When U-TURN becomes YOUR-TURN,
then climate protection becomes climate protection, Smart cities and stress-free mobility to reality.

“Nothing is more powerful than an idea whose time has come."
Victor Hugo (translated)

Thanks for reading!

Göttingen, 23.09.2019

Peter Löck

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