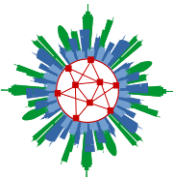


Mobility platforms as a key element for sustainable mobility

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Department of Computer Science
Very Large Business Applications
University of Oldenburg



The research project at a glance

Sustainable satisfaction of mobility demands in rural regions



Development of sustainable and innovative mobility services for rural areas



Research partner:
University Oldenburg, University Vechta, TU Brunswick and DLR



Model region:
Northern Germany



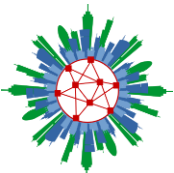
Project duration:
March 2016 - March 2020



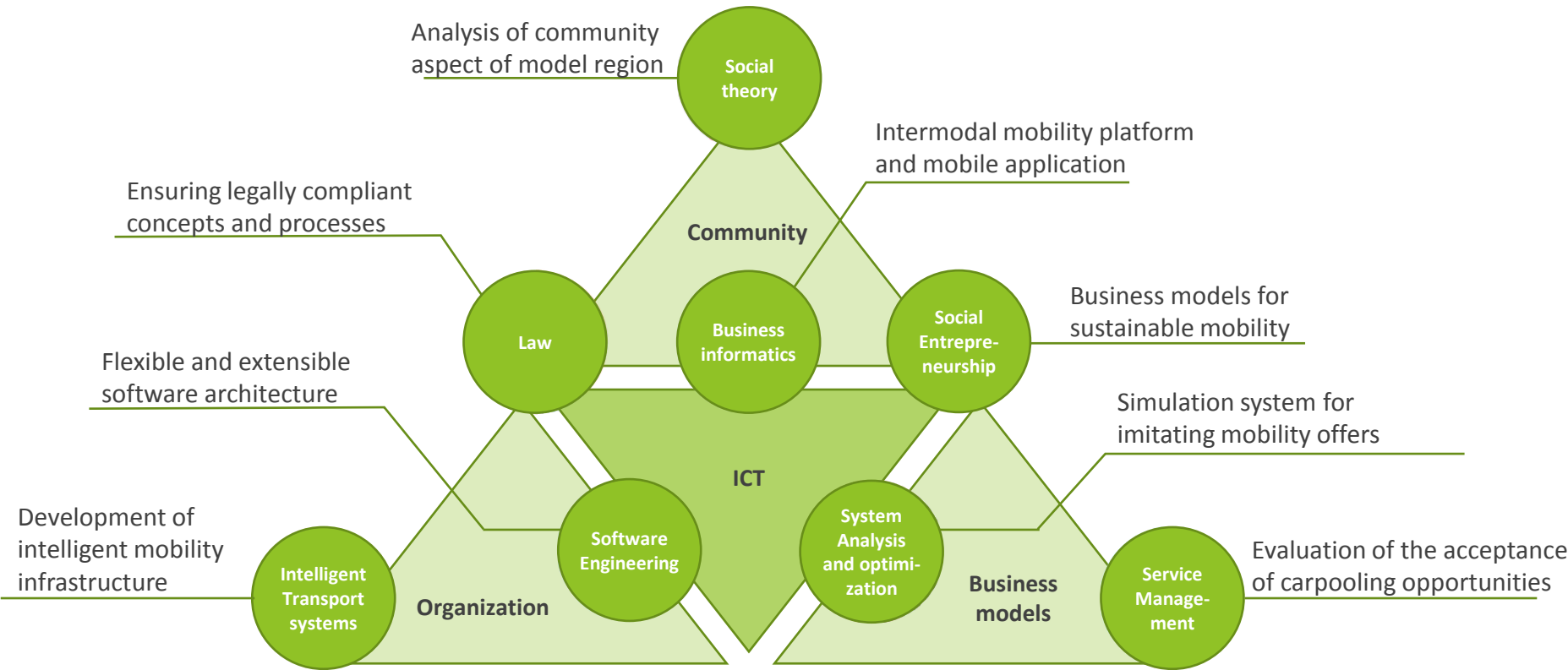
Funded by the Lower Saxony
Ministry of Science and Culture
and the Volkswagen Foundation

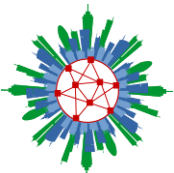


Based on the
"Showcase Electric Mobility
Lower Saxony"



Project Consortium





Why is our focus on rural regions?

... about 90% of the area of Germany are rural regions

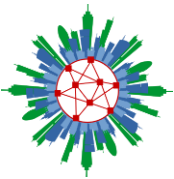
... more than 50 Million people are living in rural regions

... 90% of the households owing at least one car (in rural regions)

... age and costs main reasons (75%) for abandonment of private cars

70 to 90% of public transport trips in rural areas are school traffic





Which are the central research questions?

