Interreg CENTRAL EUROPE

Co-funded by the European Union

Drive2Transform

D1.2.2 TRANSFORMATION SCENARIOS MODELS

Version 1

05 2025

D1.2.2 TRANSFORMATION SCENARIOS MODELS

Document Information

Project Number	CE0200679	Acronym	**Drive2Transform**
Full Title		Integrative Regional Approaches for the Transformation of the Automotive Industry	
Project URL		https://www.interreg-central.eu/projects/drive2transform/	

Deliverable	**Number**	**D.1.2.2**	**Title**	**Transformation Scenario Models**
Work Package	Number	WP1	Title	ESTABLISHMENT OF TRANSNATIONAL AUTOMOTIVE OPEN TRANSFORMATION PLATFORM

Date of Delivery	Contractual	31.05.2025	Actual	
Status		Draft		
Nature		report ■ demonstrator □ other □		
Dissemination level		Public ■ restricted □		

Authors (Partner)				
Responsible Author	Name	Doris Straub Stefan Hopfer	E-mail	doris.straub@biz-up.at stefan.hopfer@biz-up.at
Partner	Biz-Up		Phone	+43 664 8520 902
Contributors			All Partners	
Project partner			Name	
Techbase Regensburg			Steve Schumann, Anne Häner	
Biz-Up			**Doris Straub, Stefan Hopfer**	
RDA Pilsen			Filip Tikal	
PU			**Lukas Waidelich**, Luc Schmerber, Bernhard Kölmel	
PBN			Zsofia Kocsis	
NOI			Johannes Brunner	
KSSE			Luk Palmen, Ewa Dudzic-Widera, Łukasz Górecki	
CCIS			Klara Grašič	
SEVA			Silvia Miháliková	

Document History			
Version	Date	Main Modification	Entity
Draft 1	18.05.2025	First Draft	all
1st Review	27.05.2025	Partners review	all
1st draft upload		Update of all review comments	

Disclaimer

This document reflects only the author's view. Responsibility for the information and views expressed therein lies entirely with the authors. The Interreg CENTRAL EUROPE managing authority and joint secretariat are not responsible for any use that may be made of the information it contains.

Content

1. Introduction

1.1 Background and Objectives

The aim of Deliverable D1.2.2 is to support the creation of a **Transnational Automotive Open Transformation Platform** by developing a comprehensive set of **regional and transnational transformation scenarios**. These scenarios are intended to illustrate how key megatrends—**Electrification, Connectivity, Automation, and the Platform Economy**—may transform the automotive sector and its value chains across Central Europe over the coming decade.

Building on previous project activities—particularly the **regional transformation readiness assessments** and extensive **stakeholder consultations**—this deliverable employs a **structured, participatory methodology** designed to engage stakeholders from across sectors and regions. The process consists of **three interconnected workshops**, each with a distinct role in developing and aligning regional and transnational perspectives on the future of the automotive industry. The workshops were developed on a th**ree-ttep approach:**

1. **Regional Workshop I - Scenario Development (Foresight for 2035)**

   The first workshop, held separately in each partner region, aimed to explore and define possible **regional transformation scenarios for the year 2035**. Participants assessed region-specific trends, opportunities, and risks by identifying key **influencing factors** and **drivers of change**, including economic, technological, environmental, and policy-related dimensions. The goal was to develop plausible and differentiated regional narratives that reflect both the current status and anticipated developments within the automotive ecosystem.

2. **Regional Workshop II - Persona Creation and Future Business Visioning**

   In the second regional workshop, participants were tasked with **concretizing the scenarios** developed in the first round. This was achieved by creating **company personas**—archetypes of typical businesses operating within each region's automotive sector. These personas served as the foundation for imagining realistic **future visions for 2035**, including the identification of **potential products and services** that such companies might offer in response to the defined transformation pathways. This exercise helped translate strategic foresight into actionable business innovation ideas.

3. **Transnational Workshop III - Scenario Alignment and Consolidation**

   The third workshop brought together representatives from all participating regions for a **transnational dialogue**. The objective was to compare regional scenarios and align them into **shared transformation scenarios** for each of the four thematic areas: **Electrification, Connectivity, Automation, and the Platform Economy**. Through moderated discussions, partners co-created **consensus-based, cross-border scenarios** that reflect both the diversity of regional contexts and the common challenges and opportunities facing Central Europe's automotive industry.

Across all workshops and activities, the four megatrends—**Electrification, Connectivity, Automation, and the Platform Economy**—functioned as **cross-cutting thematic pillars**. They shaped not only the scenario-building process but also informed stakeholder engagement, innovation planning, and policy alignment. These themes were chosen for their strategic relevance to the future of mobility and their disruptive potential in reshaping business models, supply chains, and workforce dynamics across the region.

The workshop series involved a wide range of stakeholders from the private sector (particularly SMEs), research institutions, business support organizations (BSOs), and public authorities. This diverse representation ensured that the scenarios were grounded in **practical realities**, enriched by **scientific insight**, and aligned with **regional policy frameworks**. The collaborative format of the workshops fostered mutual learning, built trust among regional actors, and enhanced ownership of the scenario outcomes.

The results of this deliverable serve several key purposes:

- **Strategic Orientation**: The scenarios provide a forward-looking framework that enables stakeholders to anticipate change, prioritize innovation areas, and guide strategic development (relevant to A1.3 and A3.3).
- **Stakeholder Engagement**: The participatory approach strengthens cross-sectoral collaboration and fosters a shared understanding of transformation dynamics (relevant to A2.1 and A2.2).
- **Policy Support**: The evidence-based scenarios support regional and transnational policy development in areas such as industrial strategy, innovation funding, workforce planning, and infrastructure development (relevant to A2.3).
- **Business Innovation**: For SMEs and other industry players, the scenarios illuminate likely market shifts, technology trends, and business model innovations, providing a valuable tool for decision-making and investment planning (relevant to A3.1 and A3.2).

To enhance accessibility and usability, the scenarios and workshop results are presented using a variety of visual and narrative tools, including **CANVAS models**, **personas**, and **Now/Wow/How/Ciao matrices**. These formats were chosen to accommodate the diverse needs of different target groups—from company executives and policymakers to cluster managers and researchers. The visualizations help simplify complex transformation processes and make the insights actionable for day-to-day decision-making.

Deliverable D1.2.2 provides a **robust and verifiable contribution** to the Drive2Transform project's overarching goal: empowering Central European regions to actively shape the future of mobility. By leveraging their unique strengths, addressing vulnerabilities, and engaging in **cross-border collaboration**, these regions can better prepare for systemic transformation and maintain their competitiveness in a rapidly evolving global automotive landscape.

This paper is structured as follows: The second paragraph describes the content, methodology, and outcomes of Workshop 1, which focused on the development of regional transformation scenarios for 2035, including the identification of influencing factors and trends relevant to the regional automotive ecosystems. The third paragraph outlines the process and results of Workshop 2, in which stakeholders developed regional company personas and derived potential future products and services based on the previously defined transformation scenarios. The fourth paragraph presents the key elements of Workshop 3, the transnational workshop, which aimed to align regional scenarios and consolidate them into common European-level transformation scenarios for each of the four thematic areas. The fifth paragraph provides a summary of the deliverable's key outcomes and offers a forward-looking perspective on the next steps in the project. The Annex contains all supporting materials developed throughout the process, including CANVAS models, personas, and other relevant documents.

The detailed methodology, tools, and facilitation approach used in this deliverable are fully documented in **Deliverable D1.2.1**.

1.2 Overview

To guide the creation of regional transformation scenarios and to generate initial product and service ideas for specific Use Case concepts, two structured workshops were held in each participating region.

First Workshop - Scenario Development Regional Level: The first workshop focused on creating a detailed transformation scenario for the local automotive sector, in each of the eight regions. These scenarios were based on the results of the regional Transformational Readiness Model assessments and a 2019 study on automotive industry transformation conducted in Upper Austria. The outcomes included concrete narratives describing how regional automotive ecosystems might evolve by 2035.

Second Workshop - Company Persona and Vision: In the second workshop, participants developed a company persona that represented a typical business operating in their region. Using this persona, they created a forward-looking vision for the year 2035, including specific products and services the company could offer in alignment with the previously developed regional scenario. This vision served to translate strategic transformation into practical business opportunities.

Third Workshop -Scenario Development Transnational Level: The third workshop focused on developing a detailed transformation scenario for the automotive sector in Central Europe. The objective was to define a shared, forward-looking scenario that could plausibly unfold across Europe by the year 2035. This transnational workshop brought together experts and project partners during the consortium meeting in Budapest to collaboratively align regional insights and co-create a common European vision for the future of industry.

Details such as workshop dates, the number of participants, and the distribution across the regions are provided in the two following tables.

Table 1: Overview First Regional Workshop (Workshop I) by D2T Partners – Dates and Participants

Partner	Date	Participants			
		Total	Companies	Research	BSOs
CML, Germany	20.02.2025	25	20	1	4
Biz-Up, Austria	27.02.2025	11	8	1	2
RDA Pilsen, Czech Republik	04.03.2025	14	4	4	6
PU, Germany	20.01.2025	11	8	0	3
PBN, Hungary	24.04.2025	32	22	2	8
NOI, Italy	25.02.2025	10	8	0	2
KSSE, Poland	07.02.2025	13	6	1	6
	11.02.2025	22	12	3	7
CCIS, Slovenia	30.1.2025	27	25	0	2
SEVA, Slovakia	19.2.2025	10	10	0	0
Total participants		175	123	12	40

As part of a collaborative effort to develop region-specific transformation scenarios, a total of 10 regional workshops were conducted across the participating countries, with KSSE hosting two sessions to address distinct regional needs. These workshops brought together a diverse mix of 175 stakeholders 123 from the corporate sector, 12 research institutions, and 40 business support organizations (BSOs), ensuring a broad and representative exchange of perspectives. The workshops aimed to develop transformation scenarios tailored to the unique conditions, challenges, and opportunities of each region; define long-term business visions for the year 2035, including potential products and services aligned with regional transformation goals; and foster meaningful cross-sectoral dialogue to support strategic planning and coordinated regional development. This inclusive and participatory process laid the groundwork for the subsequent development of use case ideas and future-oriented strategies.

Table 2: Overview Second Regional Workshop (Workshop II) by D2T Partners – Dates and Participants

Partner	Date	Participants			
		Total	Companies	Research	BSOs
CML, Germany	05.05.2025	25	21	1	3
Biz-Up, Austria	03.04.2025	8	6	0	2
RDA Pilsen, Czech Republik	22.05.2025	7	0	2	5
PU, Germany	17.04.2025	7	4	0	3
PBN, Hungary	24.04.2025	32	22	2	8
NOI, Italy	16. 05. 2025	11	8	1	2
KSSE, Poland	08.05.2025	22	16	3	3
CCIS, Slovenia	16.4.2025	18	12	0	6
SEVA, Slovakia	30.4.2025	10	10	0	0
Total participants		140	99	9	32

As a continuation of the regional transformation process, a second round of workshops was conducted by the D2T project partners, focusing on translating regional scenarios to derive first practical business concepts. These workshops were designed to create company personas that reflect typical businesses within each region, serving as the foundation for envisioning realistic and regionally relevant future trajectories. Participants worked collaboratively to define what a representative company might look like in their regional context—Based on these personas, participants then developed future-oriented business visions for the year 2035, outlining possible and relevant products and services that such companies could realistically offer in line with the transformation scenarios defined in the first round of workshops.

The third workshop served as a central forum for transnational exchange, bringing together 27 representatives from all participating regions across Central Europe during our in-person meeting in Budapest. The primary aim of the workshop was to facilitate a structured dialogue in which regional scenario drafts could be reviewed, compared, and refined into cohesive, shared transformation scenarios. These efforts focused on four key thematic areas critical to the future of the automotive sector: Electrification, Connectivity, Automation, and the Platform Economy.

A wide range of stakeholders actively participated in the workshop, including representatives from leading companies, renowned research institutions, and BSOs. This diverse group brought a breadth of perspectives

and practical expertise to the table, contributing to robust and balanced scenario development. Although many experts had initially confirmed their attendance, several had to cancel at short notice due to illness or other unforeseen circumstances, resulting in a number of no-shows. Nevertheless, the workshop benefited from strong engagement among those present.

Moderated by **Stefan Hopfer, BIZUP,** and **Lukas Waidelich, PU**, the sessions fostered open and constructive dialogue. Participants engaged in intensive discussions to surface regional insights, identify synergies, and reconcile differing viewpoints. The scenarios were debated thoroughly, refined collaboratively, and ultimately shaped into coherent outputs. A key success factor was the groundwork laid by the national workshops held in advance, which enabled each D2T partner to bring in their regional perspective. These regional insights were essential for embedding local particularities into a broader Central European context.

Together, the D2T consortium succeeded in jointly developing transnational scenarios — the result of hard discussions, careful refinement, and collaborative effort. The outcome was a set of harmonized transformation pathways that reflect a shared vision for the future of mobility in Central Europe, while remaining grounded in the realities and strengths of each participating region.

2. Regional Workshop I: Transformation Scenario

2.1 Electrification

2.1.1 Factors Rating

Table 3: Factors Rating 2.1 Electrification

Partner	Factor			
	1. Electrification of the powertrain (BEV)	2. Charging infrastructure for BEV	3. Vehicle platform and modular strategies	4. Energy transition and sector coupling
CML, Germany	5	7	0	6
Biz-Up, Austria	6	5	3	4
PU, Germany	4	9	2	3
PBN, Hungary	17	9	7	7
NOI, Italy	8	8	5	7
KSSE, Poland	9	2	7	2
CCIS, Slovenia	12	8	6	3
SEVA, Slovakia	8	7	7	8

The table presents the results of a **factors rating exercise** conducted during the third transnational workshop, in which project partners assessed the **relevance and impact of key transformation factors** for the future of the automotive sector in Central Europe. Each partner rated four strategic factors on a numerical scale, indicating their perceived importance in shaping the sector's development by 2035. The four assessed factors were:

1. **Electrification of the powertrain (Battery Electric Vehicles - BEVs)**
2. **Charging infrastructure for BEVs**
3. **Vehicle platform and modular strategies**
4. **Energy transition and sector coupling**

The ratings, provided by each partner, reflect regional perspectives on the transformative potential and urgency of these factors. Notable observations include:

- **Electrification of the powertrain** received consistently high ratings, with particularly strong emphasis from PBN (Hungary, 17) and CCIS (Slovenia, 12), suggesting widespread recognition of its central role in the mobility transition.
- **Charging infrastructure** was also seen as a key enabler, although with more variability—PU (Germany) and PBN (Hungary) ranked it highest (9), while KSSE (Poland) rated it as less critical (2).
- **Vehicle platform and modular strategies** received more moderate ratings across the board, with relatively high emphasis from PBN and SEVA (Slovakia).

- **Energy transition and sector coupling** showed a broader spread of relevance, with SEVA (Slovakia, 8) and PBN (Hungary, 7) highlighting its importance, while PU (Germany, 3) and KSSE (Poland, 2) considered it less pressing.

2.1.2 Assumption Choosing & Rating

Table 4: Rating Factor: 1. Electrification of the powertrain (BEV)

Partner	Factor: 1. Electrification of the powertrain (BEV)		
	Assumption A: Global BEV-Boom	Assumption B: Continued open-technology development of powertrain concepts	Assumption C: BEV niche solution and shift to hybrid powertrains with hydrogen
CML, Germany	2	5	2
Biz-Up, Austria	4	12	0
PBN, Hungary	20	11	11
NOI, Italy	5	5	0
KSSE, Poland	6	9	0
CCIS, Slovenia	15	6	3
SEVA, Slovakia	8	2	0

This table presents the results of a strategic assessment conducted during the third transnational workshop, focusing on possible **future trajectories for the electrification of the powertrain**, particularly the role of Battery Electric Vehicles (BEVs). Project partners were asked to evaluate three distinct **assumptions** that represent divergent development paths for the automotive industry. Each assumption was rated according to its perceived **plausibility and regional relevance by 2035**. The assessed assumptions were:

1. **Assumption A: Global BEV Boom** – Full-scale adoption of BEVs dominates global markets, phasing out internal combustion engines.
2. **Assumption B: Continued open-technology development** – Multiple powertrain concepts (BEV, hybrid, hydrogen) coexist, with ongoing technological innovation and regional adaptation.
3. **Assumption C: BEV remains a niche solution** – BEVs do not reach mass adoption; hybrid and hydrogen solutions gain dominance, especially in specific use cases.

