Mobility as a Service / Platform development

gaia

1. Osma Ahvenlampi - KYYTI

2. Alhonen Jukka- Deal Comp Oy

3. Anttila Hannu- Moprim

4. Hallikainen Jyrki- UROS

5. Krause Carl- G-Boats Oy

6. Laatikainen Kaisa- PTS Finland Oy

7. Narinen Seppo- Rangero

8. Ostberg Peter- Mente Marine

9. Paasikivi Jari- TVV Lippu- ja maksujärjestelmä Oy

10. Parjanen Tuomo- PayiQ

11. Pulkkinen Jukka- Hämeen Ammattikorkeakoulu, HAMK

12. Tamminen Pia- Hämeen Ammattikorkeakoulu, HAMK / LAUREA

13. Terttunen Teemu- Bout

14. Varinowski Juha- Easy Call Finland Oy

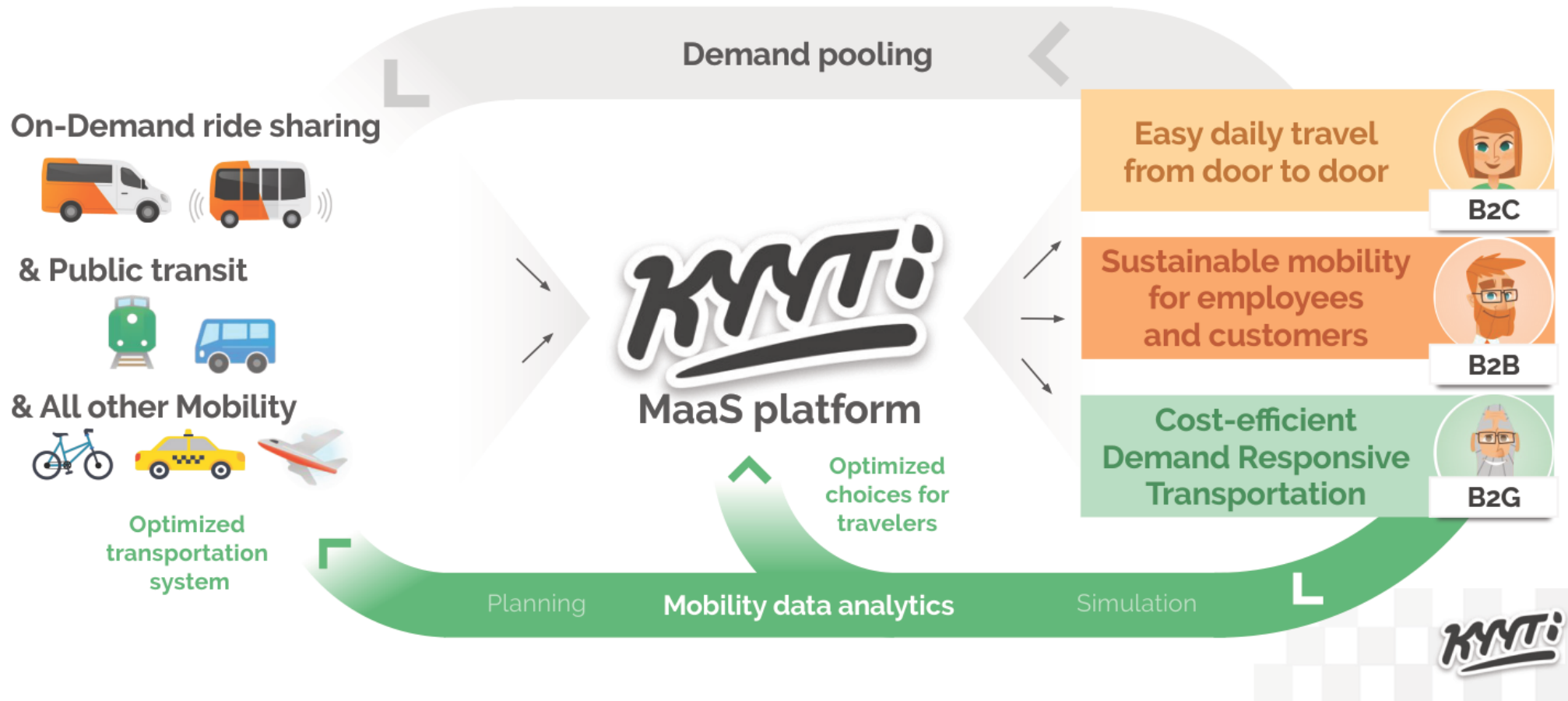# TURNKEY MAAS-SOLUTIONS WITH INTEGRATED ON-DEMAND


MAKES DAILY TRAVEL EASY

Mobility as
a Service

On-Demand
ridesharing

Mobility data
analytics

Kyyti MaaS platform powers the next generation Transportation Operating System

Demand pooling

On-Demand ride sharing

& Public transit

& All other Mobility

Optimized transportation system

KYYTI

MaaS platform

Optimized choices for travelers

Easy daily travel from door to door

B2C

Sustainable mobility for employees and customers

B2B

Cost-efficient Demand Responsive Transportation

B2G

Planning   **Mobility data analytics**   Simulation

KYYTI

Kyyti Group's Smart Mobility ecosystem - opening the global mobility market for Finland
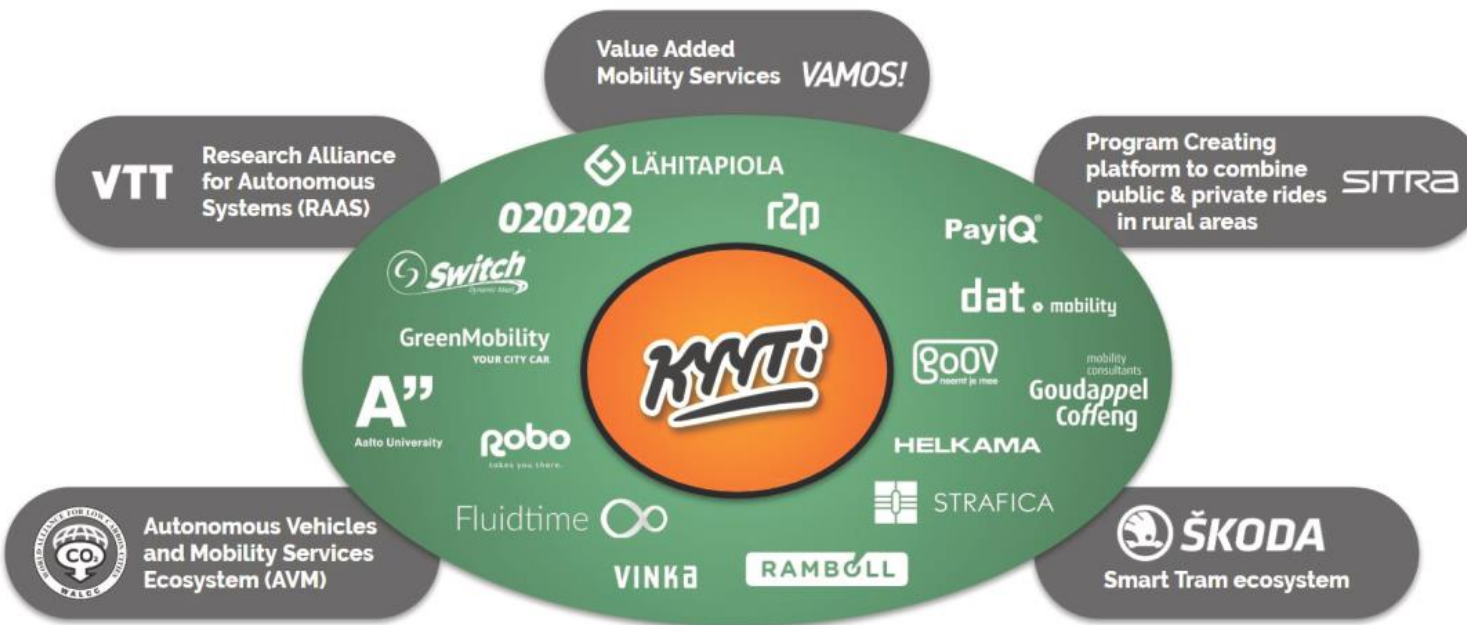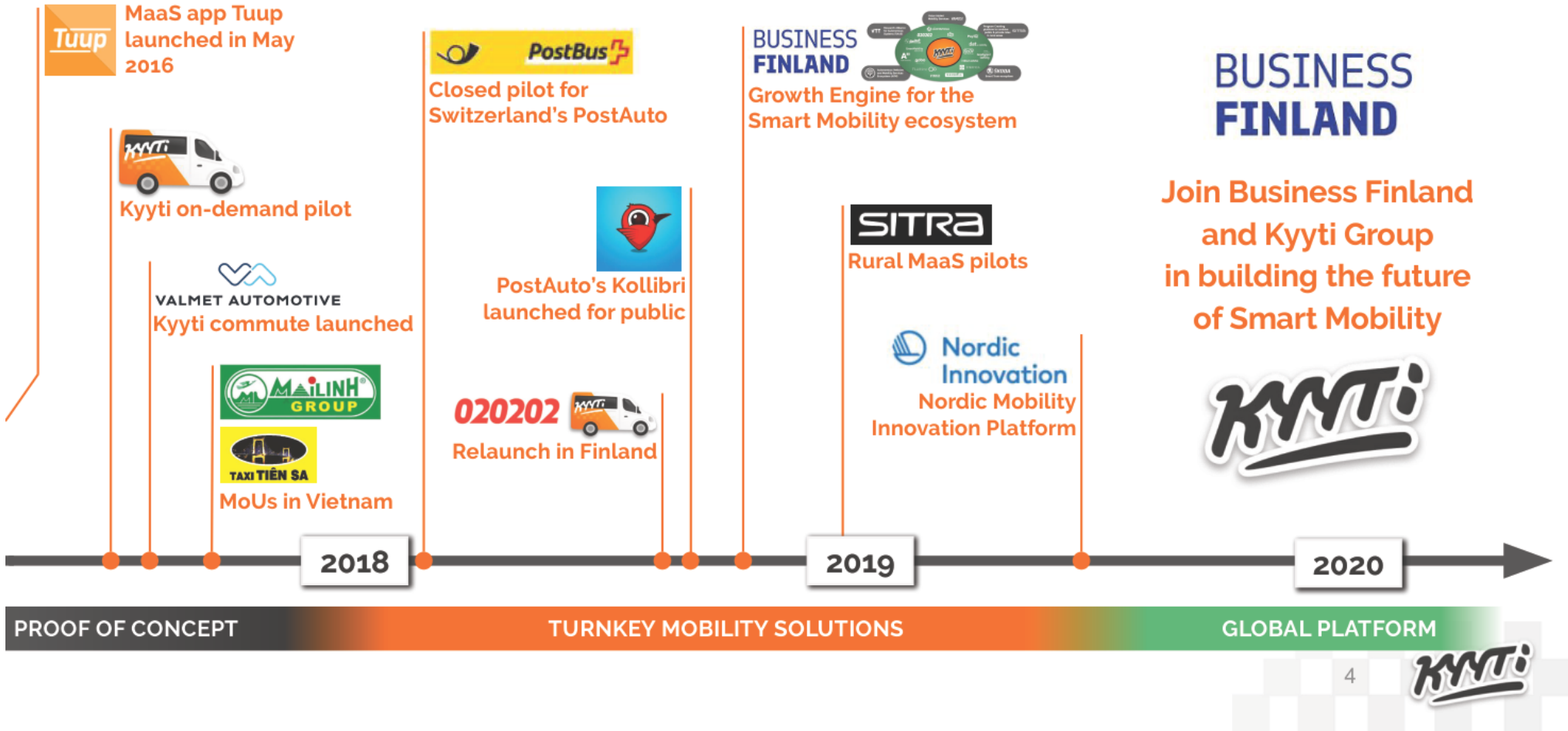

Activities:

- Go-to-market cooperation
- R&D coordination
- Fostering strategic partnerships

Impacts:

- New annual turnover in the billion euro range
- Efficient, convenient and sustainable transportation systems

Kyyti Group makes MaaS real

MaaS app Tuup launched in May 2016

Kyyti on-demand pilot

Kyyti commute launched

MoUs in Vietnam

Closed pilot for Switzerland's PostAuto

PostAuto's Kollibri launched for public

020202
Relaunch in Finland

Growth Engine for the Smart Mobility ecosystem