How can we **satisfy mobility needs** in rural areas based on **social structures** under consideration of **sustainability and purpose-orientation**?

Social

How to increase the community idea from a sociological and psychological perspective?

Organizational

Which organizational concepts are suitable for sustainable mobility models for social self-organization?

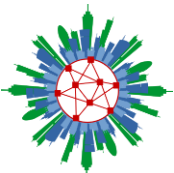
Research dimensions

Economical

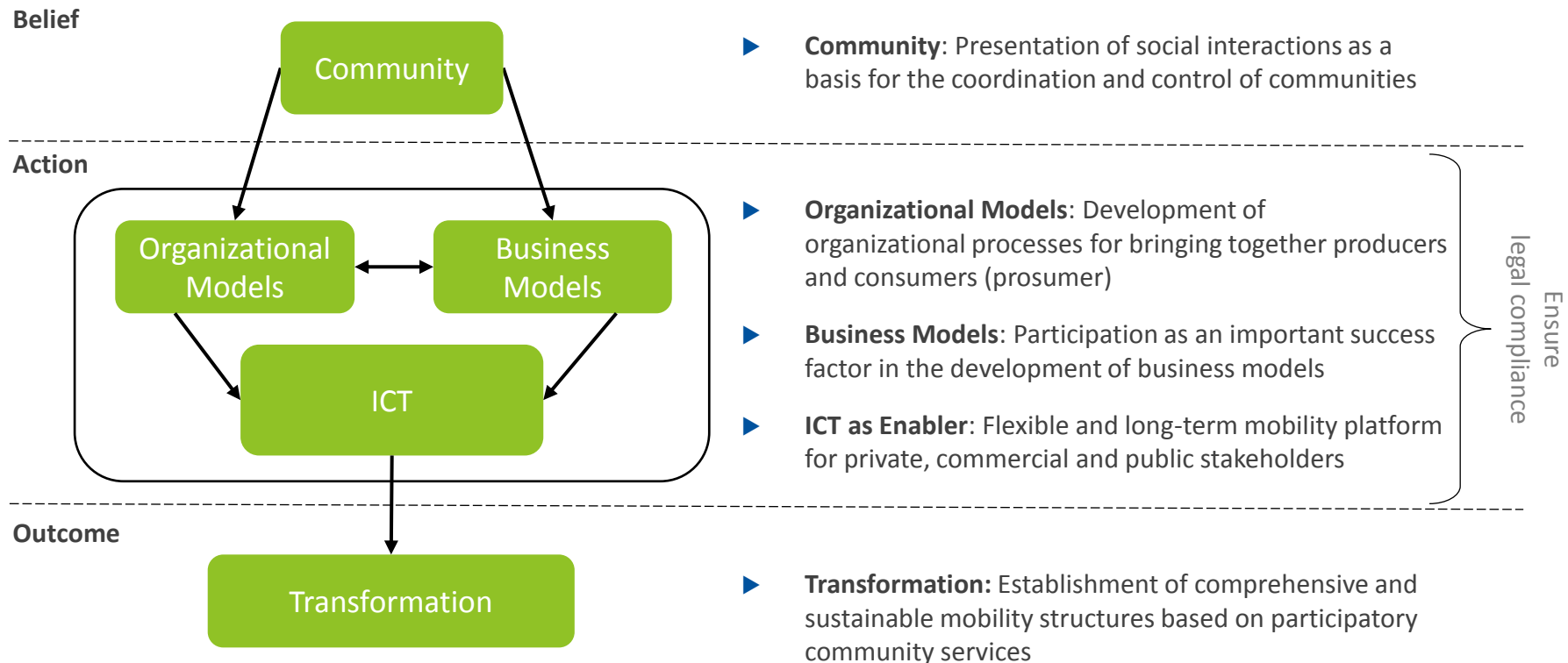
Which business models are suitable for supporting sustainable mobility and prosumer relationships?

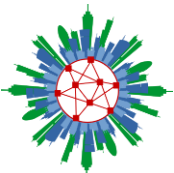
Technical

How can flexible, intelligent and heterogeneous ICT services support rural mobility?



How do we proceed?





What are the main outcomes?