Key observations from the ratings include:

- **Assumption A (Global BEV Boom)** received the highest ratings from PBN (Hungary, 20) and CCIS (Slovenia, 15), indicating strong expectations in these regions for BEVs to become the dominant powertrain technology. Most other partners assigned moderate values (e.g., CML with 2, NOI with 5), reflecting more cautious optimism.
- **Assumption B (Open-technology development)** was widely accepted across regions, with moderate to high scores from Biz-Up (Austria, 12), KSSE (Poland, 9), and PBN (11). This reflects a common

belief in the **coexistence of multiple technologies**, depending on use case, policy, and infrastructure readiness.

- **Assumption C (BEV as niche, shift to hybrids/hydrogen)** received fewer endorsements. It was only rated by some partners, with modest scores (e.g., CML and PBN at 2, CCIS at 3). This suggests that most regions see full electrification or technological openness as more likely futures than a fallback to hybrids.

Table 5: Rating Factor: 2. Charging infrastructure for BEV

Partner	Factor: 2. Charging infrastructure for BEV		
	Assumption A: Comprehensive implementation of charging infrastructure in public and non-public spaces	Assumption B: Non-public charging stations make up the majority of charging points	Assumption C: Slow expansion of charging infrastructure in public and non-public spaces
CML, Germany	3	5	0
Biz-Up, Austria	6	1	2
PU, Germany	7	4	3
NOI, Italy	6	2	2
CCIS, Slovenia	6	4	2
SEVA, Slovakia	3	7	0

This table presents the results of a strategic assessment focused on possible **development pathways for charging infrastructure** for Battery Electric Vehicles (BEVs), conducted during the third transnational workshop. Project partners evaluated three distinct **assumptions** about how the availability and distribution of charging infrastructure may evolve by 2035. These assumptions reflect different policy, market, and behavioral scenarios that will impact the speed and success of BEV adoption. The assessed assumptions were:

1. **Assumption A: Comprehensive implementation** – Widespread expansion of charging infrastructure in both public and private spaces ensures full coverage and user convenience.
2. **Assumption B: Dominance of non-public charging** – The majority of charging points are installed in private or semi-private settings (e.g., homes, company fleets, workplaces), with limited public infrastructure.
3. **Assumption C: Slow expansion** – Charging infrastructure grows at a slow pace, creating gaps in availability and potentially hindering BEV adoption.

Key findings include:

- **Assumption A (Comprehensive implementation)** was widely seen as a desirable and realistic scenario, receiving mid-to-high scores from most regions: PU (Germany, 7), NOI (Italy, 6), CCIS

(Slovenia, 6), and Biz-Up (Austria, 6). This reflects a general optimism about infrastructure planning and public-private cooperation.

- **Assumption B (Non-public charging dominates)** received a strong score from SEVA (Slovakia, 7) and moderate values from others, including CML (Germany, 5) and PU (Germany, 4). These results suggest that many regions see **private-sector and household-based charging** as a key driver of BEV viability, particularly in less densely populated or infrastructure-limited areas.
- **Assumption C (Slow expansion)** was generally rated low, with most partners assigning scores of 2 or 3. This suggests that while slow progress is recognized as a risk, it is not widely expected or accepted as the most likely scenario. Biz-Up (Austria), NOI (Italy), and CCIS (Slovenia) each gave it a low but non-zero rating, indicating some concern in specific contexts.

Table 6: Rating Factor: 3. Vehicle Platform and modular strategies

Partner	Factor: 3. Vehicle Platform and modular strategies		
	Assumption A: Electric vehicles are built on the basis of super-flexible platforms	Assumption B: Electric vehicles and combustion engines vehicles are based on separate platforms	Assumption C: Electric vehicles and combustion engines vehicles are largely based on common modules
Biz-Up, Austria	3	5	3
NOI, Italy	7	1	3
KSSE, Poland	4	9	4
CCIS, Slovenia	7	5	0
SEVA, Slovakia	7	2	1

This table presents the results of a strategic evaluation conducted during the third transnational workshop, focusing on potential **platform and modular strategies** in future vehicle development. As the automotive industry shifts toward electrification and software-driven architectures, partners assessed three assumptions about how vehicle platforms for electric and combustion engine vehicles might evolve by 2035. These assumptions were rated based on their perceived plausibility and relevance within each region's industrial and innovation context. The assessed assumptions were:

1. **Assumption A: Super-flexible EV platforms** – Electric vehicles are increasingly developed on highly adaptable, dedicated platforms that allow for a wide range of models and features.
2. **Assumption B: Separate platforms for EVs and combustion vehicles** – The industry maintains distinct development tracks for electric and combustion vehicles, optimizing each for different performance and cost factors.
3. **Assumption C: Common modules across powertrains** – Both electric and combustion vehicles are increasingly built using shared modules and components, prioritizing cost efficiency and flexibility.

Key insights from the partner ratings include:

- **Assumption A (Super-flexible EV platforms)** received relatively strong support from several partners, with NOI (Italy), CCIS (Slovenia), and SEVA (Slovakia) each rating it 7. This suggests a broad belief in the strategic importance of dedicated, flexible EV architectures to support innovation and scalability.
- **Assumption B (Separate platforms)** received the highest rating from KSSE (Poland, 9), reflecting a regional expectation that parallel platform strategies will continue for some time, possibly due to industrial structure or transitional market dynamics. Biz-Up (Austria, 5) and CCIS (5) also acknowledged this pathway as viable.
- **Assumption C (Common modular strategies)** was consistently rated in the mid-range by most partners, but with notably low support from SEVA (Slovakia, 1), suggesting a divergence in regional views on how much component sharing is feasible or advantageous in a dual-powertrain context.

Table 7: Rating Factor: 4. Energy transition and sector coupling

Partner	Factor: 4. Energy transition and sector coupling		
	Assumption A: Successful sector coupling, high proportion of renewable energies	Assumption B: Individuals and pilot projects drive progress	Assumption C: low energy transition, evolutionary development
CML, Germany	2	4	3
Biz-Up, Austria	3	8	0
NOI, Italy	5	5	0
SEVA, Slovakia	2	8	0

This table captures the results of a strategic assumptions rating related to the **energy transition and the coupling of energy and mobility sectors**, as assessed during the third transnational workshop. As the automotive industry becomes increasingly reliant on renewable energy sources and integrated energy systems, project partners evaluated three possible **development paths** for the evolution of energy systems by 2035. Each assumption reflects different levels of ambition, coordination, and systemic change, and was rated based on its expected relevance and likelihood within each regional context. The assumptions assessed were:

1. **Assumption A: Successful sector coupling with high renewable energy share** – Strong political will, supportive regulation, and technological advancement lead to fully integrated, renewable-based energy and mobility systems.
2. **Assumption B: Bottom-up progress driven by individuals and pilot projects** – Innovation and experimentation are led by local actors, resulting in incremental progress with uneven implementation across regions.
3. **Assumption C: Low transition, evolutionary development** – The energy transition proceeds slowly, marked by limited integration and continued reliance on conventional energy systems.

Key insights include:

- **Assumption A (Successful sector coupling)** received relatively low to moderate ratings, with NOI (Italy, 5) providing the most optimistic outlook, while SEVA (Slovakia) and CML (Germany) rated it lower (2). This indicates **limited confidence** in full-scale, top-down sector integration by 2035.
- **Assumption B (Bottom-up progress)** received the **strongest support across all partners**, particularly from Biz-Up (Austria, 8) and SEVA (8), suggesting that many regions see **pilot projects, local leadership, and community-level initiatives** as the primary drivers of innovation in this area.
- **Assumption C (Slow, evolutionary development)** was seen as a possible but less desirable trajectory, with moderate ratings from CML (3) and lower priority from other regions. The fact that several partners did not rate this assumption also suggests it is viewed as **less likely or strategically relevant** in their contexts.

2.1.3 Scenario Description

Table 8: Factors and Assumptions per Partner

Partner	Factors and Assumptions											
	1			2			3			4		
	A	B	C	A	B	C	A	B	C	A	B	C
CML, Germany		x			x						x	
Biz-Up, Austria		x		x				x			x	
PU, Germany				x								
PBN, Hungary	x											
NOI, Italy	x	x		x			x			x	x	
KSSE, Poland	x	x						x				
CCIS, Slovenia	x			x			x					
SEVA, Slovakia	x				x		x				x	

Describing and explaining text per affecting partner on **Scenarios** made by participants in the following – Canva in Appendix.

2.1.3.1. German (Bavarian) Scenario (CML)

During the workshop in Regensburg, the following key elements for the electrification scenario were discussed:

Progress in electrification depends heavily on the availability of charging infrastructure, incentive schemes, and the energy transition. Key stakeholders include municipal utilities, grid operators, OEMs, and policymakers. Major risks were identified as geopolitical instability, dependency on raw materials, and regulatory uncertainty.

CO_2 pricing was highlighted as a key innovation driver.

In terms of technology, energy supply and storage solutions were emphasized.

Regarding implementation, "X-as-a-Service" models, along with sharing and leasing options, are seen as drivers of innovation by lowering ownership rates and improving access to electric mobility.

Overall objective 2030-2035: Sustainable mobility and new digital value creation.

2.1.3.2. Austrian Scenario (Biz-Up)

During the workshop in Austria the following scenario in the topic of electrification was developed:

Private: BEV- dominating technology, will be produced as a separate platform in own factories. Fast charging will work well on the motorway and will be renewable. In urban areas, 11kW will not be possible across the board. Commercial: Last mile will become BEV-dominant, long-distance transport will continue to rely on combustion engines. Companies will supply employees and fleets with their own energy. In industry, renewable energy will increase and the share of hydrogen will grow.

The main **risks** for the industry were seen in geopolitical developments, as well as the shortage of raw materials, customer duties and the overload of the power grid. Nevertheless, there were seen several **regional success factors** and framework conditions to support the development of the scenario for 2035, like charging technology, new components in the powertrain, steering and brakes as well as recycling competences and circular economy. Legislation on a national and European level as well as the automotive and energy industries were named as the key influences and stakeholders for a successful development of the region in the field of electrification. The identified **drivers** to reach the scenario in 2035 were funding calls for electrified local passenger transport, major customers e.g. DHL, Post, DB Schenker, municipalities and the change in society. Also mentioned was the motor-related insurance tax relief for electric cars, which are no longer valid.

The steps that need to be taken to reach the scenario until 2035 were described as the following:

- 2026: adaption of the legal framework to support the regional industry
- 2028: charging infrastructure needs to be available to for a critical mass
- 2030: society is convinced, and BEV lifecycle is more favourable than the one for combustion engines
- 2035: functional circular economy

2.1.3.3. German (Baden-Württemberg) Scenario (PU)

During the first workshop in Pforzheim the following scenario in the topic of electrification was developed:

BEVs become increasingly mainstream, the future of BEV charging infrastructure is evolving rapidly to meet growing demand. Beyond simply expanding coverage, the focus is shifting toward smarter, faster, and more sustainable charging solutions. From high-capacity stations along major transit routes to decentralized private chargers powered by renewable energy, the next generation of infrastructure aims to make electric mobility seamless, reliable, and accessible for everyone—whether in cities, rural regions, or tourist destinations

The Northern Black Forest has developed a robust charging infrastructure for battery electric vehicles (BEVs) across both public and private spaces. Strong public-private partnerships, federal funding, and tax incentives have enabled the installation of high-capacity chargers along highways, in urban centers, and at tourist destinations. Despite early challenges like uneven charger distribution, technical issues, and high costs,

infrastructure has steadily expanded. The region's goals include seamless coverage across rural and urban areas, reliable and fast charging, and integration with local industries and tourism. BEV adoption is driven by government support, rising market demand, environmental goals, and user confidence in charging accessibility. Business models include subscription and pay-as-you-go public charging, home and workplace installations, and dedicated logistics depots for electrified fleets. High-capacity fast-charging stations (up to 2 mW), smart grids, AI-based monitoring, and renewable energy integration form the technological foundation. Workforce training in EV maintenance and grid infrastructure, along with collaboration with vocational institutions, ensures long-term sustainability. With a focus on user needs, sustainability, and economic development, the Northern Black Forest is becoming a model region for electric mobility in rural and tourist-driven areas.

The steps that need to be taken to reach the scenario until 2035 were described as the following:

- **2026:** Secure federal funding, establish partnerships, define key locations, and prioritize rural connectivity
- **2030:** Install pilot fast-charging stations in cities, highways, and tourist hubs; expand private home/workplace charging with tax incentives
- **2035:** Address technical issues, improve station reliability, integrate smart grid technology, and ensure stable charging across all locations; establish the region as a benchmark for electric mobility

2.1.3.4. Hungarian Scenario (PBN)

By 2035, Hungary's automotive supply chain has embraced a large-scale shift toward battery electric vehicles (BEVs), strongly influenced by EU climate targets and the global BEV boom. In the Jászság region—traditionally shaped by white goods manufacturing such as Electrolux—local companies repurpose their electromechanical expertise and manufacturing infrastructure toward components for e-mobility and energy-efficient systems, such as electric powertrains and heat pumps. This green industrial transition brings new job roles, investment opportunities, and skills requirements while reinforcing Hungary's position in the European green mobility value chain.

The transition faced early challenges: a lack of skilled labor, limited local value creation in the automotive sector, dependence on imported components, and slow development of charging infrastructure. However, public investment programs, regional revitalization efforts, and targeted retraining initiatives helped overcome these obstacles. Retraining programs focused on electric powertrain assembly, digital manufacturing, and smart production techniques, supported by close collaboration with vocational schools and technical institutions.

Driven by rising demand, climate targets, and supportive regulation, BEV adoption accelerated. The region embraced diversification into e-mobility components and smart energy systems. New business models emerged, including partnerships with foreign OEMs, flexible supply chains, and service-based approaches to electrification. Meanwhile, local success depended on upgrading industrial zones, reskilling aging workforces, and integrating Industry 4.0 principles.

Technologically, the shift brought rapid advances: battery module and electric motor production, smart HVAC integration, predictive maintenance using IoT, and automated quality control. The economic transformation was also strategic—providing new job opportunities and revitalizing post-industrial areas through state-supported investment and green innovation.

With its focus on sustainability, workforce development, and economic renewal, the Jászság region is becoming a model for regional electrification in Central Europe.

Milestones towards 2035:

- 2026: Launch of EV-focused investment incentives in Jászberény; retraining of former Electrolux employees begins
- 2030: First production of BEV drivetrain modules and smart HVAC systems starts
- 2035: Widespread BEV adoption enabled by charging infrastructure; region supplies both domestic and EU OEMs; fully integrated into EU green automotive value chains

2.1.3.5. Italian Scenario (NOI)

During the first workshop in Bolzano the following scenario in the topic of electrification was developed:

BEV will become the dominating technology for second cars and commuters with own charging point at home. Fast charging out of home will happen on few motorway hubs. In urban areas, 11kW will not be possible across the board. Commercial: Last mile will become BEV-dominant, long-distance transport will continue to rely on combustion engines. Companies will supply employees and fleets with their own energy.

The main **risks** for the industry were seen in unclear european strategy and geopolitical developments, as well as dependency of chinese raw materials and tax war. Nevertheless, there were seen several **regional success factors** and positiv and optimistic framework conditions to support in short and mid term, like successful companies in the region, applications in tourism and off-road mobility. Legislation on a national and European level as well as the automotive and energy industries were named as the key influences and stakeholders for a successful development of the region in the field of electrification. The identified **drivers** to were funding calls for electrified local passenger transport, logistic companies, municipalities and public awareness.