Rural MaaS pilots

Nordic Mobility Innovation Platform

Join Business Finland and Kyyti Group in building the future of Smart Mobility

2018 — 2019 — 2020

PROOF OF CONCEPT | TURNKEY MOBILITY SOLUTIONS | GLOBAL PLATFORM

4

Deal Comp Oy

Deal Comp Oy has 25 years of experience in creating dependable IT-hardware solutions for challenging conditions.
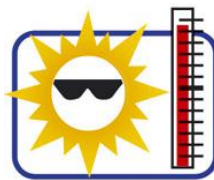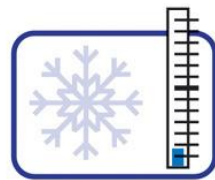
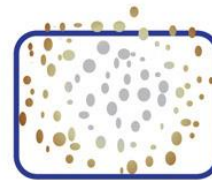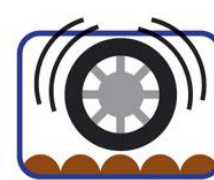| Heat	Frost	Moisture	Dust	Vibration

These products are designed for Nordic environmental conditions, demanding field use and vehicle use.

ITxPT - Open IT architecture for Public Transport

ITxPT is cost-effective and open system for building a standartized IT environment for public transport vehicles. Additionally, connectivity to smart city and other open interfaces is standard..

Deal Comp Oy will produce energy efficient ITxPT hardware for harsh Nordic environment.

The system's **stand-by power saving is 20%** and **operational mode 50% lower than traditional systems.**

This is **extremely important** for **electric buses in winter.**

Deal Comp Oy

Jukka Alhonen Myynti ja markkinointi, 0400 335544, jukka.alhonen@dealcomp.fi

Tauno Laakso Toimitusjohtaja, 050 5521157, tauno.laakso@dealcomp.fi

Markku Ryynänen Tekninen johtaja, 050 340 3337, markku.ryynanen@dealcomp.fi

KUUMA	KYLMÄ	KOSTEA	PÖLY	TÄRINÄ

Laurinmäenkuja 3 B, 00440, Helsinki
Puh. (09) 47 887 700, www.dealcomp.fi

Unique MOPRIM Mobility Data: From individual user data to big data

MOPRIM

HOW + **WHEN AND WHERE** + **CONTEXT**

User's exact mode of transport

User's route

Additional data sources

Discovered on the smartphone with MOPRIM technology
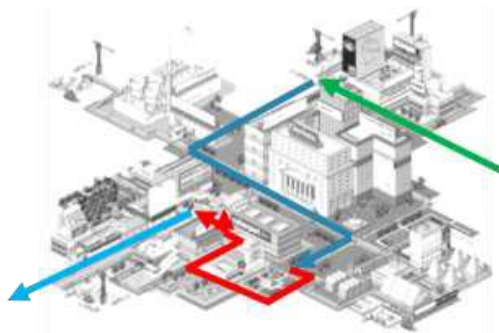
Derived from location data

Routes and timetables, etc.