Project results

Action	Objective
Communication Platform for self organization (ICT-supported)	Barrier-free and efficient mobility
Usage instead of possession "Shareconomy"	Reduction of resource consumption and emissions
Mobilization of all population strata (Community-Model)	Social Participation
Innovative Business Models	Enabling Prosumer-transactions relations

Methods

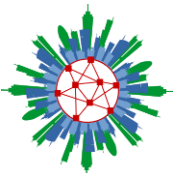
Workshops
 Pilot project
 Consulting
 Publications



Prototypes
 Civic forum
 Education
 Simulation

Project impact

trough ...	on ...
Awareness and inclusion	Consumers, Citizen, Companies, Associations, Municipalities
Prototypical Implementation/ Evaluation	Consumers, Citizen, Companies, Associations, Municipalities
Scientific distribution	Universities, Research institutions
Consulting	Legislator, Municipalities, Companies



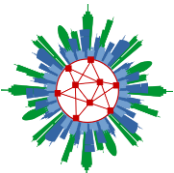
Wesermarsch county is our central model region

Thin population: 108 inhabitants/km²
(Average Lower Saxony: 164 inhabitants/km²)

Three federal highways (yellow)
combine most traffic volume

Cities of Oldenburg, Bremen and Bremerhaven
as important regional centers (commuter traffic!)



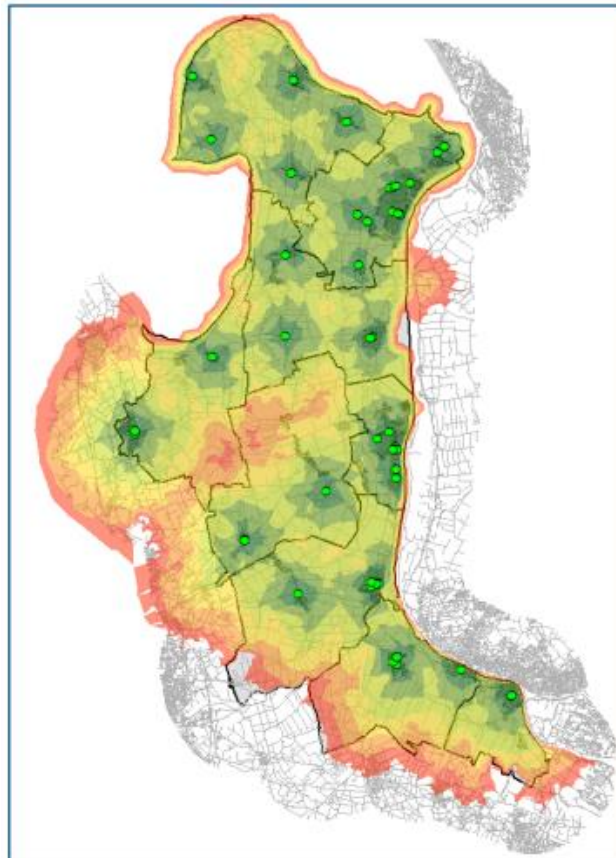
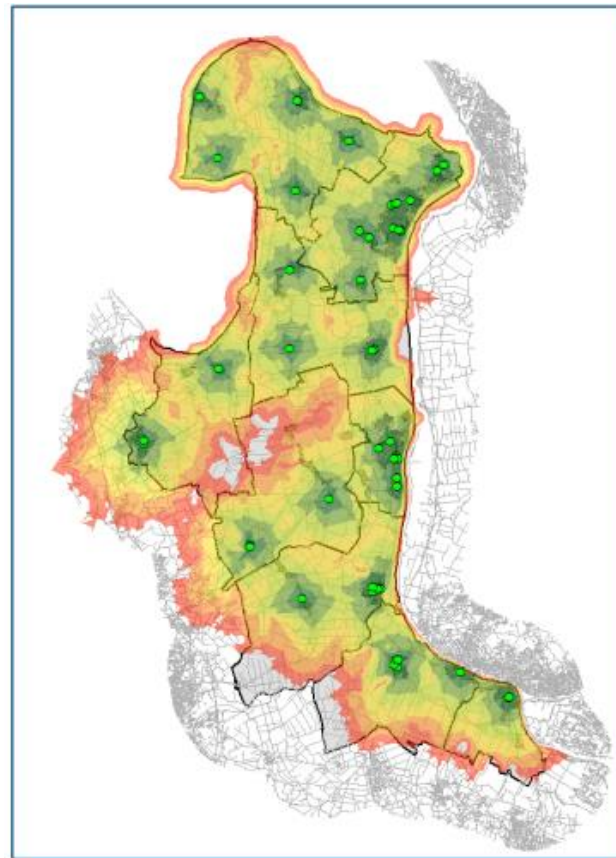
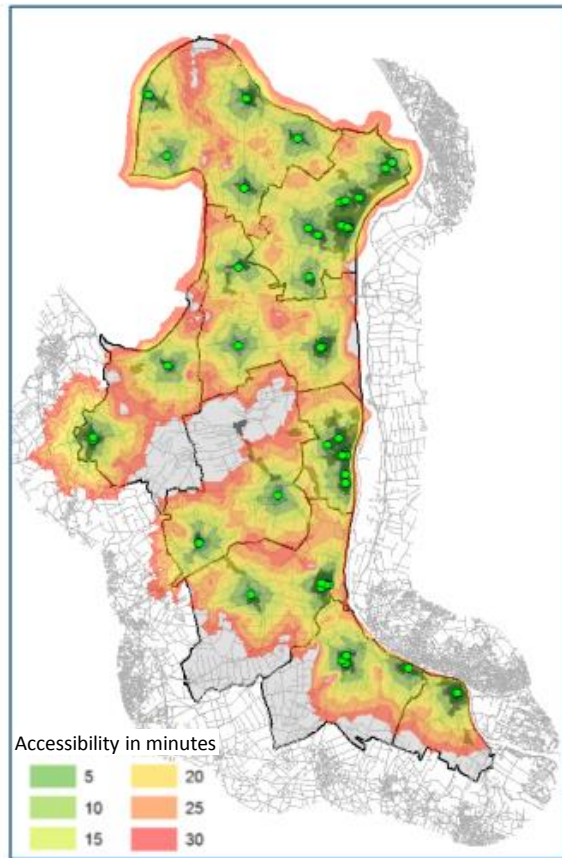