The steps that need to be taken to reach the scenario until 2030 were described as the following:

- 2025: use the Automotive Transformation Conference @NOI Techpark Bruneck for synergies with the partner regions
- 2026 use the olympic games as a showcase for sustainable touristic mobility
- 2028: Joint R&D projects for sustainable mobility
- 2030: public awareness and affordable BEV outperform ICE new vehicle inscriptions
- 2035:100% emission free vehicle inscriptions (https://www.eurac.edu/de/data-in-action/klimaplan-monitoring-suedtirol/gesamtemissionen-des-verkehrssektors)
- 2040: Zero emission region South Tyrol

2.1.3.6. Polish Scenario (KSSE)

Two/three electric vehicle production plants and several hundred suppliers of components and systems for electric vehicles. Access to green energy, use of recovered materials, low-emission production, sustainable means of transporting. Universities and research entities provide engineers and specialists and provide research and development support in solving technical challenges. Secondary and higher technical schools and educational centres support the development of competences of employees in the automotive industry. The SA&AM area has an extensive infrastructure for charging electric vehicles. Residents have become convinced of electric vehicles, but these are mostly post-lease vehicles from the Western Europe and vehicles of Chinese brands. Retrofitting companies, i.e. converting vehicles with traditional fuels to electric vehicles.

The estimated timeline of steps to be taken is as follows:

- **Untill 12.2026:**

1. Identify entities operating in the SA&AM area related to the production of parts and systems for electric vehicles, not yet related to SA&AM, and encourage them to cooperate with SA&AM entities
2. Initiate talks between local government entities and the energy sector in the context of including new mobility in the debate on energy security and ensuring vehicle charging and energy storage infrastructure
3. Initiate talks with automotive suppliers regarding new forms of cooperation that may have a positive impact on the cost-effectiveness of running a business in the SA&AM area

- **Until 12.2030:**
  1. Develop material recovery facilities and activities related to the production of recovered materials meeting the requirements of the automotive sector in the SA&AM area
  2. Ensure adequate charging infrastructure for electric vehicles in large cities and agglomerations
  3. Provide staff with appropriate key competencies to maintain production continuity with a reduced number of people available on the labour market, including close cooperation between companies and secondary and higher technical schools
  4. Develop the activities of suppliers of parts and systems for electric vehicles in the field of electric vehicle efficiency (energy management systems, energy recovery solutions, lightweight materials, functional materials)

- **Until 12.2035:**
  1. Highly specialized staff in the field of materials science
  2. Highly specialized staff in the field of advanced production techniques
  3. Fully automated flexible manufacturing systems for parts and systems for electric vehicles

2.1.3.7. Slovenian Scenario (CCIS)

During the workshop we completed the following scenario:

Electrification perspectives in the region are fairly positive. We predict an increasing demand for BEVs globally and significant progress in battery technologies. According to current legal initiatives, we also see an enlargement of the scope and coverage of charging infrastructure, as it offers significant savings for companies. We still see a noticeable space on the market for hydrogen technologies and hybrid vehicles. In short-midterm fossil fuel motors are still a viable option for most companies in the value chain. Manufacturing of EVs and electric motors is moving toward flexible platforms with less structural parts, however there is still some interdependencies among components. Slovenian companies can position themselves as more specialized component producers with higher flexibility for quick changes according to customer's need.

The scenario highlights the development of cheaper manufacturing technologies, including hydrogen and hybrid vehicles, and the expansion of public and private charging systems. It identifies several risks, such as reliance on battery imports, critical materials like lithium, and geopolitical tensions. Regional success factors include progress in legislation on emissions and the availability of critical materials, which can impede further development. The economic context is supported by government subsidies for electric vehicles. Key technologies and skills mentioned were energy network management, data management, cybersecurity, digitalization of production, and robotics. The participants also emphasized the importance of collaboration between energy providers and new companies for charging systems.

The estimated timeline of steps to be taken is as follows:

- **2026**: Slovenian companies focus on the development and production of EV components, infrastructure development supported by public finances, and market uncertainty due to custom tariffs on Chinese vehicles.
- **2030**: New technologies make manufacturing cheaper while there is a wider development of public and private charging systems. Companies shift to modular production and simplified, flexible products.
- **2035**: Increased focus on new and advanced materials, enhanced communication in the EV ecosystem through IoT, and electrification of larger vehicles.

2.1.3.8. Slovak Scenario (SEVA)

We anticipate a rising global demand for BEVs, with around 22 million electric vehicles expected to be sold by 2025. In Europe, EV sales are projected to increase significantly, achieving well above 20% market share for 2025. This surge will be paired with notable growth in battery production, alongside advancements in battery technologies and innovations.
To keep their market share, European OEMs must quickly adapt to e-mobility or risk being outpaced by foreign competitors from China or the USA. Car manufacturers within the European Union, regardless of their origin, will primarily concentrate on electric vehicles until 2035, in line with EU policy goals and regulations. This shift in product portfolios offers a significant opportunity for the entire battery value chain, covering everything from cell production to recycling.

Regarding the shift towards electrification, both Slovakia and the CEE region have emerged as significant production hubs for Europe's automotive sector. The total vehicle output in the six primary Central and Eastern European (CEE) countries stands at nearly 4 million annually. For context, approximately 12 million cars are manufactured each year across the European Union.

Slovakia, the Czech Republic, and Hungary rank among the world's top three per capita car producers and are rapidly transitioning to electrify their product lines. The leading car production markets include Slovakia (1.1 million), Czechia (1.4 million), and Hungary (0.5 million). Several OEMs are already manufacturing battery electric vehicles (BEVs) or plug-in hybrid electric vehicles (PHEVs), with new models anticipated to launch or arrive by the end of 2026. Additionally, several OEMs in the region are also producing electric buses.

Focusing on Slovakia, all four current OEMs manufacture EVs, with additional models expected to enter the market from 2025 to 2026. A fifth OEM plans to start production in 2026, exclusively producing electric vehicles. Additionally, there is a robust network of Tier 1 and Tier 2 suppliers catering to OEMs. We believe that businesses and their electric fleets will significantly drive progress, largely due to ESG principles and CO2 emission targets. Most charging stations are likely to be privately owned and operated. Electric vehicles are being developed on highly versatile platforms. Although environmental awareness and public acceptance are increasing, they remain subject to cost considerations and the availability of infrastructure. Limited incentives and inconsistent government policies are obstructing advancements in sustainable mobility.

In Slovakia, the primary risk stems from the absence of a systematic governmental strategy for the automotive sector, shifts in government policy regarding Russia, and a lack of a clear vision for energy sourcing decoupling. Additionally, Slovakia is viewed by multinational corporations as a "production site" with lower value-added with respect to Slovakia-made innovations, which dissuades them from establishing their scientific research centers there. There is also a rising shortage of workforce and talent, coupled with inadequate policies aimed at skill development. Furthermore, the country suffers

from a lack of innovation, as well as insufficient policies to foster an innovation ecosystem and entrepreneurial activity related to research, development, and innovation (RDI).

The estimated timeline for the steps to be taken is as follows:

- **2026**: The key factors influencing the Slovak e-mobility market up to 2026 will continue to be the EU's objectives regarding CO2 emissions, particularly concerning the transition in vehicle production. A new Volvo factory dedicated exclusively to electric vehicles is expected to begin operations in 2026. Additionally, we must enhance awareness about the significance of the automotive industry's shift towards electrification.
- **2030:** A significant shift in mindset and sentiment occurs among both producers and consumers, leading to broader adoption of BEVs. Charging stations are deployed widely, including in urban settlements, and low to zero emission zones in cities are embraced. Additionally, the battery factory in Slovakia begins its production.
- **2035:** Introduction of V2X, with a primary emphasis on V2grid. Growth of Software-defined Vehicle (SDV) as the central R&D concept and vehicle operation.

2.2 Automation /Autonomous Driving

2.2.1 Factors Rating

Table 9: Factors Rating Automation

Partner	Factor			
	1. Automated/ autonomous driving	2. Framework conditions of autonomous driving	3. Dealing with Mobility Data	4. Functional integration
CML, Germany	4	4	4	0
Biz-Up, Austria	2	5	5	7
PU, Germany	10	4	8	2
PBN, Hungary	7	13	5	7
KSSE, Poland	9	3	2	5
CCIS, Slovenia	5	7	6	8

This table summarizes the results of a **factor prioritization exercise** focused on the theme of **Connectivity and Automation**, conducted as part of the third transnational workshop. Project partners evaluated the importance of four transformation factors expected to significantly influence the future of mobility by 2035. Each factor was rated by individual partners on a numerical scale, reflecting its perceived strategic relevance within their regional context. The four assessed factors were:

1. **Automated / autonomous driving**
2. **Framework conditions of autonomous driving** (e.g., regulations, infrastructure readiness)
3. **Dealing with mobility data** (e.g., data sharing, ownership, and governance)
4. **Functional integration** (e.g., combining digital and physical vehicle functions into smart systems)

Key insights from the ratings include:

- **Automated / autonomous driving** emerged as a priority for most regions, with notably high scores from PU (Germany, 10) and KSSE (Poland, 9), suggesting strong interest in advancing vehicle autonomy.
- **Framework conditions for autonomous driving** received a particularly high score from PBN (Hungary, 13), emphasizing the critical role of legal, infrastructural, and regulatory readiness in enabling autonomy.
- **Mobility data management** was moderately prioritized across most regions, with PU (Germany, 8) and CCIS (Slovenia, 6) indicating higher concern, likely reflecting the growing importance of data infrastructure and interoperability.
- **Functional integration** was rated highest by CCIS (Slovenia, 8) and Biz-Up (Austria, 7), highlighting the increasing relevance of vehicle system complexity and digital integration in future mobility solutions.

2.2.2 Assumption Choosing & Rating

Table 10: Rating Factor: 1. Automated / autonomous driving

Partner	Factor: 1. Automated/ autonomous driving		
	Assumption A: Fully automated driving is gaining ground	Assumption B: Obstacle: digital infrastructure	Assumption C: Lack of acceptance and slow technology development
CML, Germany	2	2	0
Biz-Up, Austria	5	6	1
PU, Germany	5	4	2
KSSE, Poland	4	10	5

This table presents the results of a strategic assessment conducted during the third transnational workshop, focused on the future of **automated and autonomous driving** in the Central European context. Project partners were asked to rate three alternative assumptions that reflect different development trajectories and barriers to the adoption of autonomous vehicle technologies by 2035. The assumptions were evaluated based on their perceived plausibility and relevance to regional conditions. The assumptions assessed were:

1. **Assumption A: Fully automated driving is gaining ground** – Technological breakthroughs, regulatory clarity, and infrastructure readiness enable broad deployment and social acceptance of autonomous vehicles.
2. **Assumption B: Obstacle—digital infrastructure** – The expansion of autonomous driving is significantly slowed by insufficient or uneven development of supporting digital infrastructure (e.g., 5G, smart roads).
3. **Assumption C: Lack of acceptance and slow technology development** – Progress is hindered by public skepticism, regulatory uncertainty, and slower-than-expected technical advancements.

Key observations from the partner ratings include:

- **Assumption A (Fully automated driving gaining ground)** received moderate ratings across all partners, with PU and Biz-Up (Austria) assigning a value of 5, indicating **moderate optimism** about widespread deployment of autonomous systems in the foreseeable future.
- **Assumption B (Infrastructure as an obstacle)** was seen as a significant concern by KSSE (Poland, 10), the highest rating in this group. Other partners such as Biz-Up (6) and PU (4) also acknowledged the **critical role of infrastructure readiness** in enabling automation, suggesting that this barrier may determine regional feasibility.
- **Assumption C (Lack of acceptance and slow development)** received lower scores overall, with Biz-Up (1) and PU (2) suggesting **limited concern** about public acceptance or technological stagnation in their regions. However, KSSE (Poland, 5) noted it as a moderately relevant issue, possibly reflecting localized societal or policy challenges.

Table 11: Rating Factor: 2 Framework conditions of autonomous driving

Partner	Factor: 2 Framework conditions of autonomous driving		
	Assumption A: Progressive development in companies and politics	Assumption B: Situational adaptation of fields of application	Assumption C: Remaining in the status quo
CML, Germany	0	4	0
Biz-Up, Austria	4	6	0
PBN, Hungary	15	10	7
KSSE, Poland	0	3	0
CCIS, Slovenia	2	5	2

This table presents the results of a strategic assessment conducted during the third transnational workshop, focusing on the **framework conditions required for the advancement of autonomous driving**. Project partners evaluated three assumptions that reflect different potential regulatory, institutional, and market environments by 2035. Each assumption was rated based on its perceived likelihood and strategic importance in the partner's regional context. The assessed assumptions were:

1. **Assumption A: Progressive development in companies and politics** – Strong political will, proactive regulation, and industry commitment drive rapid expansion and integration of autonomous driving technologies.
2. **Assumption B: Situational adaptation of fields of application** – Autonomous driving develops gradually in specific use cases (e.g., logistics, campus transport), depending on regional demand and context.
3. **Assumption C: Remaining in the status quo** – Due to regulatory inertia, liability concerns, or public skepticism, little progress is made beyond current pilot projects and research.

Key insights from the partner ratings include:

- **Assumption A (Progressive development)** was rated highest by PBN (Hungary, 15), indicating strong confidence in coordinated public-private efforts to enable autonomous driving at scale. Biz-Up (Austria, 4) and CCIS (Slovenia, 2) also supported this scenario, though to a lesser extent.
- **Assumption B (Situational adaptation)** was the most widely supported, with moderate to high ratings from Biz-Up (6), CCIS (5), PBN (10), and KSSE (Poland, 3). This suggests that most regions expect **targeted, context-specific applications of autonomous driving** to emerge first, rather than immediate broad-scale deployment.
- **Assumption C (Status quo remains)** received minimal support. PBN (7) assigned the highest score, acknowledging the possibility of stagnation, while CCIS and Biz-Up gave it low values (2 and 0, respectively), and other regions did not rate it at all. This indicates **low expectations for widespread policy inaction**, though some concern about systemic delays remains.

Table 12: Rating Factor: 3 Dealing with Mobility Data

Partner	Factor: 3 Dealing with Mobility Data		
	Assumption A: Free data exchange under transparent conditions	Assumption B: Data monopolies, data as a business model	Assumption C: Regulated and benefit-orientated data exchange
CML, Germany	1	3	0
Biz-Up, Austria	1	8	0
KSSE, Poland	0	2	0
CCIS, Slovenia	0	0	4

This table presents the results of a strategic assessment focused on future approaches to **mobility data governance and exchange**, conducted during the third transnational workshop. As data becomes a central asset in mobility ecosystems, project partners were asked to evaluate three assumptions that outline possible frameworks for how mobility data might be handled and shared by 2035. Each assumption was rated based on its perceived likelihood and strategic relevance within the regional context. The assessed assumptions were:

1. **Assumption A: Free data exchange under transparent conditions** – Mobility data is openly shared across sectors and systems under clear, fair, and transparent rules that prioritize interoperability and innovation.
2. **Assumption B: Data monopolies, data as a business model** – A few large players dominate access to mobility data, using it as a competitive advantage and commercial asset, with limited transparency or openness.
3. **Assumption C: Regulated and benefit-oriented data exchange** – Data exchange is governed by public regulation or cooperative models to ensure fair use and maximize public and societal value.

Key insights from the ratings include:

- **Assumption A (Free and transparent data exchange)** received very low scores across all responding partners (CML and Biz-Up each rated it 1), indicating that a fully open, non-commercial data-sharing ecosystem is seen as **unlikely or idealistic** under current market dynamics.
- **Assumption B (Data monopolies)** was rated moderately high by Biz-Up (8) and CML (3), reflecting a **realistic concern about the dominance of private actors** in data ownership and monetization. KSSE (Poland) also recognized this scenario, albeit with a lower score (2).
- **Assumption C (Regulated and benefit-oriented exchange)** received the highest individual rating from CCIS (Slovenia, 4), suggesting **support for public or hybrid governance mechanisms** that ensure fair access and purposeful use of mobility data.