Mobility Footprint ecosystem proposal

MOPRIM

PARTNER APPS with MORPIM SDK

MOPRIM SDK

or MOBILITY FOOTPRINT APP

MOBILITY FOOTPRINT CREATION

MOPRIM
MOBILITY AI CLOUD

MOPRIM mobility data from all users

Open and proprietary data
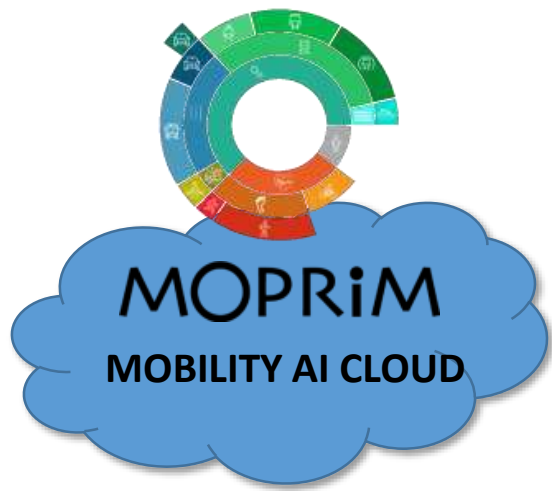
MOPRIM creates new mobility data, fuses it with other data sources and builds the personal Mobility Footprint

MOPRIM Mobility Footprint data

PARTNERS

Mobility Service Providers

Public Transport Operators

Transport and Urban Planners

Research Institutions

Local governments

3

Thank You!

Hannu Anttila
VP Sales & Business Development
e. hannu@moprim.com
t. +358 50 385 5515

www.moprim.com

@MOPRIMLtd

@moprim_ltd

MOPRIM Ltd

UROS Unique Global Network – Products & Customer Segments

Silicon Vendors	IoT Module Vendors

IoT Smart Connectivity

→ Goodspeed
→ Back-end Service
→ Subscription Management
→ eSIM

IoT Device Vendors	MNOs/MVNOs

Consumer OEMs	MNOs/MVNOs

IoT Verticals

→ Smart City
→ Industrial
→ Natural Resources
→ Sports and Media

Industrial OEMs	Media & Service Providers

Industrial Customers	Consumers

IoT Applications

→ Wearable Computer/Smart Lighting/Biometric Verification
→ Production Optimization/Smart Fleet Management/Energy Consumption Monitoring
→ Smart Water Cycle/Sustainable Resource Optimization/Air Quality Monitoring
→ Event Management/Game Statistics/Content Streaming

Governmental Customers	Municipal Customers

UROS

Smart Connectivity from Universal Level to One Person

UROS Smart Connectivity

Smart Devices + IoT Platform + AI + User Interface

UROS
Smart Connectivity

Natural Recourses
Industry
City
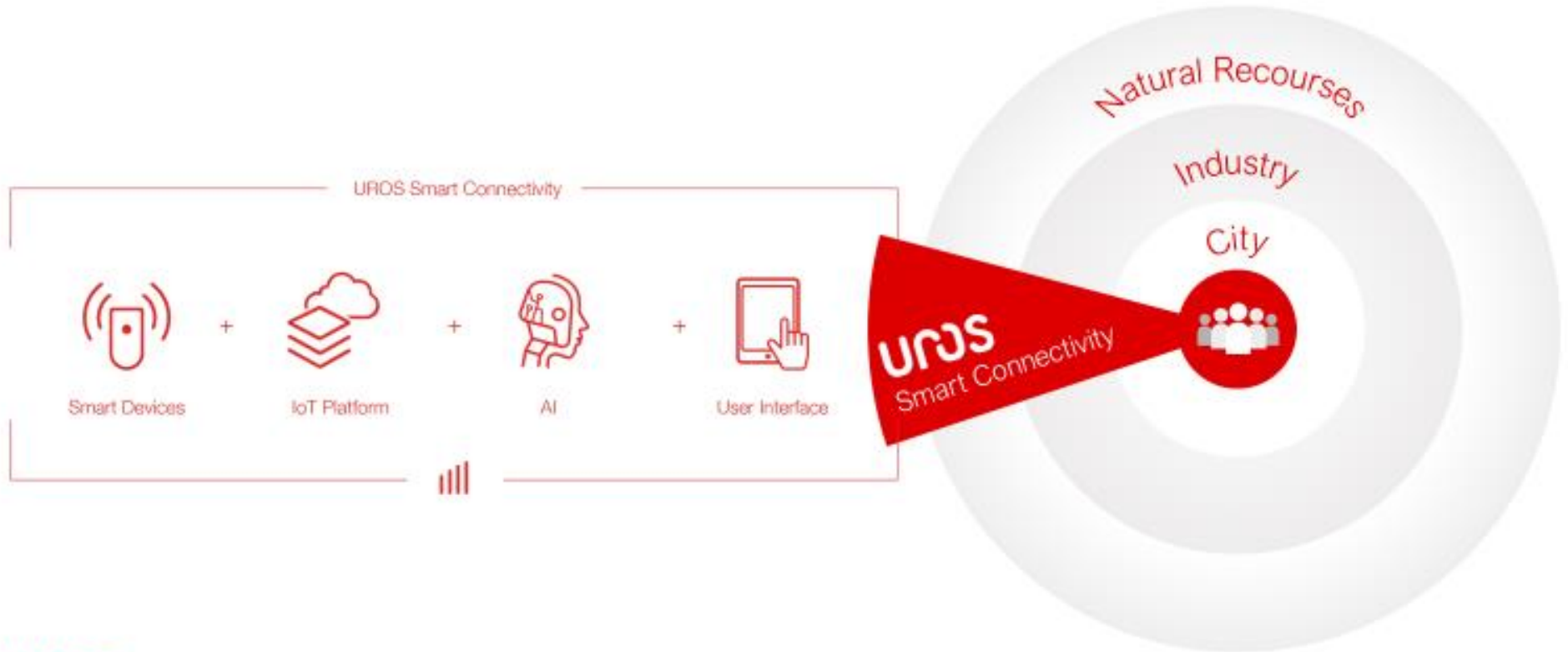
We are passionate about making the impossible possible.