Radius extension by pedelegs

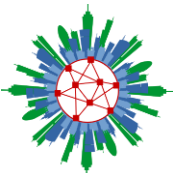
Slow Cycling (11,5 km/h)

Fast Cycling (16 km/h)

Pedelec (20km/h)



Source: IGES Institut, BMVI-Modellvorhaben „Versorgung & Mobilität“ - Modellregion Landkreis Wesermarsch



What questions do we ask ourselves to improve mobility in rural regions?

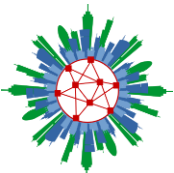
What are people's *attitudes* towards *carpooling*?

How can *existing car capacities* be used better?

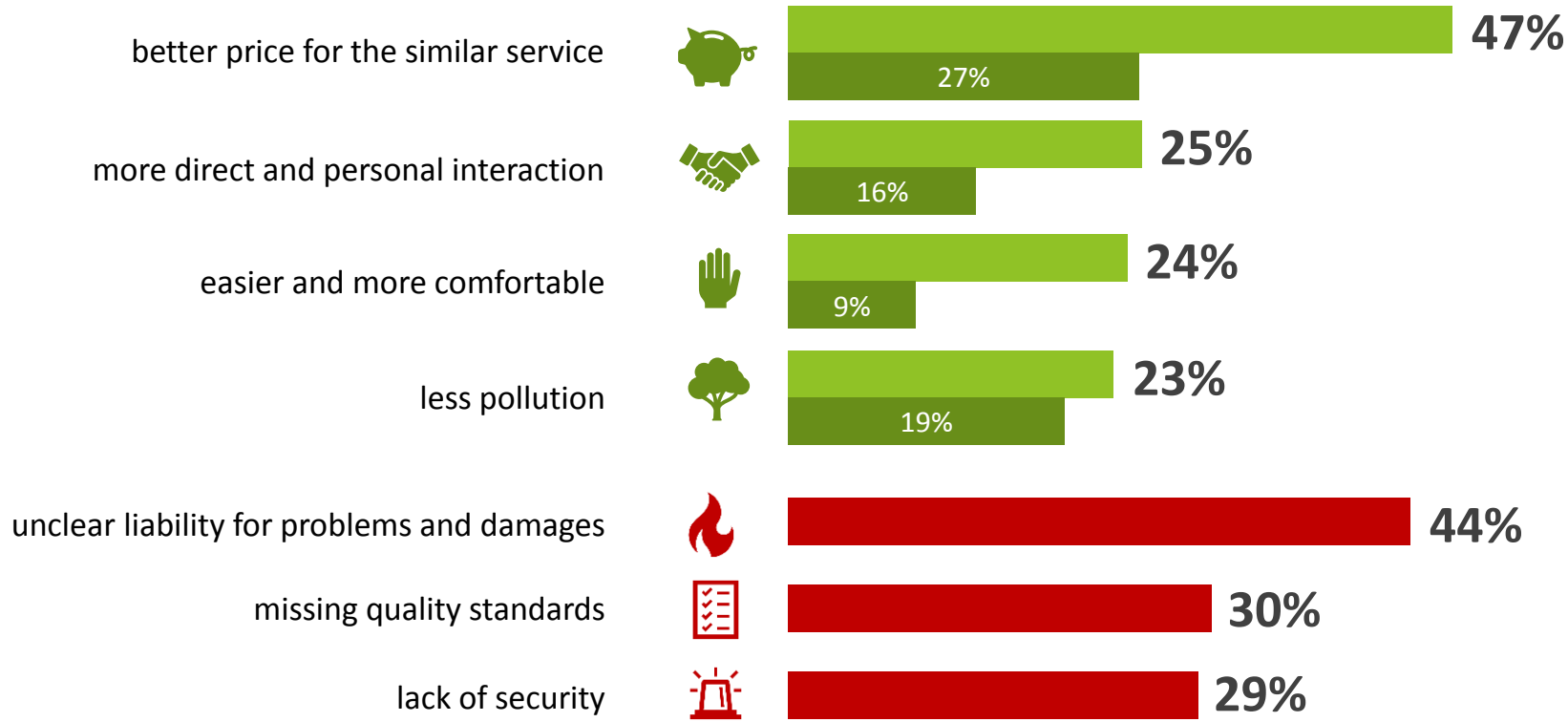


How can similar *interests* and mobility *demands* be *brought together*?

What contribution can *information and communication technology* make to improving mobility?