Table 13: Rating Factor: 4. Functional integration

Partner	Factor: 4. Functional integration

	Assumption A: Smart materials and sensors are integrated into many components	Assumption B: Smart materials are used when a specific additional benefit is created	Assumption C: Smart materials are rarely integrated into components
Biz-Up, Austria	6	7	0
KSSE, Poland	5	9	4
CCIS, Slovenia	6	3	0

This table summarizes the results of a strategic assessment on the future role of **functional integration** in automotive components, as discussed during the third transnational workshop. With advancements in smart materials and embedded sensor technologies, project partners were asked to evaluate three assumptions reflecting different levels of integration and technological maturity expected by 2035. Each assumption was rated based on its plausibility and relevance within the regional innovation and manufacturing context. The assessed assumptions were:

1. **Assumption A: Smart materials and sensors are integrated into many components** – High levels of functional integration become standard in vehicle systems, enabling smarter, more efficient, and adaptive automotive technologies.
2. **Assumption B: Smart materials are used selectively when specific benefits are achieved** – Integration occurs only when clear performance, cost, or sustainability advantages are evident.
3. **Assumption C: Smart materials are rarely integrated** – Due to technical, cost, or reliability concerns, integration remains limited to a few niche applications.

Key insights from the partner ratings include:

- **Assumption A (Widespread integration)** received moderate to high ratings from all respondents, with Biz-Up (Austria) and CCIS (Slovenia) each rating it 6, and KSSE (Poland) 5. This reflects a **general expectation of increasing functional integration**, especially in advanced or high-end segments.
- **Assumption B (Selective use based on added value)** emerged as the most strongly supported, with KSSE (Poland, 9) and Biz-Up (Austria, 7) assigning high scores. This suggests that **cost-effectiveness and functional necessity** are expected to guide adoption, rather than integration for its own sake.
- **Assumption C (Rare integration)** was rated significantly lower, with the highest score being 4 (KSSE, Poland), indicating **limited belief in stagnation** or widespread rejection of smart materials, though some caution remains due to potential technical or economic barriers.

2.2.3 Scenario Description

Table 14: Factors and Assumptions per Partner

Partner	Factors and Assumptions			
	1	2	3	4

	A	B	C	A	B	C	A	B	C	A	B	C
CML, Germany	x	x			x			x				
Biz-Up, Austria		x			x			x		x	x	
PU, Germany	x											
PBN, Hungary				x								
KSSE, Poland		x								x	x	
CCIS, Slovenia					x				x	x		

Describing and explaining text per affecting partner on **Scenarios** made by participants in the following-Canva in Appendix

2.2.3.1. German (Bavarian) Scenario (CML)

During the Regensburg workshop, the following scenario for autonomous driving was discussed:

Progress in the field is expected through pilot projects and regulatory flexibility. However, major risks remain around societal acceptance, high costs, regulatory hurdles, and data protection concerns. Regional adaptation and public funding are seen as essential for further development.

In terms of technology, the lack of digital infrastructure remains a major bottleneck. At the same time, artificial intelligence, sensor technology, and IT networking are considered key accelerators. Standardization is regarded as an important enabler for interoperability and scalability.

For implementation, the lack of viable business models—particularly Mobility-as-a-Service (MaaS) and on-demand offerings—is seen as a challenge. Interdisciplinary collaboration between technology providers, policymakers, and the business sector is viewed as a critical success factor.

Overall objective 2030-2035: Safer, more sustainable, and more efficient mobility.

2.2.3.2. Austrian Scenario (Biz-Up)

In 2035, our vehicles will be equipped with a variety of smart materials and sensors that enable a high degree of customisation thanks to modular software products. The increasing monopolisation of data has now become an obstacle to new innovations. Legal frameworks have been created to bring ‘use cases’ (public transport, logistics, last mile, etc.) into widespread use. Digital infrastructure remains the bottle-neck for many applications and comprehensive mobility control (e.g. urban areas,...)

Risks for this scenario are the lack of technologies in and for Europe as well as the fragmented markets and the lack of trust in the technology and the processing of data. Another risk are the global data monopolists. Nevertheless the scenario provides new business models in the markets of MaaS and working machines. There are also several regional success factors which can be considered as the flagship initiative Future Mobility Region, the automotive cluster as well as the good R&D infrastructure and many available competencies.

2.2.3.3. German (Baden-Württemberg) Scenario (PU)

During the workshop in Pforzheim the following scenario in the topic of autonomous driving was developed:

Autonomous driving is rapidly advancing, with Level 4-5 systems set to transform mobility. Future developments will focus on real-world integration, smart infrastructure, and safer, more efficient transport—making self-driving vehicles a key part of tomorrow's mobility.

The Northern Black Forest is positioning itself as a pioneer in automated and autonomous driving, supported by strong public acceptance and rapid technological development. Key stakeholders include local authorities, transport associations, technology firms, and research institutions. Despite challenges such as infrastructure gaps, high costs, unclear legal frameworks, and environmental concerns, progress is driven by demographic change, economic incentives, and advances in AI, connectivity, and mobility systems.

The region aims to improve connectivity between rural and urban areas, enhance road safety, boost economic growth—particularly in tourism and logistics—and promote sustainability through reduced emissions and optimized transport. Autonomous services are envisioned for tourism (e.g., scenic shuttles), agriculture and forestry logistics, and public transport in remote areas. Community trust, public-private cooperation, and the integration of autonomous mobility solutions play a central role.

To support this transition, there is a strong focus on training the workforce in AI and automation, upskilling transport operators, and fostering innovation through university partnerships. The economic strategy emphasizes regional funding, innovation hubs, and tailored business models that replace high-risk driving tasks and address demographic challenges.

The steps that need to be taken to reach the scenario until 2030 were described as the following:

- **2026:** Test autonomous vehicles in controlled environments and develop verification methods for regional challenges

  2030: Establish comprehensive legislation and safety standards, enable testing in diverse traffic scenarios, expand Level 3 automation

- **2035:** Achieve widespread Level 4–5 automation, promote awareness, connect rural areas, and optimize services with real-world data

2.2.3.4. Hungarian **Scenario (PBN)**

By 2035, the Jászság region has become a recognized national testing ground for autonomous mobility and logistics solutions. Local companies, supported by universities and highway authorities, work in partnership to pilot autonomous vehicles and robotics systems under evolving legislative frameworks aligned with EU autonomy targets. Thanks to early humanoid and warehouse robot pilot programs, the region has developed both infrastructure and expertise. Automation addresses growing labor shortages in logistics, and export-ready robotic systems developed in the region strengthen Hungary's competitiveness in high-tech manufacturing.

By 2035, the Jászság region has established itself as Hungary's national testbed for autonomous logistics and smart mobility systems. A collaborative ecosystem involving local companies, universities, and infrastructure authorities enabled the early launch of robotic pilot zones and warehouse automation. These efforts, aligned with EU regulatory frameworks and autonomy targets, positioned the region at the forefront of intelligent transport solutions.

The development was driven by a pressing need to address labor shortages in logistics, improve transport efficiency, and capitalize on advancements in AI, robotics, and sensor technology. Despite initial legal uncertainty and high infrastructure costs, the region invested heavily in pilot projects, skill-building, and modular exportable systems for warehouse and fleet logistics.

New business models emerged, including robotics-as-a-service platforms and AI-based logistics optimization. The technological backbone consists of autonomous navigation systems, AI vision and object detection tools, and digital twin simulations for validation and safety. Strategic investments from both EU and national funds further accelerated deployment and innovation.

Skilled workforce development was a priority, focusing on robotics design, embedded systems, safety certification, and AI-powered decision-making. By 2035, the region not only filled domestic industry gaps but also became a competitive exporter of autonomous systems.

Milestones to 2035:

- 2026: Launch of robotic pilot zones in partnership with universities and transport authorities
- 2030: Autonomous warehouse systems enter operation; education programs train skilled AV professionals
- 2035: The region is recognized as a national leader in autonomous logistics and robotics innovation

2.2.3.5. Polish Scenario (KSSE)

Several suppliers of components and systems in the SA&AM area, providing solutions for autonomous vehicles. Two/three manufacturers of autonomous vehicles. Separated areas for autonomous vehicles in some cities and in some industrial areas and closed areas. Production of autonomous vehicles for special and off-road operations. Universities and research entities provide engineers and specialists and provide research and development support in solving technical challenges. Secondary and higher technical schools and educational centres support the development of competences of automotive industry employees in the field of artificial intelligence, vision techniques, data analytics, decision-making processes, cybersecurity. Several areas for testing autonomous vehicles in real and controlled conditions.

The estimated timeline of steps to be taken is as follows:

Until 12.2026:

1. Roadmap for the preparation and implementation of new university curricula related to the development of key competences among students and employees in the automotive industry
2. HR4.0 platform as a place for creating joint projects for the development of employee competences in the automotive industry
3. HR4.0 platform as a place for staff exchange between automotive sector companies when implementing new projects

Until 12.2030:

1. Research and development cooperation between companies with complementary competences in projects related to autonomous driving
2. Investment funds and public programs ready to support projects related to vehicle autonomy
3. Staff with the required key competencies essential to supporting the production of solutions for autonomous vehicles is available
4. Cooperation of artificial intelligence centres and other competence centres at universities with automotive companies and technology companies in the field of space for simulation of solutions for autonomous vehicles

Until 12.2035:

1. There are dedicated spaces available for testing autonomous vehicles
2. International companies use the space to test autonomous vehicles
3. International corporations are locating their investments related to the development of autonomous vehicles in the SA&AM area

2.2.3.6. Slovenian Scenario (CCIS)

Autonomous driving in the region is not viewed as prosperous, mainly due to lack of acceptance and slow technological development (weak regional infrastructure, slow progress and little price-efficiency). Additionally, we predict a highly regulated mobility data ecosystem, which limits market-ready solutions from being successfully deployed. Nevertheless, we see some limited usage which depends on the situation, i.e. pilot projects to increase awareness, more research by companies and research institutions for innovative solutions and stronger emphasis on safety and reliability of technologies. These developments will however be local and difficult to scale up to the whole region. Companies in Slovenia see opportunities in development and usage of new smart materials with multi-functionality, which can become a competitive advantage to them as suppliers.

This scenario highlights several risks, including road safety, lack of proper infrastructure, uncertain regulations, high investment costs for R&D, and uncertain public opinion regarding autonomous vehicles. Regional success factors include the need for proper infrastructure, to combat slower digitalization, and a necessity for higher automation of production lines to increase productivity. Technologies and skills emphasized in the future are data management/cybersecurity, digitalization of production/I4.0, robotics, systemic engineering, software development, and machine learning. The economic context of Slovenia is characterised with its dependence on German customers, following trends rather than making them. The debate of the workshop centred on Industry 4.0 and the enabling technologies where the Slovenian region might increase its competitiveness. We identified the following steps to be taken for progression:

- **2026:** Increase in export of components for autonomous driving and more pilot projects within controlled environments.

  2030: New investments in public digital infrastructure and rise in companies providing sensors and cameras for automated driving tests.

- **2035:** Production lines moving toward full automation and more connections between research institutes and companies.

2.3 Connectivity

2.3.1 Factors Rating

Table 15: Factors Rating Connectivity

Partner	Factor			
	1. Regulation mobility services	2. infotainment and digital services	3. V2X, V2V, Connectivity	4. Remote services, over the air updates, real time diagnosis
CML, Germany	4	0	4	4
Biz-Up, Austria	0	0	9	9
PU, Germany	2	3	6	4
PBN, Hungary	9	8	18	11
KSSE, Poland	4	0	9	5
CCIS, Slovenia	5	3	6	6
SEVA, Slovakia	6	6	7	5

This table presents the results of a **factor assessment focused on digitalization in mobility**, conducted during the third transnational workshop. The evaluation centered on how digital services and vehicle connectivity are expected to shape the future of the automotive sector by 2035. Each project partner rated the importance of four specific transformation factors within their regional context, using a numerical scale. The assessed factors were:

1. **Regulation of mobility services** (e.g., ride-sharing, MaaS frameworks)
2. **Infotainment and digital services** (e.g., in-car entertainment, driver assistance interfaces)
3. **Vehicle-to-Everything (V2X), Vehicle-to-Vehicle (V2V), and Connectivity**
4. **Remote services, over-the-air (OTA) updates, and real-time diagnostics**

Key observations include:

- **V2X, V2V, and connectivity** stood out as a top priority, particularly for PBN (Hungary, 18), indicating a strong focus on advanced communication infrastructure to support connected mobility. KSSE (Poland, 9) and SEVA (Slovakia, 7) also rated this factor highly.
- **Remote services and OTA updates** were similarly valued across most regions, with PBN (11) and Biz-Up (Austria, 9) giving the highest ratings, reflecting growing interest in continuous vehicle optimization and predictive maintenance.
- **Infotainment and digital services** showed a broader range of priorities. PBN (8), SEVA (6), and CCIS (3) gave moderate attention, while data from several partners was missing.
- **Regulation of mobility services** received relatively lower and more variable ratings, although PBN (9) and SEVA (6) highlighted its growing importance for enabling flexible, user-centric mobility systems. Some partners did not submit data for this factor.

2.3.2 Assumption Choosing & Rating

Table 16: Rating Factor: 1. Regulation of mobility services

Partner	Factor: 1. Regulation of mobility services		
	Assumption A: Non-regulated mobility services	Assumption B: Sustainable regions	Assumption C: Restrictive mobility policies
CML, Germany	0	3	1
SEVA, Slovakia	2	6	2

This table presents the results of a strategic assumptions rating related to the **regulatory landscape for mobility services**, evaluated during the third transnational workshop. As new mobility models emerge—such as ride-sharing, on-demand shuttles, and platform-based services—project partners assessed three potential regulatory trajectories shaping how these services may evolve by 2035. Each assumption was rated based on its perceived likelihood and strategic relevance within the regional context. The assessed assumptions were:

1. **Assumption A: Non-regulated mobility services** – A laissez-faire approach prevails, enabling market-driven mobility solutions with minimal government intervention or oversight.
2. **Assumption B: Sustainable regions** – Regulation supports environmental and social goals, ensuring that mobility services contribute to climate-neutral, inclusive, and accessible transport systems.
3. **Assumption C: Restrictive mobility policies** – Stringent regulations and limitations are imposed, potentially constraining innovation and flexibility in mobility service offerings.

Key insights include:

- **Assumption B (Sustainable regions)** was the most strongly supported, receiving the highest ratings from both SEVA (Slovakia, 6) and CML (Germany, 3). This indicates a shared expectation that **future regulation will prioritize sustainability**, guiding mobility services toward long-term social and environmental objectives.
- **Assumption A (Non-regulated services)** received limited endorsement, with only SEVA assigning a modest score (2). This suggests that **unregulated market development is seen as unlikely** or undesirable, given concerns around equity, safety, and integration.
- **Assumption C (Restrictive policies)** received low ratings from both regions (CML: 1, SEVA: 2), indicating **little belief in overly restrictive regulatory environments**, though some recognition remains that regulatory risks could emerge if not carefully managed.

Table 17: Rating Factor: 2. Infotainment and digital services

Partner	Factor: 2. Infotainment and digital services

	Assumption A: Software and applications from new players determine the value proposition	Assumption B: Automotive industry develops or integrates software and applications	Assumption C: Security concerns cause demand to stagnate
SEVA, Slovakia	6	3	1

This table presents the results of a strategic assumption-rating exercise on the future of **infotainment and digital services** in the automotive sector, conducted during the third transnational workshop. As software becomes a key differentiator in vehicle value, partners assessed three possible development trajectories for how infotainment systems and digital user experiences might evolve by 2035. The assumptions were rated based on their perceived plausibility and relevance to regional trends. The assessed assumptions were:

1. **Assumption A: Software and applications from new players determine the value proposition** – Technology companies and digital service providers outside the traditional automotive sector lead innovation, shaping customer expectations and competitive advantage.
2. **Assumption B: The automotive industry develops or integrates software and applications** – OEMs and suppliers take on a more active role in software development or forge strong partnerships to retain control over digital ecosystems.
3. **Assumption C: Security concerns cause demand to stagnate** – Widespread concerns over data security and privacy limit user acceptance and slow the adoption of digital in-car services.