Mr. Jyrki Hallikainen
Founder, Chairman of the Board, UROS
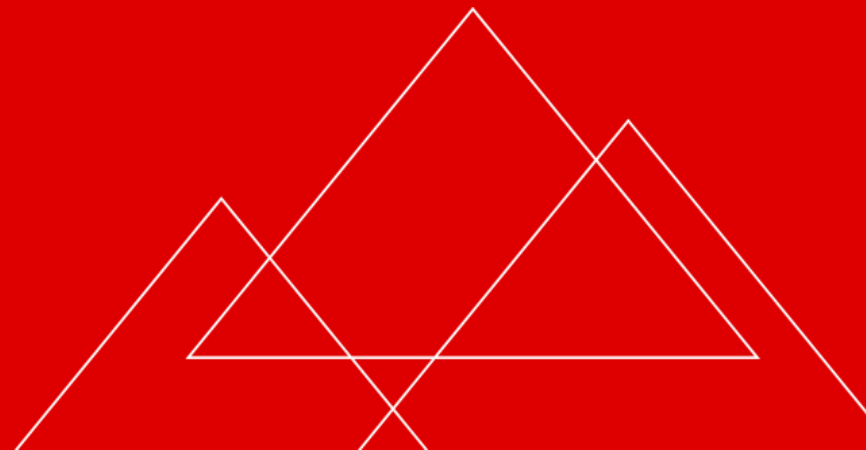
SMART BOATING REVOLUTION

CLOUD YACHT OS

ASSISTIVE ROBOTIC NAVIGATION

- AI assisted boat handling
- Enables unprecedented intuitive usability

SHAREABILITY BY CLOUD YACHT OS™

- The world's first boat optimised for urban water areas
- With Cloud Yacht™ digital mobile platform sharing is made easy

CLEAN YACHTING MODEL

- Cloud Yacht™ hull is 3D printed with no oil used
- All electric propulsion: no carbon dioxide emissions
- Lean manufacturing and logistics

BY BOATS

CLOUD YACHT MAAS

CLOUD YACHT OS

CLOUD YACHT OS™
- The world's first boat operating system optimised for urban boat sharing
- Cloud Yacht™ digital mobile platform is suitable for managing just one or a fleet of yachts

USERS
- Cloud Yacht™ digital mobile platform allows several ownership models from 100% owner or part owner who shares to a yacht renting member

PROTOTYPING PHASE
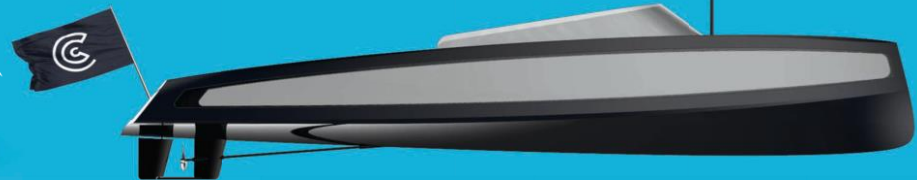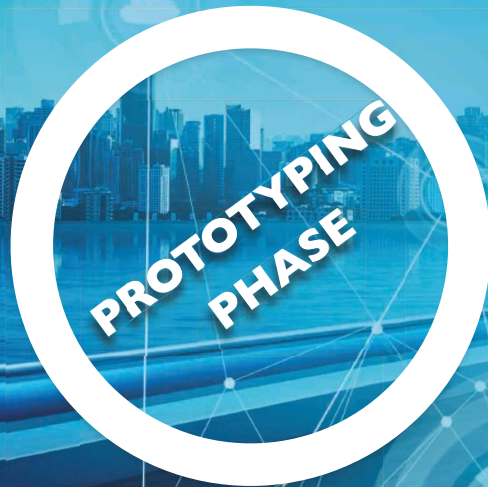
CLOUD YACHT FLEET
- The world's first boat optimised for urban water areas
- Assistive AI brings safe handling
- Easiness of use opens boating for all

BY BOATS

PTS

FINLAND OY

SUSTAINABLE AND HUMAN-MINDED
TRANSPORTATION ON RURAL AND ARTIC AREAS

KAISA LAATIKAINEN

HUMANITY

DIGITALITY DOES NOT ELIMINATE HUMANITY.

- **Face the customer as a individual person**

- **Admit that people use digitalism differently**

- **Recognice human needs**

- **Treat the driver as same as your own employees**

- **Admit that rural areas are different**

- **Ensure profitable business model**

Build solution where you can commit the driver & customer.

YOU HAVE TO AIM FOR THE FUTURE SOLUTIONS, BUT DO NOT FORGET TO SERVE THE NEAR FUTURE IN THE SAME TIME.

PTS
FINLAND OY

PTS

FINLAND OY

When you order a service instead of a car.

CONTAI
Smart container for physical internet

Rangero // Interchangeable platforms

A&R Luomala // Logistics development

Vericrea // Product & IPR development

Abstraho // Product & IPR development

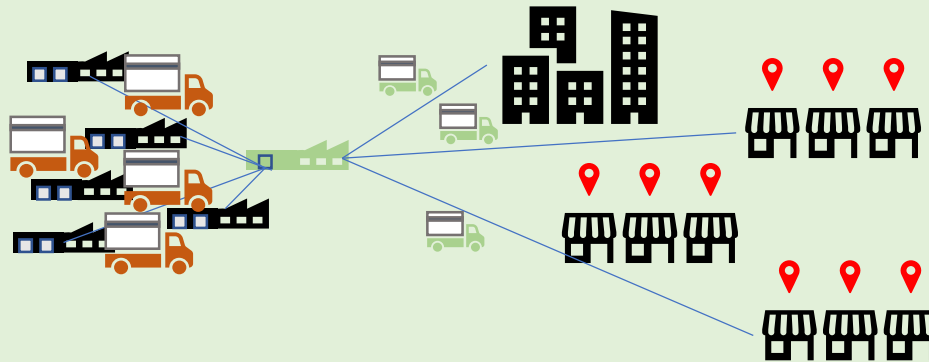Seppo Narinen

040 5085344

seppo.narinen@vericrea.com

# CONTAI background // Carryson Interchangeable Platform + Loader

www.carryson.com
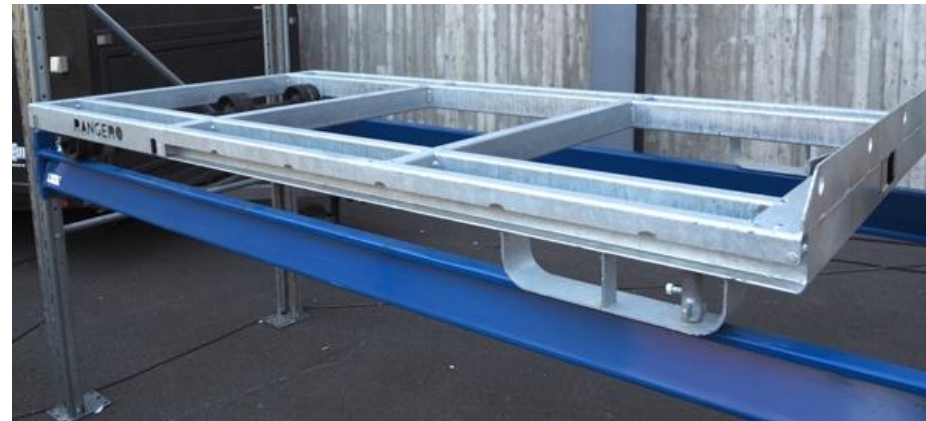
Trends

Parcel services // Urban logistics // Green wishes by Customers // Performance // Sustainability // Regulation // City Hubs // Automation // Traceability // Fair play //

Physical Internet

Physical Internet is an open global logistics system based on physical, digital and operational interconnection through unity, interfaces and protocols.