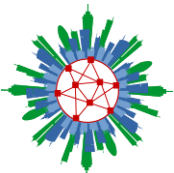


Perceived advantages and disadvantages of Sharing Economy



User Non-User

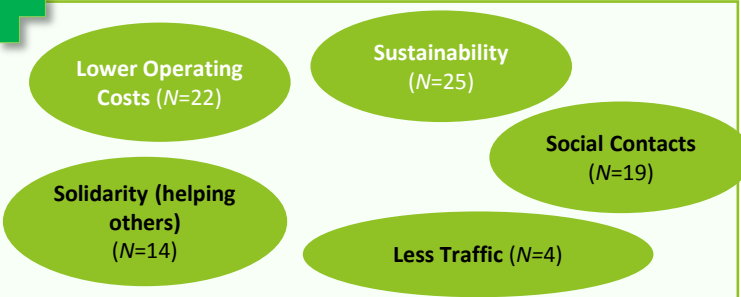
n = 1000
Source: PwC, 2018



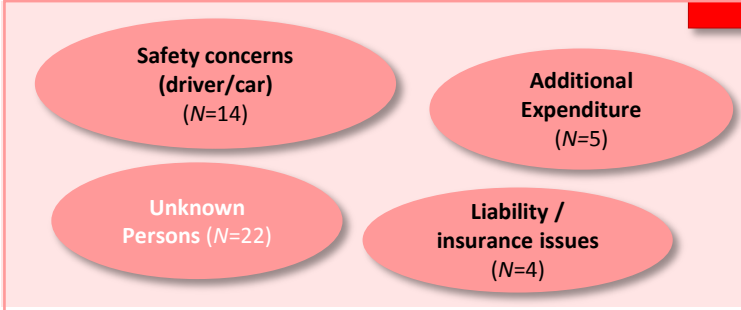
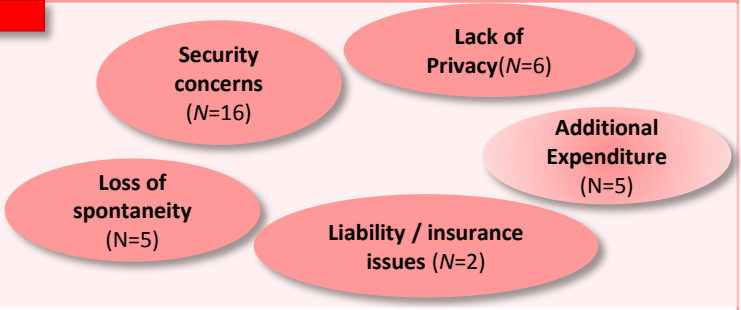
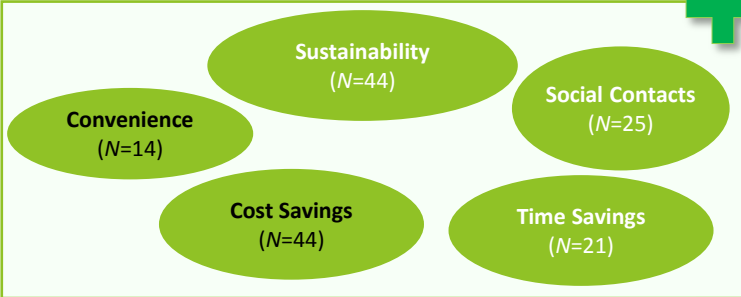
Car Pooling Motivation and Obstacles

Comparison Driver & Passenger

Driver



Passenger



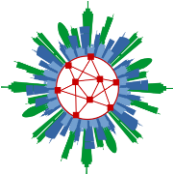
Further obstacles Driver perspective

- Expenditure for payment (also take advantage of driver by too little cash / inappropriate change)
- Marking of smoking vehicles necessary
- Use of the trunk, taking animals with you → Vehicle pollution