In this assessment:

- **Assumption A (New players define value)** received the highest rating from SEVA (Slovakia, 6), suggesting strong belief that **tech companies will play a dominant role** in shaping future in-car experiences.
- **Assumption B (Automotive industry retains or regains control)** was also seen as relevant (score of 3), reflecting an expectation that **OEMs will continue investing in digital capabilities**, even if they do not lead the market outright.
- **Assumption C (Security concerns stagnate growth)** received a low score (1), indicating that **cybersecurity risks are acknowledged** but not expected to significantly dampen long-term consumer interest or market development.

Table 18: Rating Factor: 3. V2X, V2V, Connectivity

Partner	Factor: 3. V2X, V2V, Connectivity

	Assumption A: Unified V2V, V2X and Connectivity Systems	Assumption B: Regional V2V, V2X and Connectivity Systems	Assumption C: Lacking development of V2V, V2X and Connectivity Ecosystem
CML, Germany	0	1	3
Biz-Up, Austria	0	9	1
PU, Germany	1	4	6
PBN, Hungary	17	10	8
KSSE, Poland	6	9	3
CCIS, Slovenia	5	1	2
SEVA, Slovakia	2	1	7

This table presents the results of a strategic assumptions rating exercise focused on the future of **vehicle-to-everything (V2X), vehicle-to-vehicle (V2V), and connectivity systems**, conducted during the third transnational workshop. These technologies are expected to play a central role in enabling intelligent transportation systems, safety enhancements, and new mobility services by 2035. Project partners were asked to evaluate three possible development trajectories, based on their perceived likelihood and strategic importance in their respective regions. The assessed assumptions were:

1. **Assumption A: Unified V2V, V2X, and connectivity systems** – A harmonized and interoperable ecosystem is established across Europe, enabling seamless data exchange and service integration.
2. **Assumption B: Regional V2V, V2X, and connectivity systems** – Development is driven by regional initiatives with partial compatibility and local optimizations, resulting in a more fragmented but functional system landscape.
3. **Assumption C: Lacking development of V2V, V2X, and connectivity** – Technical, regulatory, or investment challenges hinder the widespread rollout of connectivity infrastructure and applications.
4.

Key observations include:

- **Assumption A (Unified systems)** was most strongly endorsed by PBN (Hungary, 17), indicating high expectations for full-scale, cross-border system integration. PU (Germany, 1) and SEVA (Slovakia, 2) also acknowledged this possibility, though with more cautious optimism.
- **Assumption B (Regional systems)** received widespread support, particularly from Biz-Up (Austria, 9), KSSE (Poland, 9), and PBN (Hungary, 10). This suggests that most regions **expect localized development strategies** to dominate in the near- to mid-term, with gradual convergence over time.
- **Assumption C (Lacking development)** was assigned the highest concern score by PU (Germany, 6) and SEVA (Slovakia, 7), pointing to **real apprehensions about uneven infrastructure readiness, policy gaps, or investment delays**. However, some partners like Biz-Up and CCIS assigned it lower scores (1–2), indicating more confidence in progress.

Table 19: Rating Factor: 4. Remote services, over the air updates, real time diagnosis

Partner	Factor: 4. Remote services, over the air updates, real time diagnosis		
	Assumption A: Highly Integrated & Efficient Remote Services	Assumption B: Moderate Adoption of Remote Services	Assumption C: Challenges in Remote Services Development
CML, Germany	0	4	0
Biz-Up, Austria	11	0	0
KSSE, Poland	0	12	6
CCIS, Slovenia	0	10	5
SEVA, Slovakia	3	5	2

This table presents the results of a strategic assumptions rating focused on the future of **remote automotive services**, including over-the-air (OTA) updates and real-time diagnostics. As digitalization and connectivity continue to reshape the automotive industry, these technologies are expected to play a critical role in enhancing efficiency, personalization, and maintenance capabilities by 2035. Project partners evaluated three assumptions that reflect different levels of technological maturity and implementation. Each assumption was rated based on its expected relevance and likelihood in the regional context. The assessed assumptions were:

1. **Assumption A: Highly integrated and efficient remote services** – Remote features such as OTA updates and diagnostics are widely adopted, seamlessly integrated into vehicle systems, and deliver tangible operational and user benefits.
2. **Assumption B: Moderate adoption of remote services** – Implementation occurs gradually and varies by vehicle segment or region, with some technical or regulatory constraints slowing full integration.
3. **Assumption C: Challenges in development and deployment** – Technical, cybersecurity, or regulatory challenges limit the adoption of remote services, keeping their use marginal or inconsistent.

Key insights from the ratings include:

- **Assumption A (Highly integrated services)** was most strongly supported by Biz-Up (Austria, 11) and SEVA (Slovakia, 3), indicating belief in the **transformational potential of remote services**, particularly in enhancing customer experience and operational efficiency.
- **Assumption B (Moderate adoption)** was the most frequently selected and consistently rated assumption, with particularly high scores from KSSE (Poland, 12), CCIS (Slovenia, 10), and SEVA (5). This suggests a **broad consensus that remote services will become standard practice**, but that full, seamless adoption may face practical barriers.
- **Assumption C (Challenges in development)** received moderate concern ratings from KSSE (6), CCIS (5), and SEVA (2), indicating awareness of potential issues, such as **data security, legacy system compatibility, and user trust**, that could hinder widespread implementation.

2.3.3 Scenario Description

Table 20: Factors and Assumptions per Partner

Partner	Factors and Assumptions											
	1			2			3			4		
	A	B	C	A	B	C	A	B	C	A	B	C
CML, Germany		x							x		x	
Biz-Up, Austria								x		x		
PU, Germany									x			
PBN, Hungary							x					
KSSE, Poland							x	x			x	
CCIS, Slovenia							x				x	
SEVA, Slovakia		x		x					x		x	

Describing and explaining text per affecting partner on **Scenarios** made by participants in the following – Canva in Appendix.

2.3.3.1. German (Bavarian) Scenario (CML)

In the Regensburg workshop, the following key elements were discussed for the connectivity scenario:

The development of digital mobility ecosystems is hindered by **regulatory complexity and bureaucracy**. Risks include **infrastructure disparities**, **security concerns**, and **monopolistic structures**. Success factors are public funding, the establishment of standards, and ensuring interoperability.

On the technological side, **V2X communication and OTA updates** are becoming the standard in new vehicles. The **platform economy** plays a key role in enabling digital mobility services. However, there is increasing **dependency on major tech providers**, which raises concerns. **Cybersecurity and standardization** are considered essential foundations.

For implementation, the **integration of local providers** and the **development of alternative infrastructures** are needed. In addition, **training for public authorities and companies** is required to ensure smooth rollout and adaptation.

Overall objective 2030-2035: More efficient traffic flow and enhanced regional value creation.

2.3.3.2. Austrian Scenario (Biz-Up)

Remote services and over-the-air updates are becoming standard for all vehicle types, enabling seamless real-time updates for software, safety features and entertainment systems. Advanced real-time diagnostic systems detect potential problems before they occur, enabling proactive maintenance and reducing vehicle downtime. Updates and diagnostics can be carried out immediately without the need to visit a service centre. This level of integration leads to a significant reduction in road accidents caused by mechanical failures. Strong regulation of new mobility services to complement public transport. Offered by European OEMs and the public transport sector. At the same time, increased restrictions for cars in cities. Moderate

decline in car ownership, even in rural regions. Predictive maintenance, conclusions about quality, fun factor - customer added value, collecting data over the air, benefits that go beyond the vehicle, travel planning (hotel/restaurant/leisure). Mobility needs, full integration of the journey - point to point

For the implementation of this scenario several skills will be needed, such as cybersecurity, marketing, sales, specialised technological skills, IT infrastructure and also embedded software and hardware. Drivers of the scenario are the need for mobility and security as well as the cost savings through remote services. Anyhow, there are also several risks that needs to be considered, such as regulations, personnel, cybersecurity threats, technology dependency and the availability of electronics and software components.

2.3.3.3. German (Baden-Württemberg) Scenario (PU)

During the workshop in Pforzheim the following scenario in the topic of Connectivity was developed:

The future of V2X connectivity will enable real-time communication between vehicles, infrastructure, and their surroundings—boosting safety, traffic flow, and support for autonomous driving. With advances in 5G/6G and smart transport systems, the focus is now on expanding coverage, standardizing technology, and building a connected mobility ecosystem for both urban and rural areas.

The Northern Black Forest is working to advance V2V (Vehicle-to-Vehicle) and V2X (Vehicle-to-Everything) connectivity to enhance road safety, traffic flow, and autonomous mobility. Despite technological progress, the region faces challenges due to a fragmented market, lack of standardization, and limited funding. Current efforts focus on enabling real-time data exchange through Cooperative Intelligent Transport Systems (C-ITS), especially in rural and high-traffic areas. Government initiatives and technological drivers like 5G/6G, AI, and self-driving systems are pushing development forward. Goals include enhanced safety, optimized traffic flow, improved infrastructure, and increased regional innovation. Reliable connectivity will be key for public transport, logistics, and tourism – including real-time traffic services, connected buses, and smart guidance systems for visitors. A strong focus is placed on building scalable communication systems, supporting public-private collaboration, and educating communities on safe and efficient system usage. Skill development is also critical, with training programs for technicians and partnerships with universities and research institutions. Ultimately, the region aims to implement seamless V2V/V2X infrastructure that supports autonomous mobility and positions the Northern Black Forest as a leading example for connected vehicle ecosystems.

The steps that need to be taken to reach the scenario until 2035 were described as the following:

- **2026:** Establish a regional roadmap and standardization plan through government-industry collaboration
- **2028:** Launch localized pilot projects in key corridors and urban-rural connections
- **2030:** Begin C-ITS infrastructure rollout in priority areas, including roadside units
- **2032:** Standardize V2V/V2X systems across the region to ensure interoperability
- **2035:** Achieve full regional V2V/V2X implementation, enabling real-time communication and autonomous mobility

2.3.3.4. Hungarian Scenario (PBN)

By 2035, the Jászság region becomes a recognized hub for vehicle connectivity solutions within Hungary, supported by national and EU-level policy efforts to standardize V2X and V2V systems. Automotive OEMs, in partnership with regional SMEs and academic institutions such as BME and ELTE, develop embedded software, real-time diagnostics, and secure data transmission systems tailored for intelligent vehicles. The widespread integration of AI-powered services and edge computing transforms

the regional auto supply chain, with Hungarian-developed software components exported to European partners. Trust, interoperability, and cybersecurity are fully addressed, allowing connected mobility to become a core competitive advantage for the region.

By 2035, the Jászság region has become Hungary's key innovation hub for vehicle connectivity and intelligent transport systems. Strong collaboration between OEMs, regional SMEs, and leading universities like BME and ELTE has led to the development of cutting-edge embedded software, predictive diagnostics, and secure V2X/V2V communication solutions. This regional success is backed by national and EU efforts to standardize data governance, improve infrastructure, and foster innovation in smart mobility.

The transition was driven by the need for real-time diagnostics, cybersecurity, and reliable digital infrastructure in an increasingly connected automotive sector. Despite early challenges—such as interoperability gaps, data privacy concerns, and high investment barriers for SMEs—the region established trusted systems through regulatory alignment, robust public-private cooperation, and AI-powered platforms.

Connectivity solutions have unlocked new business models, including software export, digital mobility services, and cross-sector job creation. Regional standardization and cybersecurity protocols enable seamless integration with EU markets. AI and IoT tools support fleet optimization, while investments in 5G and edge computing have created a secure, scalable foundation for innovation.

Skills development has been central to this transformation, focusing on cybersecurity, AI engineering, and cross-disciplinary digital literacy (hardware + software + data). By 2035, the region has positioned itself as a competitive digital backbone within the European automotive supply chain.

Milestones to 2035:

- 2026: First V2X/V2V pilot projects launched with OEMs and SMEs
- 2030: Regional standardization achieved; university–industry cooperation strengthened
- 2035: Jászság becomes a national digital competence hub, exporting secure, AI-enabled automotive connectivity systems

2.3.3.5. Polish Scenario (KSSE)

The Upper Silesian-Zagłębie Metropolis and the Krakow Metropolis as areas for testing connected vehicles (5G infrastructure, IoT in the city). Services via platforms (Google, Apple, ...) will allow vehicles to connect with their surroundings without the need to interfere with vehicle infotainment. This creates opportunities for local application, service and content providers. Cooperation between local government units, service providers and cybersecurity solution providers will contribute to creating a safe space for collecting, anonymizing and processing data sets. In the SA&AM area, there are suppliers producing intelligent sensors, traffic control systems based on artificial intelligence to improve vehicle connectivity and efficiency. At universities, in cooperation with start-ups, new solutions are being created in the field of using artificial intelligence in applications supporting connected vehicles. Universities educate students and employees of companies in the field of artificial intelligence, system interoperability, secure communication and cybersecurity.

The estimated timeline of steps to be taken is as follows:

Until 12.2026:

1. Initiate cooperation with representatives of the Upper Silesian-Zagłębie Metropolis and the Kraków Metropolis in the field of IoT in public space to support the development of connected vehicle services
2. Initiate cooperation between IT companies and automotive sector companies in identifying opportunities for the development of services for connected vehicles
3. Stimulate cooperation with universities and startups in the development of applications for connected vehicles

Until 12.2030:

1. Connected Vehicle Application Development Centres (Gliwice, Krakow)
2. Cooperation of local government units of the Upper Silesian-Zagłębie Metropolis and the Kraków Metropolis with IT companies in the field of secure collection, processing and generation of data
3. Universities educating students and staff in key competencies related to the development of applications for connected vehicles

Until 12.2035:

1. The Upper Silesian-Zagłębie Metropolis and the Kraków Metropolis using a common data space on the basis of which economic entities create new services for connected vehicles
2. Vehicles manufactured in the SA&AM area equipped with solutions ensuring intuitive connection of the vehicle with its surroundings

2.3.3.6. Slovenian Scenario (CCIS)

Connectivity (V2V, V2X) in Slovenia is the basis for developing autonomous driving capacities. Due to the small size of the region and its cities, we see the development of connectivity-enabling technology to be in line with the interregional capacities and has a good chance of being widely distributed if it is not developed in a regional bubble. However, progress will be slow as we are struggling with weak regional infrastructure (i.e. 5G network coverage). Additionally, we assume the acceptance rate of real-time diagnosis and online services to be slower but steadily approve with newer cars on the market. A combination of in-person service and digital service is most likely. We predict that utilization of AI and other advanced predictive technologies will be used in traffic control and industry pilot projects. The advancement of infotainment services is a given, with the connection between automotive and ICT industry on the rise.

The participants highlighted increased cybersecurity and energy efficiency regulations, necessity for better financial support for new pilot projects and risks in lack of proper infrastructure and low compatibility among technologies due to lack of standardization. The goals would be that Slovenian IT companies are developing communication solutions as added value, and the automotive industry is connecting with the ICT sector for pilot projects. The scenario emphasizes the development of connectivity-enabling technology in line with interregional capacities, predicting slow progression due to weak regional infrastructure and strict data protection regulation. Additionally, as a small region Slovenia depends on external connectivity service providers and integration in larger networks to justify the large investments needed.

The imagined timeline is as follows:

- **2026:** Slovenian IT companies develop communication solutions for pilot projects and for basic maintenance issue identifications.
- **2030:** Connection of Slovenian companies with foreign OEMs for testing. New investments in public digital infrastructure. Better financial support for new pilot projects. New cars have remote maintenance options (as an additional service), Slovenian suppliers remain integrated into the supply chains for spare parts.