1. Terminals, Cityhubs
2. Vehicles
3. Containers
4. Parcels
5. Digital Twins

"City logistics is nightmarish"
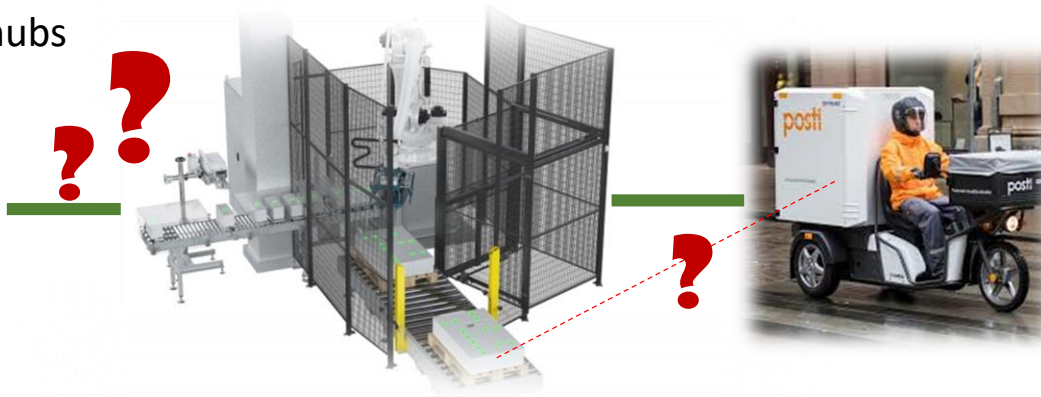
▼ Pain Points = CONTAI Potentials

1. Get away from vehicle-centered load carrier solutions

2. Excessive number of load container types and weak automatic handling

3. Lack of digital information
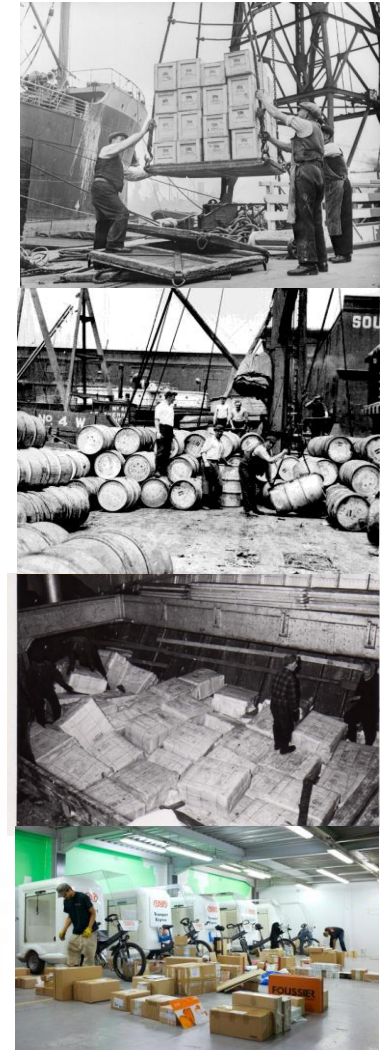
As a reference point, the efficiency of the sea container standard relative to the situation before the agreed interfaces.

Using waterways and cargobikes for city logistics/urban freight in Gothenburg

Business Finland **Smart Mobility Challenge Competition**

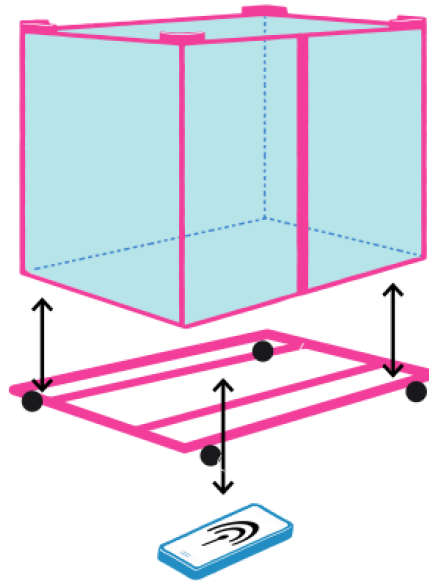Workshop 28.5.2019

11.3.2019

CONTAI ▼

Physical and digital intermodal interface - smart container*
Enables end-to-end automation and resource automation

Environment
Digitalisation
Citylogistics
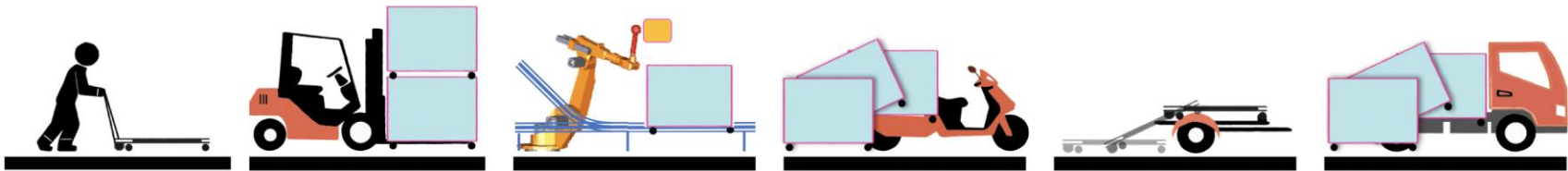Online shop
Automation
Common interface

Autonomous loading
Terminal robotics

Last mile vehicles
Terminal logistics

Digital Twin
IoT
Integration to shipping and tracking

* Smart container
EUR-pallet, dolly, roll and parcel cages
Multi function platform
Pop-up terminal

CONTAI requested network

CONTAI Product Family

- Smart Container Platform
- Container Loader
- Container Applications

- IPR:s

Support

Customers

Global Marketing

Vehicle Partners

Application Partners

Product Ownership, IPR ja Product Development

Financing

7 Years record + IPR asset

Contact: Seppo Narinen
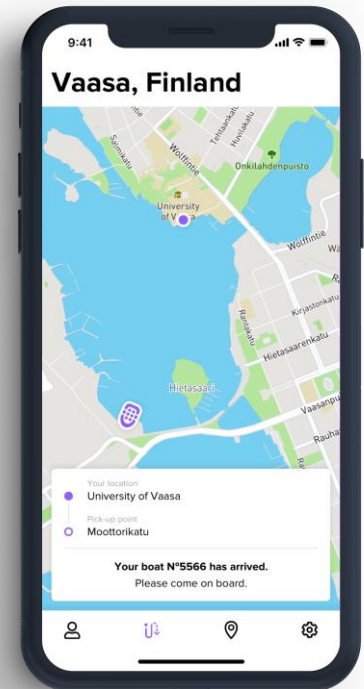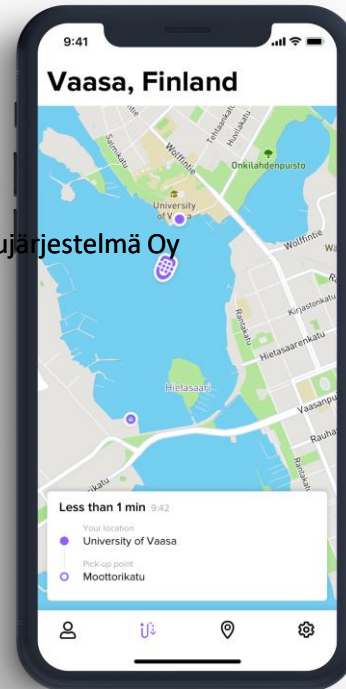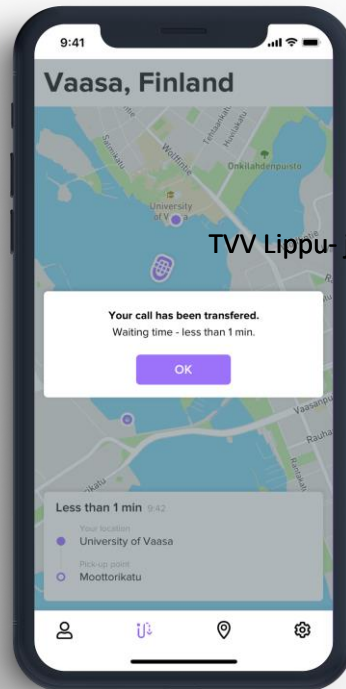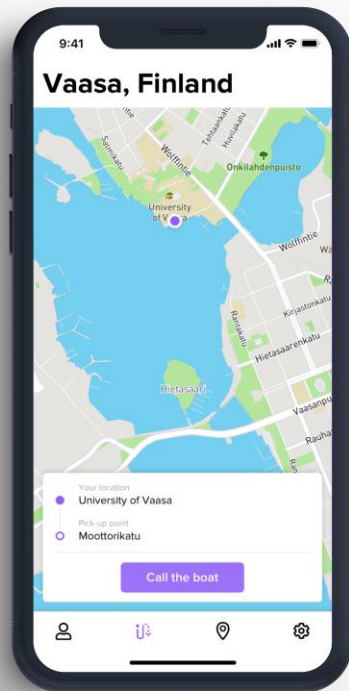040 5085344
seppo.narinen@vericrea.com

Mente Marine

CALLBOATS
The sea. For everyone.