Further obstacles Passenger perspective

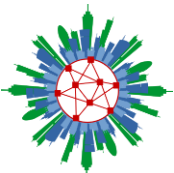
- Holding of agreements (e.g. due important appointments)
- Bring along bulky things (e.g. walking aids) or your own dog
- Incompatibility with job





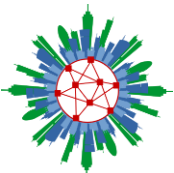
Conclusion of Survey

- From a descriptive point of view, relevant obstacles are mainly
 - **Coordination and coordination effort,**
 - **security concerns,**
 - **social barriers and**
 - **concerns about not being able to access a sufficiently large **carpooling community**, and**
 - **skepticism about the **cost of detours**.**
- Conditions for taking advantage of organizing carpooling opportunities through third parties:
 - Situational and personal conditions: Carpooling on **round trips** (primarily relevant for passengers), tend to be more willing to carpool with **women** and **during the day** (descriptive evaluation).
 - Platform-side conditions: Ensuring a transparent **pricing system**, enabling **direct agreements**, and implementing measures to increase **physical security** and testing the **trustworthiness** and **reliability** of the carpool partners (e.g. platform-side evaluation system).

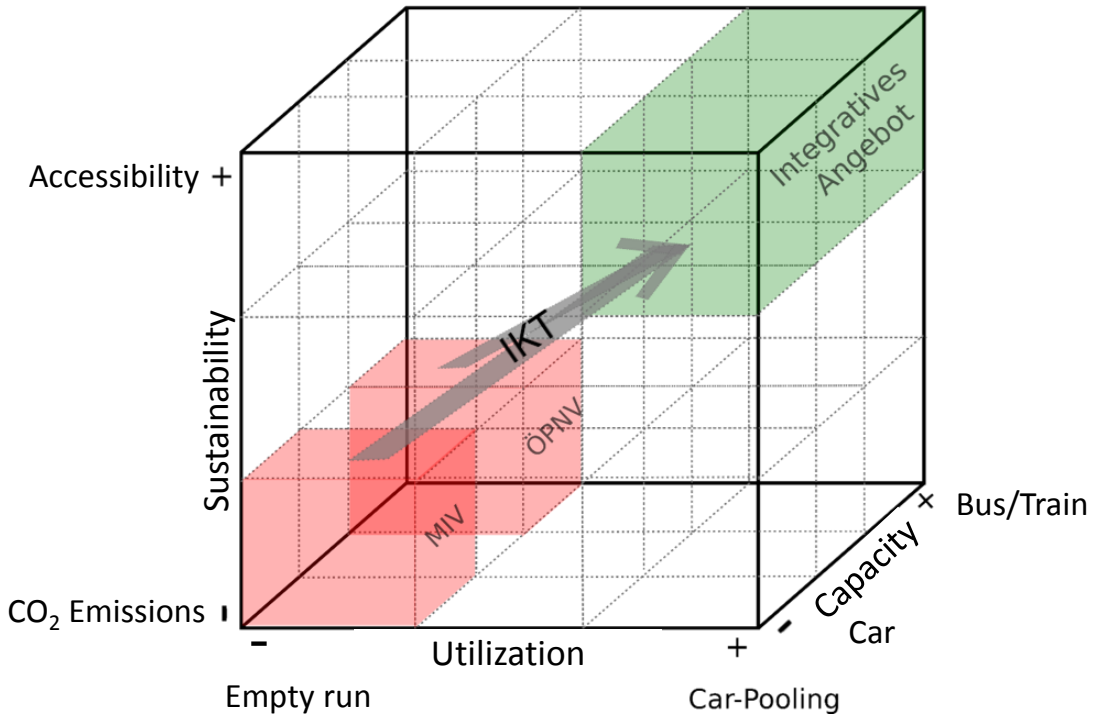


The Mobility Platform



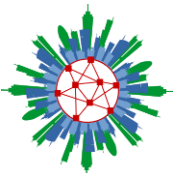


How does the integrative mobility offer emerge?