- **2035:** Start of regulative standardization. The region is a part of larger EU-wide network of interconnected connectivity systems. Largely reliant on bigger EU providers of services (i.e. centralized remote maintenance service). Real-time diagnostics is an integrated solution, but in-person services are still necessary.

2.3.3.7. Slovak Scenario (SEVA)

Slovakia is in the early stages of developing connectivity as a key concept in mobility. Currently, there are only a few small-scale connectivity business cases, including just one pilot project for vehicle-to-grid (V2G) technology. Nonetheless, we see the vast potential and future of e-mobility in connectivity, especially in enhancing the customer experience when using vehicles, expanding service offerings for customers, and reducing costs, including those associated with after-sales services like maintenance and vehicle upgrades. Additionally, there is notable potential to improve vehicle operation safety, advance advanced driver-assistance systems (ADAS), and create synergies between connected mobility and energy distribution networks.

According to WS participants, the primary factors driving this transformation include the rise of Software-Defined Vehicles (SDVs) as a foundational technology and the influence of digital disruptors, which encompass new digital customer services. Currently, Slovakia faces a scarcity of advancements in smart charging, vehicle-to-vehicle (V2V), vehicle-to-everything (V2X), and the overall connectivity ecosystem. The market remains fragmented and largely reliant on small, localized providers, hindering large-scale innovation and the development of comprehensive, scalable connectivity solutions. While there is a gradual increase in remote services, implementing rigorous data security protocols and transparent procedures is crucial for fostering public trust and promoting the acceptance of connected vehicle technologies. Existing companies have very limited expertise in digital services and digitalization of production, particularly concerning workforce preparedness, processes, and the danger of lagging in innovation.

To succeed, they must invest heavily in digitalization, as they currently lack the flexible frameworks, established processes, and expertise required for platform development. The value proposition is expected to rely on software and applications from emerging entrants. Consequently, we foresee a future where established companies collaborate with new market disruptors, such as Volkswagen and Rivian. Furthermore, regional clusters focused on developing digital services should engage OEMs, Tier 1 suppliers, and research institutions.

The estimated timeline for the steps to be taken is as follows:

- **2026:** Raising awareness about connectivity and sharing effective practices from other countries, targeting both businesses and the Government.
- **2030:** Shift in perception regarding confidence in connected vehicles. Wider implementation of digital and connectivity services in the automotive and transport sectors, including those pertinent to distribution grids (V2X, smart charging).
- **2035:** Some companies, especially in logistics or transport, will have partially connected vehicles.

2.4 Platform Economy

2.4.1 Factors Rating

Table 21: Factoring Rating Platform Economy

Partner	Factor	
	1. Sharing Economy and B2C orientation	2. MAAS Platforms
CML, Germany	3	3
Biz-Up, Austria	2	9
RDA Pilsen, Czech Republik	2	4
PU, Germany	2	7
PBN, Hungary	12	22
CCIS, Slovenia	0	4
SEVA, Slovakia	5	5

This table summarizes the ratings of key transformation factors related to the **Platform Economy and Business Model Innovation**, gathered during the third transnational workshop. Project partners evaluated the strategic relevance of two central factors that are expected to play a significant role in reshaping mobility services and customer relationships by 2035. Each factor was rated based on its perceived importance in the regional context. The assessed factors were:

1. **Sharing Economy and B2C Orientation** (e.g., car-sharing, subscription models, direct-to-consumer sales)
2. **Mobility-as-a-Service (MaaS) Platforms** (e.g., integrated digital platforms that combine various transport modes into seamless user offerings)

Key findings from the ratings include:

- **Mobility-as-a-Service (MaaS) platforms** emerged as a top priority, especially for PBN (Hungary, 22) and Biz-Up (Austria, 9), reflecting a strong regional emphasis on integrated digital mobility ecosystems and user-centric service models. PU (Germany, 7) also considered this factor highly relevant.
- **Sharing economy and B2C orientation** received more modest but still notable attention. PBN (Hungary, 12) ranked it highest, indicating growing interest in new ownership and usage models. SEVA (Slovakia, 5) and CML (Germany, 3) assigned moderate relevance.
- Some partners did not submit ratings for this category, which may reflect varying levels of strategic focus or market maturity related to platform-based mobility models within those regions.

2.4.2 Assumption Choosing & Rating

Table 22: Rating Factor: 1. Sharing Economy and B2C orientation

Partner	Factor: 1. Sharing Economy and B2C orientation		
	Assumption A: Sharing instead of owning for more consumption	Assumption B: Environmentally aware society	Assumption C: Revival of your own car
CML, Germany	2	2	0
Biz-Up, Austria	3	5	2
RDA Pilsen, Czech Republik	0	0	12
SEVA, Slovakia	3	2	5

This table presents the results of a strategic assessment conducted during the third transnational workshop, focusing on potential developments in the **Sharing Economy and business-to-consumer (B2C) mobility models**. Project partners evaluated three distinct assumptions that describe possible directions for consumer behavior, mobility ownership, and environmental attitudes by 2035. Each assumption was rated based on its perceived likelihood and relevance in the regional context. The assessed assumptions were:

1. **Assumption A: Sharing instead of owning for increased consumption** – A service-based society evolves where access replaces ownership, and shared mobility becomes the dominant model.
2. **Assumption B: Environmentally aware society** – Consumer behavior is driven by sustainability and social responsibility, resulting in high adoption of green and collective mobility solutions.
3. **Assumption C: Revival of personal car ownership** – In response to changing societal preferences or reduced trust in shared mobility, private car ownership sees a resurgence.

Key observations from the ratings include:

- **Assumption A (Sharing instead of owning)** was moderately supported across partners, with consistent scores from CML (Germany), Biz-Up (Austria), and SEVA (Slovakia) in the range of 2–3. This reflects a belief in **growth in shared mobility**, albeit with regional variation in pace or scale.
- **Assumption B (Environmentally aware society)** received the highest individual score from Biz-Up (Austria, 5), suggesting that **sustainability-driven consumer choices** are seen as a relevant and emerging trend. Other partners also gave modest scores, reinforcing its perceived significance.
- **Assumption C (Revival of private car ownership)** was most strongly endorsed by RDA Pilsen (Czech Republic, 12), indicating a **skeptical view of long-term shared mobility adoption** in that region, possibly due to cultural or infrastructural factors. SEVA (Slovakia, 5) and Biz-Up (2) also acknowledged this possibility, although with less emphasis.

Table 23: Rating Factor: 2. MAAS Platforms

Partner	Factor: 2. MAAS Platforms

	Assumption A: Unified & Transregional MaaS Platforms	Assumption B: Regional MaaS Platforms with transregional collaborations	Assumption C: Fragmented MaaS Platforms
CML, Germany	1	2	0
Biz-Up, Austria	1	7	2
RDA Pilsen, Czech Republik	0	2	8
PU, Germany	2	6	3
PBN, Hungary	18	10	9
CCIS, Slovenia	0	0	3
SEVA, Slovakia	3	5	2

This table summarizes the results of a strategic assumption-rating exercise on the future evolution of **Mobility-as-a-Service (MaaS) platforms**, conducted during the third transnational workshop. As MaaS becomes increasingly central to digital and user-centric mobility systems, project partners evaluated three assumptions representing different potential configurations of future MaaS ecosystems. Each assumption was rated based on its perceived relevance and feasibility in the partner's regional context by 2035. The assumptions assessed were:

1. **Assumption A: Unified and transregional MaaS platforms** – A small number of large-scale, interoperable MaaS platforms emerge across Europe, offering seamless mobility integration across regions and borders.
2. **Assumption B: Regional MaaS platforms with transregional collaboration** – Regional platforms dominate but cooperate through shared standards, partial integration, and limited cross-border services.
3. **Assumption C: Fragmented MaaS platforms** – A heterogeneous landscape persists, with non-integrated, localized MaaS offerings and limited coordination between providers.

Key insights from the ratings include:

- **Assumption A (Unified & transregional MaaS)** received the strongest endorsement from PBN (Hungary, 18), indicating a highly optimistic view on large-scale platform integration. Most other regions rated this assumption cautiously, with low scores (e.g., Biz-Up, Austria, and SEVA, Slovakia, both 1–3), suggesting **skepticism regarding full unification** of MaaS systems across borders.
- **Assumption B (Regional platforms with collaboration)** was consistently supported, with PU (Germany, 6), Biz-Up (Austria, 7), and SEVA (Slovakia, 5) all assigning mid-range values. This assumption appears to be the **most widely accepted and realistic** pathway, balancing regional autonomy with functional integration.

- **Assumption C (Fragmented platforms)** was strongly rated by RDA Pilsen (Czech Republic, 8) and moderately by others (e.g., PBN, Hungary, 9), indicating concern that **platform fragmentation and lack of standardization** could remain key challenges, particularly in regions with complex stakeholder landscapes or limited digital infrastructure.

2.4.3 Scenario Description

Partner	Factors and Assumptions					
	1			2		
	A	B	C	A	B	C
CML, Germany	x	x			x	
Biz-Up, Austria	x	x			x	
PBN, Hungary				x		
CCIS, Slovenia						x
SEVA, Slovakia			x		x	

Describing and explaining text per affecting partner on **Scenarios** made by participants in the following - Canva in Appendix

2.4.3.1. German (Bavarian) Scenario (CML)

In the Regensburg workshop, the following key aspects were discussed for the platform economy scenario:

Success factors include **regulatory clarity**, **data protection**, and a strong **user experience**. Identified risks are **monopolization**, **digital exclusion**, and the **inhibition of innovation**. Cross-regional cooperation is considered essential to enable seamless mobility chains.

From a technological perspective, key drivers are **AI**, **urbanization**, **cost pressure**, and the availability of **digital infrastructure**.

Implementation trends point toward **shared mobility** and **locally oriented Mobility-as-a-Service (MaaS) platforms**. **One-app solutions** are gaining importance, and **evaluation and analytics platforms** are playing an increasingly relevant role in shaping the ecosystem.

Overall objective 2030-2035: More liveable cities and reduced vehicle numbers.

2.4.3.2. Austrian Scenario (Biz-Up)

Supra-regional cooperation --> Separate MaaS platforms for each country for a smooth transition between the individual modes of transport (real-time data, seamless planning and payment) to enable the closure of gaps (public transport) in the country.
Trend away from private cars due to: Sustainability goals (Scope 3), sharing instead of owning, increase in costs of motorised private transport, increase in cycling & public transport use. New business models are emerging --> suppliers are becoming system providers

The main risks identified for this kind of MaaS platforms is the acceptance and willingness to use of the population as well as the economic operation of the platform itself. On the contrary there are also several drivers which can counteract those risks, such as the climate change and the needs of the population. Regulations and legislations can also support this scenario by enforcing sustainability goals and by giving advantages for alternative mobility solutions, such as better parking spots for bicycles (front of entrance), carpooling from the employer side, etc. Skills that are needed to deploy this solution will be the development of proportionate sharing of costs/profits between stakeholders, data processing (real time-data, traffic data, user data, availability of public transport) and some innovative business models and offers by companies.

2.4.3.3. Czech Republik Scenario (RDA)

The first workshop was attended by 14 participants representing 11 stakeholders at the Regional Development Agency of the Pilsen Region. The timely topic attracted several business support organizations from the region, as well as four relevant companies from the industry. Given the predominant presence of business support organizations, the discussion focused on the economy, the platform economy, geopolitical influences, and government incentives and grants for the automotive industry.

Mobility as a Service (MaaS) in the Pilsen Region

In the largest city of the Pilsen Region, Pilsen, Mobility as a Service (MaaS) is being developed as an isolated solution, primarily in combination with private car transport. In contrast, other cities in the region rely solely on public transportation in the form of bus services. Regional mobility is supported by a network of regional trains and bus lines. The Integrated Transport System of the Pilsen Region enables passengers to use a single travel document across all participating carriers, enhancing convenience and connectivity.

Risks and Barriers to Further Expansion

- **Culture of Ownership**: In the Czech Republic, car ownership is still widely perceived as a symbol of status and personal freedom. Shifting toward car sharing requires a significant cultural change, which may be challenging due to lingering sensitivities rooted in the country's communist past, where restrictions and prohibitions were common.
- **Building Trust and Awareness**: Public awareness of the benefits of car sharing—such as cost savings and environmental advantages—remains limited. Many people are unfamiliar with how these services work or how they could improve their daily mobility.
- **Digital Literacy**: Car sharing typically relies on mobile apps and digital platforms, which can be a barrier, particularly for older generations who may lack the necessary IT skills or confidence to use such technologies.

Estimated Milestones to 2035:

- 2026: Clear and realistic EU objectives, grants to support the sector, awareness campaign
- 2030: Change in mindset – share, not own is started in certain areas and groups
  Mobility as a Service (MaaS) development of isolated solution in major cities in the region
- 2035: Mobility as a Service (MaaS) development of interconnected solutions between large cities
  Increase in the use of environmentally friendly vehicles

2.4.3.4. Hungarian Scenario (PBN)

By 2035, the Jászság region has fully embraced a unified and interoperable Mobility-as-a-Service (MaaS) ecosystem. Mobility services across urban and rural zones are seamlessly integrated into digital platforms that allow real-time trip planning, booking, and payment across multiple providers. Regional startups collaborate with municipalities to co-develop user-centered apps, while national policies and EU funding enable cross-border MaaS compatibility. As car ownership declines, shared, subscription-based mobility solutions become mainstream, supported by agile service innovation, strong UI/UX design, and a proactive entrepreneurial culture. Jászság positions itself as a model region for inclusive, platform-based mobility transformation.

By 2035, the Jászság region has emerged as a national frontrunner in the shift toward platform-based, shared mobility. Embracing a fully interoperable Mobility-as-a-Service (MaaS) ecosystem, the region integrates urban and rural transport options into a seamless digital experience for users. Through real-time trip planning, booking, and payment across providers, the region ensures accessibility, flexibility, and efficiency in mobility services.

The transition was catalyzed by rising demand for smart, data-driven transport solutions and EU strategies targeting sustainable mobility. Regional startups partnered with municipalities to develop user-centric digital apps, supported by national policy, agile innovation, and EU funding. Early challenges such as digital illiteracy, privacy concerns, and regulatory fragmentation were overcome through targeted education, inclusive design, and adaptive infrastructure.

A shift from car ownership to subscription-based transport models redefined mobility norms. New business models emerged—ranging from pay-per-use systems to cross-provider ride- and micromobility services—fueling innovation in both public and private sectors. Investment in digital tools, real-time tracking, and cloud-based payment solutions reinforced the transformation.

The Jászság region has cultivated a skilled workforce proficient in mobility data analysis, platform integration, and UX design, while fostering collaboration between engineers, designers, and public authorities. By 2035, the region is fully aligned with national and EU MaaS strategies, becoming a model for inclusive, smart, and scalable platform-based mobility.

Milestones to 2035:

- 2026: First regional MaaS trials launched with municipalities
- 2030: Cross-provider platform integration achieved with key urban centers
- 2035: SMEs begin exporting digital mobility tools; regional MaaS fully aligned with EU strategies

2.4.3.5. Slovenian Scenario (CCIS)

There is little potential in platform economy service development in the region. While there is higher sustainability awareness in the region, there is little realistic opportunity for mass shared use of personal cars, mostly due to regulative and insurance issues as well as a big taxi lobbying power. MaaS platforms could be locally developed (i.e. city-based usage funded by EU pilot projects) and mostly dispersed. There could be a rise in OEM-based MaaS platforms (i.e. ToyotaGO for last km mobility).

The Platform economy scenario for Slovenian companies involves integrating services into larger international platforms. Goals focus on better transport coverage, multi-industry collaborations, and deeper integration of MaaS platforms for public transport. Regional success factors highlight the need for proper infrastructure, regulatory framework limitations, and lacking financial support. The economic context

emphasizes the region's dependence on external connectivity and integration into larger networks to justify investments. Risks include lack of infrastructure, uncertain regulations, geographical challenges, low service acceptability, and reliance on foreign providers. Overall, the scenario aims to enhance digital presence and customer engagement through innovative solutions and collaborations, while addressing regional and economic challenges.