- Autonomous
- Electric
- Silent

TVV Lippu- ja maksujärjestelmä Oy

TVV Lippu- ja Maksujärjestelmä Oy

- **TVV lippu- ja maksujärjestelmä(LMJ) Oy is IT service and procurement company owned by several cities and HRT (Helsinki Regional Transportation)**
  - Provides ticketing and customer information solutions for PTAs/Cities
  - Best known products/solutions
    - Waltti –ticketing solutions
    - Digitransit –Journey Planner
  - Solutions are used over 20 Regions in Finland

Why we need Traffic data platform?

- **No-one is anymore responsible to collect nationwide data**
  - Traficom doesn't have anymore their previous responsibilities
    - Current NAP is not a solution for data sharing, it is just a phonebook
  - No-one is collecting data from new players or transport modes

- **MaaS serviceproviders needs good traffic service data -> No data – No travel packages**
  - Basic traffic data should been seen as part of traffic infrastructure (digital infrastructure)

- **Just raw material is not enough even in this case**
  - Raw data is not standardised
  - Data from different players can't be combined without extra work
  - Journey Planner algorythms doen't work wothout harmonized data

3
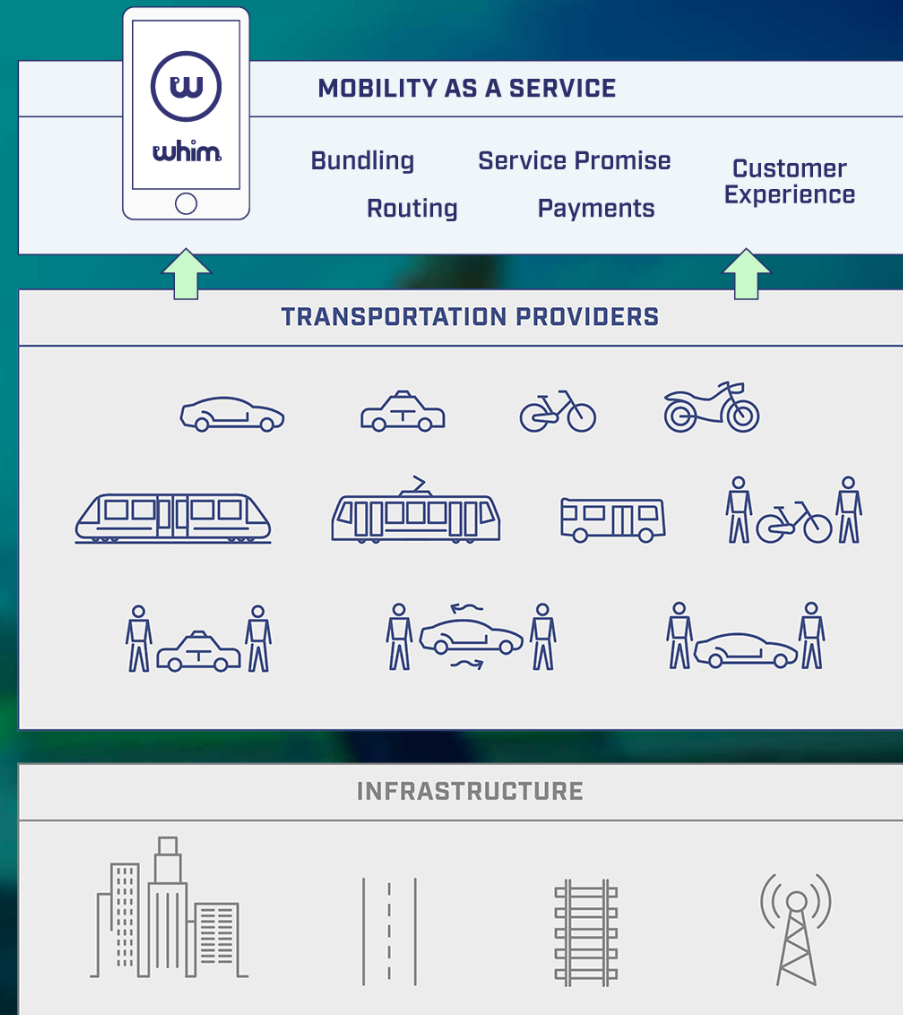
What is the focus area?

- **Collecting data and harmonization of the data**
  – Data from different transport modes, just basic timetable data is not enough
  – Provides data to developers, MaaS operators, customers information solution providers, etc.
  – Data can be used also for research and statistic purposes -> Cities/Authorities, cityplanning functions, etc.

- **Multimodal journey planning algorythms**
  – Regional and nationwide journey planning results (multimodal)
  – First development steps: on-demand traffic (based on GTFS Flex), combine different schedule based traffic/timetaböe packages
    - International Co-operation needed

- **Standardized intefaces**
  – Journey planning API's
    - Based on OTP and OTP Flex (Open Trip Planner)
  – Order API's
    - Open API for on-demand traffic orders
    - Can the same structure used also for renting orders?
  – Sales API's
    - At least together with Public Transportation service providers
    - Possible Co-operation with other Nordic projects