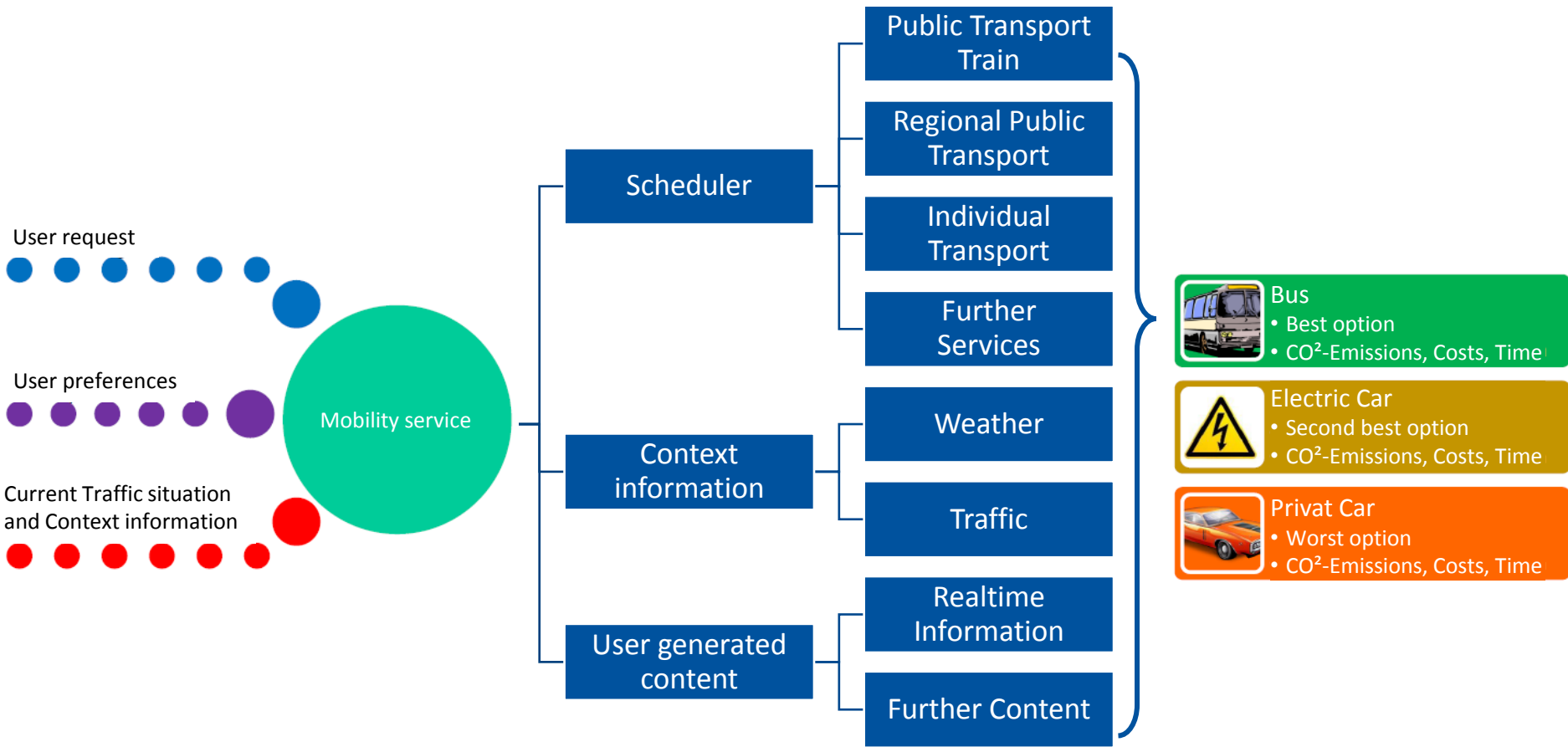


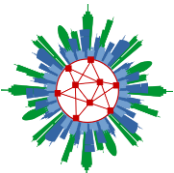
- ▶ Increasing the utilization of means of transport in order to reduce emissions and the total number of vehicles
- ▶ Improving the quality of life by satisfying mobility needs
- ▶ Complexity can only be mastered with ICT, e.g. intermodal mobility chains

Combining existing means of transport and social structures into a sustainable, integrative mobility offer