Some possible steps toward a more developed scenario are:

- **2026**: Companies start thinking about new business models and entering pilot projects. Public funding support for innovative solutions. Investment into digital infrastructure. Support of overall digitalization (focus on programming and data skills in school programmes).
- **2030**: Slovenian companies create temporary shared mobility solutions by partnering with ICT. Public transport in different cities works through shared platforms. Regulation tries to standardize quality of data protection.
- **2035**: Slovenian companies start integrating their services into larger international platforms (multiple scattered providers).

2.4.3.6. Slovak Scenario (SEVA)

The drive for the Platform Economy in urban mobility stems from city densification, addressing climate change, and opportunities for transport/taxi companies and IT startups. Additionally, the younger generation is less inclined to own cars. However, we believe the Platform Economy is still too complicated for mainstream and older customers, which may lead to slow adoption among the general population. We also see challenges in rural and inter-urban transport in Slovakia, particularly regarding a lack of confidence in card payments. Although the Platform Economy could reduce transportation costs, alleviate parking issues by reducing the number of cars, decrease traffic congestion, and promote clean urban environments, we think Slovak consumers would be more amenable to revitalizing their own vehicles through OEMs' smart product policies, such as add-on services, banking, and leasing when purchasing a car. This may eventually pave the way for regional MaaS platforms that collaborate at regional or supra-regional levels. Clear regulations, robust data privacy measures, and effective analytics are essential for fostering growth and building trust in platform-based mobility systems.

The Platform Economy landscape for Slovak businesses must develop innovative business models that connect current and potential stakeholders (including cities, IT firms, transportation providers, OEMs, etc.) and foster collaboration with start-ups focused on emerging services and technologies.

The estimated timeline for the steps to be taken is as follows:

- **2026**: Raising awareness about the advantages of the Platform Economy and disseminating best practices.
- **2030:** The initial low to zero-emission zones are established in Slovak cities.
- **2035:** Individuals and businesses prefer sharing cars or parking spaces rather than owning them.

3. Regional Workshop II: Transformation Products and Services – company perspective

In the second regional workshop each region designed a representative company persona, for its region and per topic which was chosen therefore and developed for this company a new service/product.

In the following table it is shown which topics were chosen per region.

	DE	AT	CZ	DE	HU	IT	PL	SI	SK
	CML	Biz-Up	RDA Pilsen	PU	PBN	NOI	KSSE	CCIS	SEVA
Automation	x	x		x		x	x	x	
Electrification	x	x		x	x	x	x	x	x
Connectivity	x				x		x		x
Platform Economy	x		x						x

With the developed company personas in mind the participants designed new services/products for the year 2035, discussed those in the group, put them in a Now/Wow/How/Ciao Matrix to show the relation of value and effort. As a next step all participants rated the importance of the developed products/services, and the groups then did a deep dive into the highest voted product/service with a Business Model Canva. Those CANVAs will be described per region.

The developed company personas, pictures of the Workshops and the Now/Wow/How/Ciao Matrix can be found in the appendix.

3.1 CML, Bavaria, Germany

Automation

The proposed service involves a hardware-update model aimed at delivering sustainable, high-performing, and future-proof solutions with scalable and individualised options. Central challenges include defining data ownership and user rights and establishing viable business models (buy vs. lease). Implementation depends on interface design and collaboration with Tier 1 suppliers and research institutions. The client relationship is characterised by public transport operator (PTO) involvement. The concept supports long-term adaptability through modular automation systems. This will be an incentive/ high value proposition to buy an autonomous vehicles.

<table>
<tr><td>Description new product/service
- hardware-update concept</td><td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- interfaces
- data owner? data user?
- Business Model
-> buy / lease</td><td>Business strategy & KPIs of the new product/service</td><td>Client segments</td></tr>
<tr><td>Value proposition
- sustainable
- best performance
- future-proof
- individuality & scalability</td><td>Key resources to implement new product/service
- Tier 1 research
- cooperation</td><td>Client relationships
- PTO

Channels</td></tr>
</table>

Connectivity

The car is reimagined as a "living room on wheels," tailored to individual needs and eliminating the need for active participation in traffic. Mobility becomes a productive and time-saving experience. Implementation relies on autonomous driving, data usage, and standardisation within a platform-based ecosystem. The key idea is that the car becomes a personal companion, with data-driven services shared via social media. Being a first mover is seen as a competitive advantage in this space.

<table>
<tr>
<td>Description new product/service
- Car is only the shell
- inside it is adapted to the person
- no active participants in traffic safe mobility offer
- movement is not a waste of time</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- rethink car and mobility
- we do not want to be active participants of traffic anymore
- standardisation
- platform-based
- collect data to use it as well</td>
<td>Business strategy & KPIs of the new product/service
- First mover will be winners</td>
<td>Client segments
- Everyone regarding the car as "mobility"</td>
</tr>
<tr>
<td>Value proposition
- Living room on wheels
- More time for productivity
- time saving</td>
<td>Key resources to implement new product/service
- Autonomous driving
- bandwidth</td>
<td>Client relationships
- The car is your friend

Channels
- Social media</td>
</tr>
</table>

Electrification

This service concept envisions intelligent connectivity between production, storage, and usage of electricity, enabled by smart meters and bidirectional charging. The goal is to simplify and enhance user comfort by removing the need for wires and creating seamless integration. Implementation depends on overcoming system complexity through standardisation and political frameworks. Smart infrastructure plays a central role in enabling this solution. Although specific KPIs and client segments are not defined, the focus lies on technological integration and ease of use.

<table>
<tr><td>Description new product/service
- intelligent connectivity of all systems
- production, storage and use
- smart meter
- bidirectional charging</td><td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- get rid of closed/complex systems</td><td>Business strategy & KPIs of the new product/service</td><td>Client segments</td></tr>
<tr><td>Value proposition
- simplicity
- comfort
- no wire necessary</td><td>Key resources to implement new product/service
- standardisation
- political framework
- smart meter
- bidirectional charging</td><td>Client relationships</td></tr>
<tr><td colspan="3"></td><td>Channels</td></tr>
</table>

Platform Economy

The new service focuses on customer-centric car-sharing with flexible, barrier-free, and free-floating vehicle access. It aims to bring vehicles directly to users, leveraging proximity and convenience while addressing regulatory requirements and social acceptance. The goal is to change mobility behavior by offering competitive pricing and ensuring good vehicle conditions. Key stakeholders include car-sharing providers, infrastructure owners, and public transport interfaces. Success is measured by transaction volumes and behavioral shifts captured through household surveys.

<table>
<tr>
<td>Description new product/service
- Create car-sharing parking spaces
- enhance flexibility
- design barrier-free
- offer free-floating</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- social, political and economical acceptance
- car still a status symbol -> new way of thinking
- how to get to the car-sharing -> proximity
- determine regulatory requirements
- use spaces next to bus stops
- enhance acceptance
- regulatory restrictions</td>
<td>Business strategy & KPIs of the new product/service
- amount of transcations
- change of mobility behavior
- household surveys</td>
<td>Client segments
- all citizens</td>
</tr>
<tr>
<td>Value proposition
- customer-centered
- Connectivity
- Availability
Proximity to users
- Vehice comes to the user
- Condition of the vehicle
- Price/Performance -> Competitiveness</td>
<td>Key resources to implement new product/service
- car-sharing providers
- money
- owners of the spaces
- charging stations</td>
<td>Client relationships
- Distance to the clients
- create incentives
- suitable for individual use

Channels
- marketing</td>
</tr>
</table>

3.2 Biz-Up, Austria

Automation

For this topic, the group developed services for an existing logistics company, which was not part of the workshop. The new service developed by the group was teleoperation logistics, so that the company can tackle the driver shortage and be more efficient in their doing. This would lead to higher operating hours and lower costs. Nevertheless, new key resources for the implementation will need to be acquired e.g. employees, new technology / vehicles and the legal framework will need adaption for this to be deployed. The key activities that need to be done for the before the roll-out are the building of expertise, testing, implementing the teleoperation centre as well as test the setup with pilot customers incl. evaluation and retraining.

<table>
<tr>
<td>Description new product/service
Teleoperation:
-> Activate vehicle
-> Plan route + platoon
-> Select operator
-> Drive + control
-> Arrival</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
2025: Build expertise; train employees

2028: provide & test remote-controlled, semi-automatic vehicles; Approval & insurance

2030: Teleoperation center

2031: Pilot customer(s); Evaluation & retraining

2035: Roll-out</td>
<td>Business strategy & KPIs of the new product/service
- Relation vehicle / employee (e.g. 1:3; 1:37)
- Failure frequency (CONTROL)
- Operation 24/7
- Reliability level 99%
- Vehicle overall / operation

- Satisfied pilot customers before roll-out
- Service level for teleoperation center
- More trips possible
- Employee satisfaction</td>
<td>Client segments
Teleop: US

indirect: Shipper / Logistican
Shipper: Industry, large orders (large shipments)
Logistician: Container from A to B</td>
</tr>
<tr>
<td>Value proposition
- Lower costs through platooning + higher operating hours (24/7)
- Reliable & safe arrival
- Counteracting driver shortage</td>
<td>Key resources to implement new product/service
- Employees
- Vehicle
- Data center
- Legal framework
- Teleoperation center including technical equipment</td>
<td>Client relationships
- Direct sales
- Key accounting
- Operation center - emergency hotline

Channels
- Online portal
- Personal contact
- Hotline</td>
</tr>
</table>

Electrification

The group for electrification developed a completely new business model for a battery/power storage unit vehicle which can drive to various areas of application, to have a flexible and decentralized power supply without dependency on the power grid. This can not only be beneficial for e.g. construction sites or mining but also as blackout prevention and other use-cases.

<table>
<tr>
<td>Description new product/service
- Flexible / decentralized energy supply
- Blackout & uninterruptible power supply
- Energy without infrastructure at any location
- Including maintenance of hardware & software</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- Hardware (Power) experise
- Software / IT expertise
- Automotive expertise
- Hardware production
- Assembling
- Networking:
-> Battery
-> Chassis
-> Power electronics
-> Data center etc.

Customer requirements + Business Case (3 months)
->
Product specification (3 months)
->
Define supplier network (2 months)
->
Business Case Review
->
Contract negotiations (6 months)
->
Define pilot project (1 month)
->
Prototype + basic development (6 months)
->
Testing + series development (12 months)
->
Lead customer commissioning
->
Scaling</td>
<td>Business strategy & KPIs of the new product/service
- Market readiness by 2028 in AUT / GER
- Revenue > 20 million by 2030, start in South America
- Revenue > 100 million by 2035, globally represented</td>
<td>Client segments
- Construction site operators
- Mining
- OEM
- Fleet operators
- Companies with large vehicle fleets
- Subcontractors (construction machinery, agriculture)
- Military
- Civil Protection</td>
</tr>
<tr>
<td>Value proposition
Mobile + location-independent</td>
<td>Key resources to implement new product/service
- Project management
- Validation & testing facility</td>
<td>Client relationships
personal contact

Channels
- Direct sales
- Trade fairs (agriculture, construction machinery)
- Tender offers</td>
</tr>
</table>

3.3 RDA Pilsen, Czech Republik

The second workshop, held on May 22, 2025, at the COMTES FHT research institute in Dobřany, brought together seven stakeholders, including two research organizations and five business support institutions.

The strong presence of business support organizations helped steer the discussion toward strategic collaboration and the enhancement of the innovation ecosystem within the Pilsen Region.

Platform Economy

To support the ongoing transformation of the automotive industry in the Pilsen Region, a set of targeted services has been proposed. These include the development of transformation roadmaps to help companies navigate structural and technological changes, and the creation of knowledge maps to identify key competencies and innovation potential within the region. Additionally, consulting services will be offered to support the implementation of new technologies and to provide guidance on managing energy costs effectively. The initiative also emphasizes the importance of workforce development through support for specialized training programs tailored to industry needs. Finally, the implementation of testbeds will enable companies to experiment with and validate new technologies in a controlled environment, fostering innovation and reducing the risks associated with adoption. Such services could be provided directly by the Regional Development Agency of the Pilsen Region (RDAP). However, an even more effective approach would be to offer them through the upcoming Innovation Center of the Pilsen Region, which is expected to serve as a central hub for innovation support, coordination, and strategic development in the region.

3.4 PU, Baden-Württemberg, Germany

The second regional workshop was held on April 17, 2025, in Pforzheim, Germany. The session brought together representatives from four companies and three business support organizations (BSOs), who were invited to critically examine and validate the Personas developed during the previous workshop. No research institutions were invited to participate in this session - we, in our role as a university, consider ourselves to represent the research perspective within the regional project. This allowed the discussion to focus on practical and business-relevant viewpoints, complementing the academic insights already integrated into the process.

Automation

Title: From stamping technology Leadership → Market Entry Strategy for MedTech Components

Reason: Stamping Technology Companies aims to reduce its reliance on the automotive sector, which is facing structural shifts due to emerging technologies. In particular, the rise of **autonomous driving is expected to reduce demand for traditional automotive components**, shrinking market volume and making it a less lucrative focus in the long term. To ensure business continuity and tap into a growing, high-margin industry, the company is pursuing **strategic diversification into the MedTech sector**—a market characterized by strict regulatory requirements, increasing demand, and opportunities for long-term partnerships with OEMs and innovators.

Description

Stamping Technology Companies are increasingly shifting focus toward the MedTech sector to diversify beyond the declining automotive market—particularly as autonomous driving reduces the need for traditional stamped components. The new strategy centers on producing certified precision parts for medical applications, such as titanium mounts for cochlear implants, housings for insulin pumps and inhalers, micro-brackets for disposable surgical tools, and contact springs for wearable ECG devices.

These components will be manufactured in small series under ISO 13485 standards, aligning with the regulatory demands of the healthcare industry. The value lies in rapid prototyping, short-run production, and in-house tooling, enabling stamping companies to act as agile and reliable partners for medical device OEMs. Implementation includes developing cleanroom-compatible processes, technical documentation templates, and a MedTech-specific supplier network. The rollout will be phased: feasibility studies and customer targeting in 2026, certification preparation and training in 2027, pilot production in 2028, and full market launch by 2029. Key resources include skilled staff, precision equipment (e.g., FeinMicro500), ISO consulting support, and an estimated €350,000 investment.

Target segments include implant manufacturers, surgical tool producers, wearable and diagnostic device OEMs, and MedTech start-ups. Relationships will be built through technical co-development, prototyping support, and long-term contracts with tailored pricing. Market access will be achieved via trade fairs (e.g., COMPAMED, MedtecLIVE), industry platforms, direct technical sales, and partnerships through regional MedTech clusters. Strategically, this transition aims to build a stable, future-oriented business model. KPIs include certification of two product lines by 2026, acquisition of five MedTech clients by 2027, and generating 15% of total revenue from the MedTech sector by 2029.