4

W ™

waltti
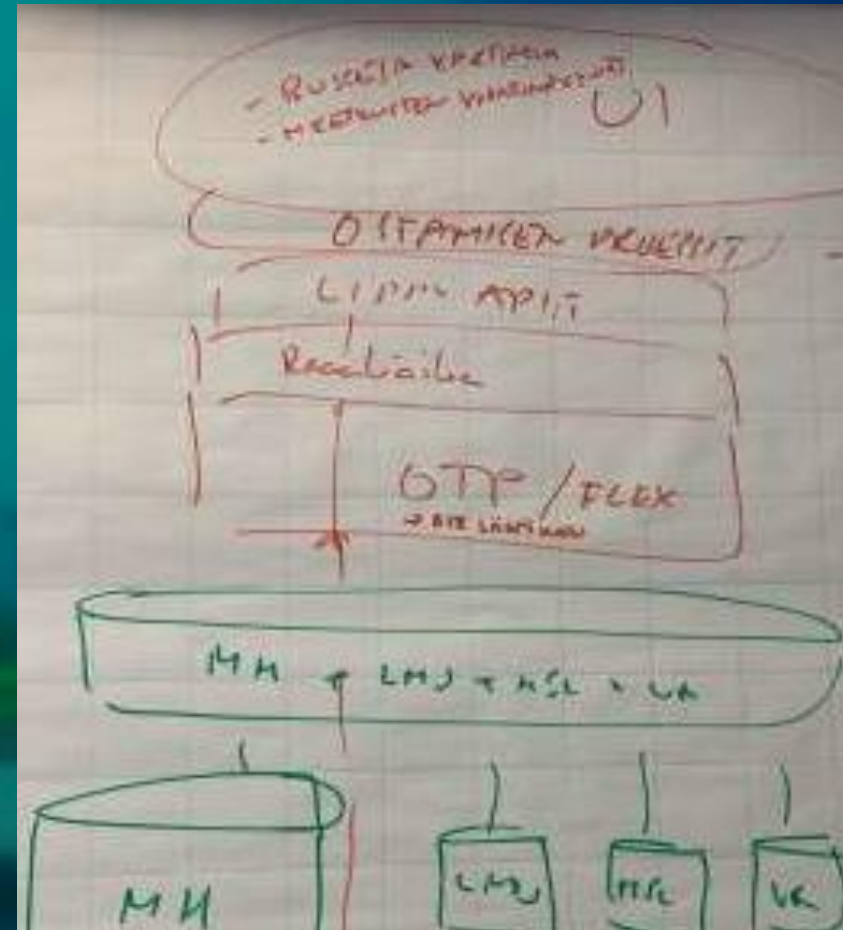
Kiitos!
Thank You!
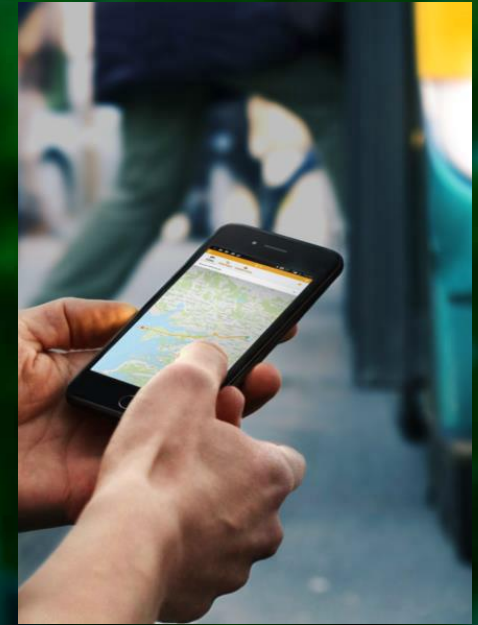
PayiQ TaaS®

Smart Ticketing for Smooth Journeys

The Challenge

- Certain percentage of the citizens are vulnerable and at risk to exclusion from **MaaS** trend. Authorities and Smart Cities (*as PayiQ customers*) recognize the possible negative effects arising.

- Interoperability services and digitally assisted solutions need to better focus on serving these groups in multi-modal urban area transportation.

- Target of this initiative is to develop practical solutions to address the challenge.

PayiQ®

The Possible Partner Network

- PayiQ relies on the current and continuously expanding partner network (public & private) and customers:
  - **Research institutions** *like VTT and universities.*
  - Public **transport operators**, *mainly cities and regional operators.*
  - **Regional development** units of Smart Cities.
  - **Commercial global programs** like Microsoft CityNext.
  - **Commercial business partners** and **technology alliances** (under NDA).
  - **Transportation service providers**; *buses, taxis, on-demand service providers.*
  - **Payment / digital service providers**; *banks, credit card companies and PSP's.*
  - **Existing partner networks**; *MaaS Alliance, global and local ITS organizations (e.g. ITS Finland).*

PayiQ®

PayiQ TaaS ® – the Ticketing-as-a-Service Company

White Label Ticketing Apps

3rd Party Mobility and Payment Solutions

API – Secure Access for All Ecosystem Stakeholders

PayiQ TaaS® Platform

Comprehensive Ticket Options

Mobility Data

Validation independence

Fraud Prevention Engine

All Modern Payments

PayiQ®

Smart Mobility Challenge Competition -
Mobility as a Service / Platform development

Jukka Pulkkinen

Hämeen Ammattikorkeakoulu, HAMK

Introduction

HAMK Smart

- HAMK Smart Research unit - supports the industry, commerce and the society in digitalization and service development needs

- 45 employees

- 1000 students participated in our project in 2018

- 52 ventures ongoing

- Venture portfolio 6.5M€

Co-operation with Rolan Oy

1. Proof of Concept for a Smart Mobility Platform
   - Developed in 1.12.2018 – 31.2.2019
   - Focus on efficient operation and maintenance for the expanding vehicle fleet

2. Traffic 4.0 in Hämeenlinna
   - Started in 03/2019
   - Piloting city bike solution

Two-dimensional integration is needed:
End user services and ecosystem integration

Mobility users

End user service integration

Ecosystem for
Operations & Maintenance
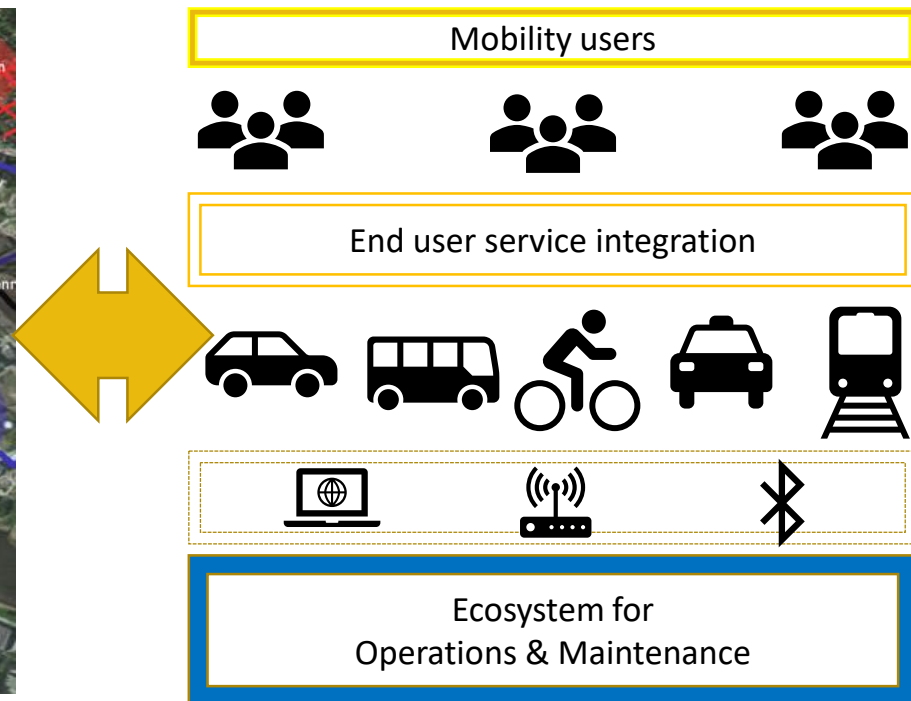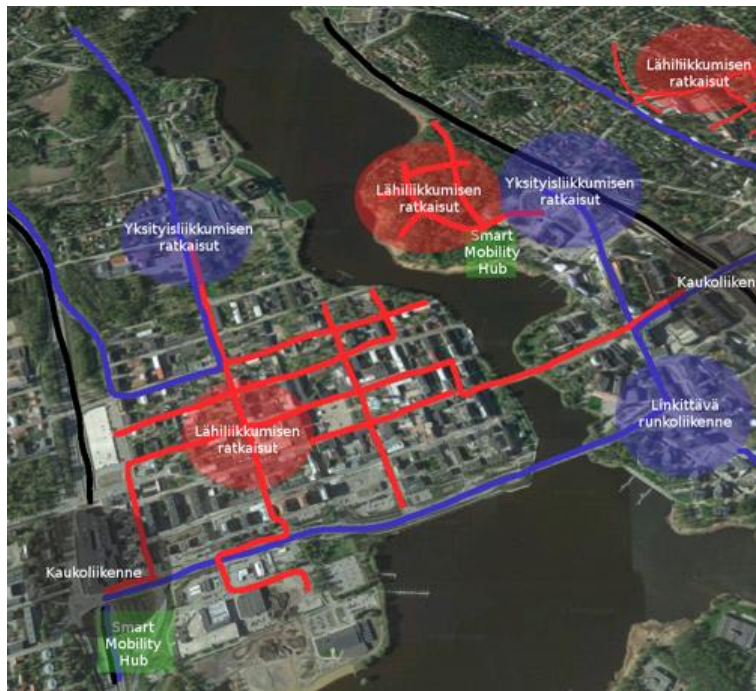
Smart Mobility Platform – From isolated services to an integrated Smart Mobility ecosystem