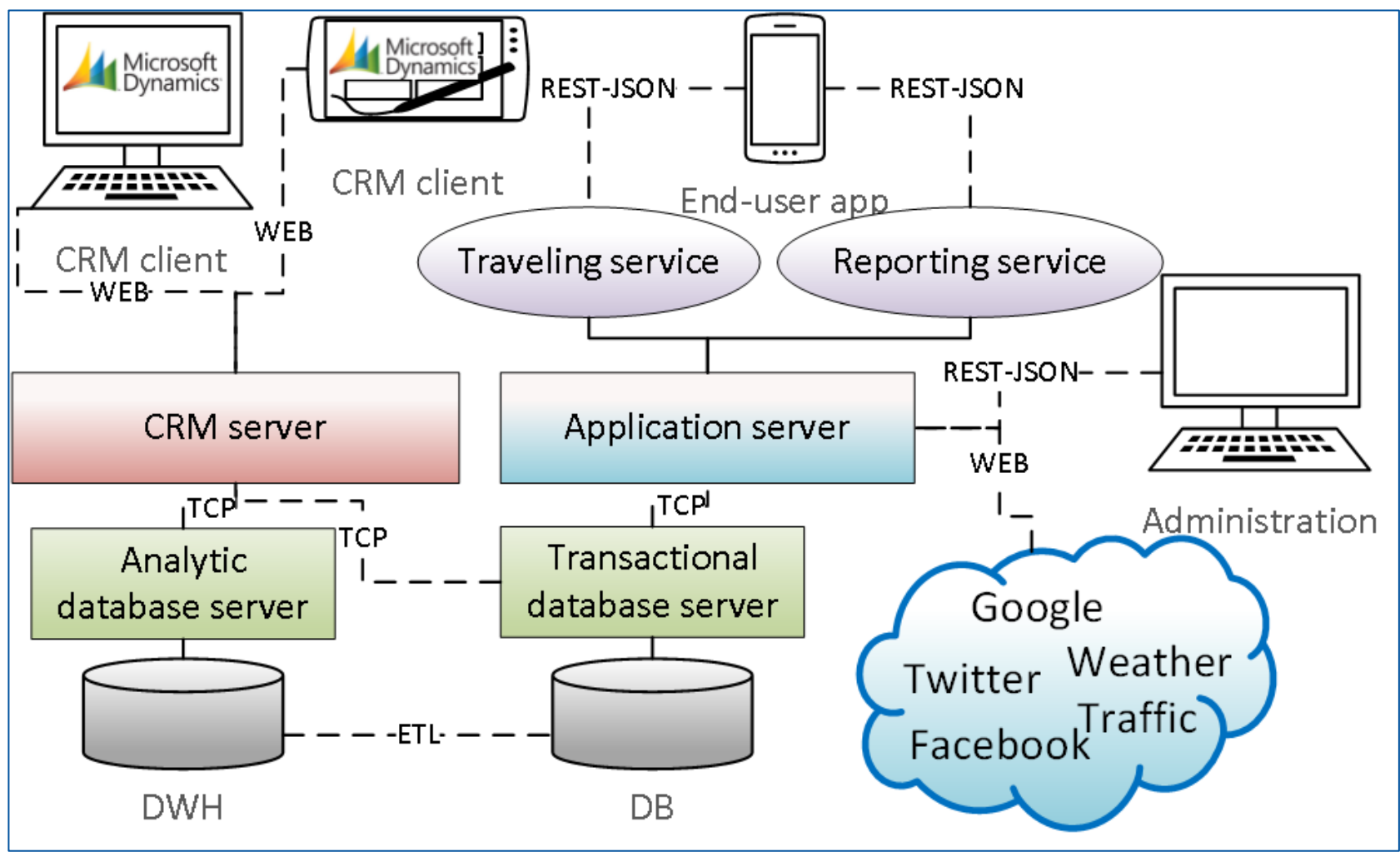


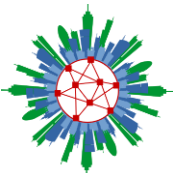
Intermodal mobility platform





Architecture





CRM System

Arbeitsbereich

Meine Arbeit

- Dashboards
- Aktivitäten
- Kalender
- Importe
- Duplikaterkennung
- Warteschlangen
- Artikel
- Berichte
- Ankündigungen

Kunden

- Firmen
- Kontakte

Erweiterungen

- Guyde-Kunden
- Belohnungen
- Belohnungstransaktion...
- Pushnachrichten
- Kennzahlentypen
- Kennzahlensystemtypen
- Kennzahlensysteme
- Kennzahlen
- Cluster
- Werbebotschaften
- Reiseverbindungen
- Routen

Arbeitsbereich

- Vertrieb
- Marketing
- Service
- Einstellungen
- Ressourcencenter

Dashboard: **Guyde Data Warehouse - Zeitskalierung**

Startzeitpunkt: Kalender 2015 Endzeitpunkt: Kalender 2016

1 von 1 Suchen | Weiter

Übersicht **Verkehrsmittel** Nachhaltigkeit Bonuspunkte Clustering Vergleiche

Bericht erstellt am 25.08.2016 12:49:11 von SCHAUFENSTERAD/Alexander

Angefragte Routen

Anzahl der akzeptierten Routen: **294**

Anzahl der angefragten Routen: **2913**

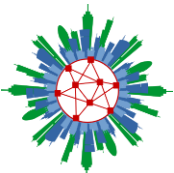
Beliebteste Abfahrtsorte

Ort	Anzahl
Oldenburg	31
Kluse	10
Braunschweig	13
Leer (Ostfriesland)	1

Verkehrsmittelanteil (Zurückgelegte km)

Gesamtanzahl der Kilometer: **15.149,49 km**

Nutzung der Plattform (Nutzer)



Integration of Stakeholders





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