Ecosystem for
Operations & Maintenance

Smart Mobility Services

Smart Mobility Platform

- **Smart Mobility Platform:**
    - Focuses on ecosystem for operations and maintenance services
    - Combines different car, bike and other system data
    - Integrates single services & solutions to manageable city-level
      mobility systems

- **HAMK's role in Smart Mobility Platform development:**
    - Requirement specification for the platform
    - ICT development
        - Smart mobility solution integration to platform
        - Back-end programming
        - Front-end development
    - Piloting and testing
    - Supporting launching of commercial platform
    - Research focus
        - Data integration and ecosystem development
        - City planning & design, smart city solutions

HAMK HÄMEEN AMMATTIKORKEAKOULU
HÄME UNIVERSITY OF APPLIED SCIENCES

AI

Big Data

5G

IoT

pia.tamminen@hamk.fi

paivi.poyry-lassila@laurea.fi

BOUT

MaaS of the Seas

Teemu Terttunen, COO

PROBLEM

For a person in a city wanting to travel by the sea, most often...

The product offering is limited and difficult to find

Each service is controlled **separately**

Prices are high and difficult to compare

BOUT

SOLUTION

Bout - MaaS of the Seas is a platform that connects passengers with a number of maritime transportation services

The target is to:

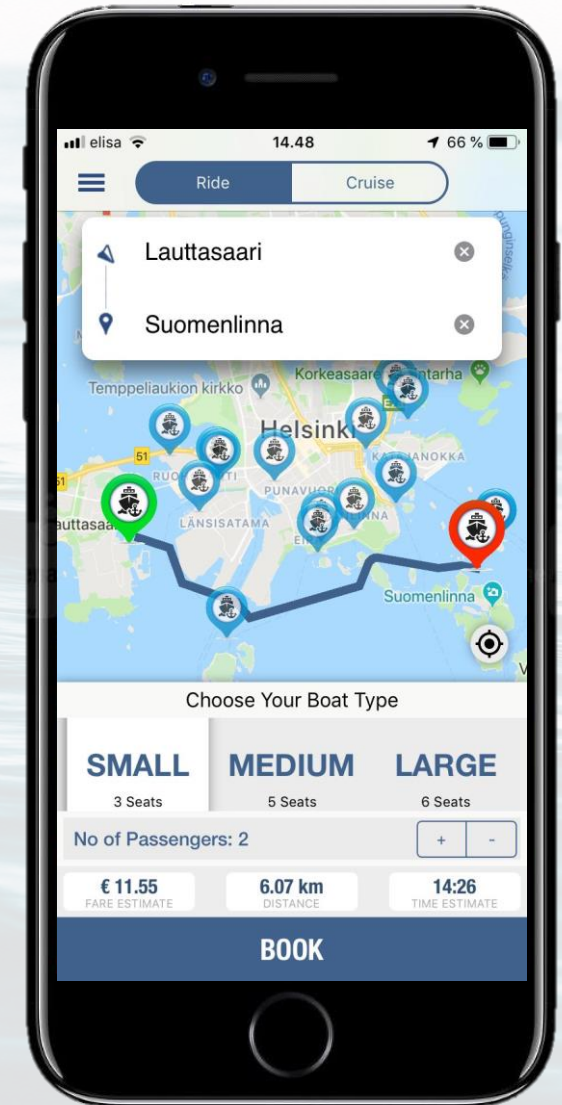| **CENTRALIZE** supply and demand to one app	**SIMPLIFY** purchases via a single user model	**GROW** the market of all parties

BOUT

CUSTOMERS

Primary users of the user-friendly mobile application are:

- Local citizens without a boat
- Tourists
- Commuters
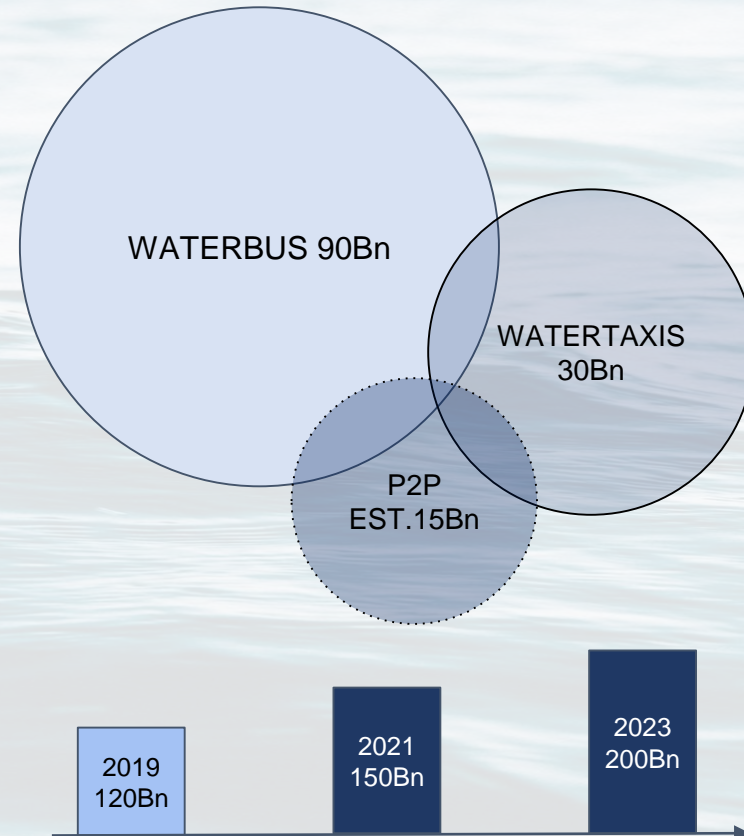- Hotels, restaurants & other services

MARKET SIZE

The market for Water transportation is estimated to be roughly **$150Bn in 2021**

Business Model
Bout collects a fee % of each fare ordered through the app, with the amount depending on the service provided

WATERBUS 90Bn

WATERTAXIS 30Bn

P2P EST.15Bn

2019 120Bn

2021 150Bn

2023 200Bn

BOUT

FURTHER PLANS

2019:
Launch in June (Helsinki & Espoo)
Expansion to other cities in Finland during the summer
Our goal is to transport people worth of 1M€ this year

2020:
International launch in multiple cities

We are currently looking for funding and advisory to secure and accelerate our international growth

BOUT

Easy Call Finland Oy

OPENTAXI

Service platform of procurement

- ✓ Open data
  - ✓ Public transportations
  - ✓ Weather forecasts
  - ✓ Traffic
- ✓ Users' infomation
- ✓ Predictions
  - ✓ Price
  - ✓ Demand
- ✓ Combine rides
- ✓ Open for all transports