<table>
<tr>
<td>Description new product/service
* Titanium mounts for cochlear implants
* Housings for insulin pumps and inhalersMicro-brackets for disposable surgical tools
* Contact springs for wearable ECG units
*Manufactured to ISO 13485 standards in small series.</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
* Establish clean handling & packaging procedures
* Develop technical documentation templates
* Build MedTech-specific supplier network

* 2026: Feasibility & MedTech customer targeting

* 2027: ISO 13485 prep & staff training

*2028: First pilot parts (e.g. for “MedHör GmbH”)

*2029: Process validation & market launch</td>
<td rowspan="2">Business strategy & KPIs of the new product/service
* Enter MedTech niche for stability beyond automotive

KPIs:
* 2 product lines certified by 2026
* 5 clients by end of 2027
*15% revenue from MedTech by 2029</td>
<td>Client segments
*Implant manufacturers
* Diagnostics & wearable device * OEMsSurgical tool producers
* MedTech start-ups</td>
</tr>
<tr>
<td>Value proposition
* Certified precision parts for regulated markets
* Rapid prototyping & short-run production
*In-house tooling for faster development
* Trusted EU-based partner for OEMs</td>
<td>Client relationships
* Close technical collaboration
* Prototype support & joint developmen
* tLong-term contracts with custom pricing</td>
</tr>
<tr>
<td colspan="2"></td>
<td>Key resources to implement new product/service
* Experienced staff & toolshop
* Feinschnitt machine (e.g. FeinMicro500)
* ISO consultant
* Budget: ~€350k for equipment, training, clean zone</td>
<td>Channels
* Trade shows (COMPAMED, MedtecLIVE)
* Industry platforms (MedicalMountains, DeviceMed)
* Direct sales with technical reps
* Start-up partnerships via regional MedTech clusters</td>
</tr>
</table>

Electrification

Title: From SW-Integrator to Full-Scope EV Charging Park Solutions for Public and Commercial Clients

Reason: To evolve from a software-centric business to a full-scope infrastructure provider, stamping and energy-tech companies are seizing the opportunity presented by the growing demand for electric vehicle (EV) charging infrastructure. By moving upstream into project development, hardware integration, and long-term operations, they can capture greater value, improve margins, and build deeper client relationships. This shift also responds to public sector electrification goals and commercial fleet decarbonization trends.

Description

The new service focuses on the **end-to-end development, installation, and operation of EV charging parks**, designed for municipalities, logistics providers, retailers, and real estate developers. It includes:

- **Site analysis**, layout planning, and permitting
- **AC/DC hardware integration**, smart grid connection
- **Backend services** for billing, monitoring, and maintenance
- **Long-term operation models** including remote diagnostics, 24/7 support, and optional energy consulting

The offering is modular and scalable for urban and rural environments and complies with **GDPR and industry standards**. Companies provide infrastructure that is backend-independent and suitable for white-label or co-branded implementations.

Implementation activities span from **feasibility and partner sourcing** to backend integration and financing model development. Rollout targets include 10 operational charging parks by 2026, 98%+ SLA uptime, and 25% of revenue from operational services by 2027.

Key clients include municipalities, commercial fleet operators, and developers, with client relationships built through **long-term contracts**, technical dashboards, and investment-sharing models (e.g., leasing, PPPs, build-operate-transfer). Access to market is ensured through **direct sales, public tenders**, and visibility at industry trade shows like Power2Drive.

<table>
<tr>
<td>Description new product/service
End-to-end development and operation of EV charging parks for public, private, and commercial use:
* Site analysis, layout planning, permits
* Hardware integration (AC/DC), smart grid connectionBackend, billing, maintenance, and monitoring
* Turnkey projects for municipalities, logistics, retail, real estate.</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
* Site feasibility & stakeholder coordination
* Hardware partner sourcing & qualification
* Permit management (e.g. grid access, building code)
* Backend integration (own + white-label options)
* Operation & monitoring of installed charging systems
* O&M concept incl. remote diagnostics & 24/7 hotline
* Energy consulting: load management, PV integration
* Development of financing models (leasing, PPP, subsidies)</td>
<td>Business strategy & KPIs of the new product/service
* Evolve from software-only to full-scope infrastructure provider
* Build strategic control over projects to increase margins & stickinessKPIs:
* 10 full charging parks by end of 2026
* Average contract value > €200k
* SLA availability > 98%
* 25% revenue from operation services by 2027</td>
<td>Client segments
* Municipalities & city utilities (B2G)
* Logistics & fleet operators
* Commercial real estate developers
* Retail chains (e.g. supermarkets, furniture stores)
* Company parking (employee charging, visitor zones)</td>
</tr>
<tr>
<td>Value proposition
* One-stop solution: from planning to operation
* Seamless integration of charging, energy, and IT
* Scalable, modular systems for rural & urban needs
* GDPR-compliant, backend-independent infrastructure</td>
<td>Key resources to implement new product/service
* Project managers with energy/legal background
* Strong installation & grid partners
* Own backend platform (Connectra Core OS)
* Pre-qualified hardware catalogue
* Capital partners or leasing banks for upfront investments</td>
<td>Client relationships
* Long-term contracts incl. operation & maintenance
* Co-branding or white-label models
* Optional investment split (e.g. build–operate–transfer)
* Technical hotline & dashboard access for clients

Channels
* Direct project acquisition (B2B sales team)
* Tenders & PPP calls (especially municipal)
* Presence at energy & mobility trade shows (e.g. Power2Drive, polisMOBILITY)*
Partnerships with property developers and energy agencies</td>
</tr>
</table>

3.5 PBN, Hungary

Electrification

Title: Smart Heat Pump Module

Reason: Designed for energy-efficient buildings and EV charging stations, this IoT-enabled heat pump aligns with BEV infrastructure needs. It leverages AutoTherm's thermal expertise and contributes to e-mobility integration.

Description: For this topic, the group developed a new product concept called the Smart Heat Pump Module, targeting green buildings and e-mobility infrastructure. The product is a high-value, IoT-connected heat pump designed to optimize thermal management in buildings and EV charging stations, contributing to energy efficiency and the broader electrification trend.

Key activities for implementation are structured over four years and include prototype development, partner onboarding, market testing, and production ramp-up. The business strategy focuses on achieving return on investment within four years, with a break-even point after 2,000 units sold and a market penetration goal of 10% within the national segment over five years.

The product targets client segments such as EV OEMs, building infrastructure firms, IT companies, and public institutions. The implementation requires new resources including design engineers, embedded software developers, licensing of thermal components, and access to EU innovation funding.

Client relationships are to be built through B2B partnerships, co-development efforts, and after-sales services. Channels identified for reaching the market include industry fairs, direct B2B sales, green tech procurement platforms, and regional cluster networks.

Product / Service Canvas: Smart Heat Pump Module (Electrification)

<table>
<tr>
<td>Description
New product/service

High-value, mid-effort product for green buildings and e-mobility infrastructure.

[-] This IoT-enabled heat pump module directly supports energy-efficient thermal management for green buildings and electric vehicle (EV) charging stations.
[-] It is explicitly linked to e-mobility infrastructure, making it highly relevant to the electrification megatrend.
[-] Thermal optimization plays a critical role in the performance and energy efficiency of BEVs and related infrastructure.</td>
<td rowspan="2">Key activities to implement the new product/services (incl. timeline)

• Prototype development (Year 1)
• Partner onboarding (Year 2)
• Market testing (Year 3)
• Production ramp-up (Year 4)</td>
<td>Business strategy and KPIs- of the new product/service

• Target ROI within 4 years
• Break-even after 2,000 units sold
• Market penetration: 10% in national segment within 5 years</td>
<td>Client segments

• EV OEMs
• Building infrastructure firms
• IT companies (for server solutions)
• Public institutions</td>
</tr>
<tr>
<td>Value proposition

Energy-efficient, IoT-connected heat pump module for buildings and EV charging stations, enabling optimal thermal regulation.</td>
<td>Key resources to implement the new product/service

• Design engineers
• Embedded software developers (for IoT products)
• Licensing of thermal tech components
• EU innovation funding</td>
<td>Client relationships

• B2B partnership models
• Technical co-development
• After-sales maintenance and support

Channels

• Industry fairs
• Direct B2B sales
• Green tech procurement platforms
• Regional cluster networks</td>
</tr>
</table>

Electrification

Title: Thermal Battery Cover for EVs

Reason: This protective casing stabilizes battery temperature and lifespan in EVs. It targets OEM clients, positioning AutoTherm as a specialized supplier in electric vehicle production.

Description: For this topic, the group developed a new product concept called the Thermal Battery Cover for EVs, aimed at OEM partners in electric vehicle manufacturing. The solution is a high-effort, specialized protective shell that offers thermal management for EV batteries, with the goal of improving safety and extending battery lifespan under varying temperature conditions.

The product directly supports the electrification domain by enhancing reliability and scalability in EV production. The planned implementation timeline includes prototype development in Year 1, partner onboarding in Year 2, market testing in Year 3, and full production ramp-up by Year 4.

The business strategy targets a return on investment within four years, break-even after 2,000 units sold, and 10% market penetration within five years in the national segment. Key resources needed include design engineers, embedded software developers, licensed thermal technology components, and EU innovation funding.

The targeted client segments include EV OEMs, building infrastructure firms, IT companies, and public institutions. Client relationships will be built through B2B partnership models, technical co-development, and after-sales support. Sales channels identified for reaching the market include industry fairs, direct B2B sales, green tech procurement platforms, and regional cluster networks.

Product / Service Canvas: Thermal Battery Cover for EVs (Electrification)

<table>
<tr><td rowspan="2">Description
New product/service

High-value, high-effort specialized solution for OEM partners in EV manufacturing

[-] This product is designed specifically for EV batteries, offering thermal protection to improve safety and battery lifespan.
[-] It targets OEM partners in EV manufacturing, which places it directly within the electrification domain.
[-] Effective battery thermal management is essential for reliable and scalable electrified vehicle production.</td><td rowspan="2">Key activities to implement the new product/services (incl. timeline)

• Prototype development (Year 1)
• Partner onboarding (Year 2)
• Market testing (Year 3)
• Production ramp-up (Year 4)</td><td>Business strategy and KPIs- of the new product/service

• Target ROI within 4 years
• Break-even after 2,000 units sold
• Market penetration: 10% in national segment within 5 years</td><td>Client segments

• EV OEMs
• Building infrastructure firms
• IT companies (for server solutions)
• Public institutions</td></tr>
<tr><td rowspan="2">Key resources to implement the new product/service

• Design engineers
• Embedded software developers (for IoT products)
• Licensing of thermal tech components
• EU innovation funding</td><td>Client relationships

• B2B partnership models
• Technical co-development
• After-sales maintenance and support</td></tr>
<tr><td>Value proposition

Protective thermal management shell for EV batteries, improving safety and battery longevity under variable temperature ranges.</td><td>Channels

• Industry fairs
• Direct B2B sales
• Green tech procurement platforms
• Regional cluster networks</td></tr>
</table>

Connectivity

Title: Cooling Plate for Server Racks

Reason: This solution meets the cooling demands of data centers and edge computing sites essential for V2X and smart mobility systems. It connects AutoTherm to digital infrastructure markets.

Description: Addressing the growing demand for localized data processing infrastructure, the group introduced a concept for a Cooling Plate for Server Racks. This solution adapts heat-exchange plates specifically for compact server cooling needs in data centers supporting connected vehicles, V2X systems, and edge computing. It ensures efficient and reliable thermal management—an essential aspect of automotive and digital connectivity.

The envisioned rollout involves four key steps: prototype development in the first year, followed by partner onboarding, market testing, and a full production ramp-up by year four. Strategic objectives include achieving return on investment within four years, selling at least 2,000 units to break even, and securing a 10% share in the national market within five years.

The product targets IT companies, EV OEMs, public institutions, and building infrastructure firms. To succeed, it requires resources such as design engineers, embedded IoT developers, licensed thermal technology, and EU funding. Go-to-market strategies involve B2B partnerships, technical co-development, and after-sales services, with outreach conducted through industry fairs, direct sales, green procurement platforms, and regional networks.

Product / Service Canvas: Cooling Plate for Server Racks (Connectivity)

<table>
<tr><td>Description
New product/service

Low-effort product adaptation for growing demand in local data centers.

[-] The product supports data centers, which are critical infrastructure for connected vehicles, V2X systems, and edge computing.
[-] Connectivity in the automotive sector is heavily data-driven, requiring reliable and efficient cooling for local processing.
[-] The customer base includes IT companies and OEMs, indicating a strong link between vehicle connectivity and digital infrastructure.</td><td rowspan="2">Key activities to implement the new product/services (incl. timeline)

• Prototype development (Year 1)
• Partner onboarding (Year 2)
• Market testing (Year 3)
• Production ramp-up (Year 4)</td><td>Business strategy and KPIs- of the new product/service

• Target ROI within 4 years
• Break-even after 2,000 units sold
• Market penetration: 10% in national segment within 5 years</td><td>Client segments

• EV OEMs
• Building infrastructure firms
• IT companies (for server solutions)
• Public institutions</td></tr>
<tr><td>Value proposition

Adapted heat-exchange plates for compact server cooling, ideal for local data processing infrastructure.</td><td>Key resources to implement the new product/service

• Design engineers
• Embedded software developers (for IoT products)
• Licensing of thermal tech components
• EU innovation funding</td><td>Client relationships

• B2B partnership models
• Technical co-development
• After-sales maintenance and support

Channels

• Industry fairs
• Direct B2B sales
• Green tech procurement platforms
• Regional cluster networks</td></tr>
</table>

3.6 NOI, Italy

Regional Scenario Workshop 2 with Lego Serious Play, 16th May NOI Techpark Bruneck

NOI managed to convince 10 company and research representatives for the regional ecosystem (Large, Medium and Small enterprises, Tier1, Tier2, R&D services suppliers) to physically participate at the workshop, starting at 1pm and ending at 7pm. In the introduction part the project and the results of the first workshop were presented as a starting point before handing over to Verena Bachmann a qualified Lego Serious Play facilitator.

The participants started with a Lego warm up to learn the method, before building in 2

teams of 5 persons the strenghts of individual companies presenting them to each other and creating a company persona. The company personas were presented to the other group, who challenged with questions. Each fictive company build with lego a vision for 2035, which was challenged again be the other team. From the vision each group derived products/services, who were rated by the competing team.

Both company personas focused independently on Off-Highway Electromobility for mountain environment and touristic regions.
The company MoveOnic focused on B2B business with solutions and components for electric, selfdriving vehicles in intermodel Mobility ecosystems.
The company PlugPeak focused on B2C with a modular construction set for individual vehicles for customer in alpine touristic regions.

CANVA

<table>
<tr>
<td>Description new product/service
Components and solutions for electric, autonomous vehicles</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
not developed in the workshop due to limited time by company participants</td>
<td>Business strategy & KPIs of the new product/service
Amazon for E-Mobility components</td>
<td>Client segments
E-Mobility, intermodal transport</td>
</tr>
<tr>
<td>Value proposition
One stop shop for E-Mobility components: reliable, high quality, sustainable</td>
<td>Key resources to implement new product/service
Digital and Green competences, R&D, Software Development, Energy storage and distribution</td>
<td>Client relationships
strategic supplier

Channels
digital warehouse</td>
</tr>
</table>

3.7 KSSE, Poland

The second workshop took place on 08.05.2025 in Gliwice, Poland. Four companies were invited to present their persona and challenges. Representatives of companies, universities and research organisations took part in brainstorming and concept development during product idea generation and business modelling.

Automation

An innovative SME that developed an autonomous bus is facing challenges related to the lack of legal regulations regarding autonomous vehicles in public spaces and liability of parties involved in specific events (accidents). Also, local governments (potential clients) must conduct public tenders and often choose Chinese busses (price competition). The work group discussed how such a company - despite unfavorable conditions – could place its products on the market? Also, how could this company lever its existing experience and technological solutions in partnerships with other companies?

Business model for the selected product/service

<table>
<tr>
<td>New product description
Homologated autonomous bus
“Retrofit” of traditional buses, which will ensure autonomy at bus depots
Technological solutions for special vehicles</td>
<td rowspan="2">Key actions needed to implement a new product over time

2026:
Ensuring stable financing for the company
Preparation of the concept of the "Retrofit" service
Building relationships with special vehicle manufacturers to identify areas of technological cooperation
2027:
Implementation of the "Retrofit" service
Preparation of a pilot project with a manufacturer of special vehicles
2030:
Preparing a prototype for the vehicle homologation process (autonomous minibus)
Preparation and implementation of further projects with manufacturers of special vehicles
2032+:
Obtaining homologation for an autonomous vehicle
Launch of sales of autonomous vehicle
Permanent cooperation with manufacturers of special vehicles</td>
<td rowspan="2">Strategic goals and KPIs
Building an ecosystem of stakeholders interested in the development of autonomous vehicles in Poland (collaboration at the vehicle platform and autonomous driving system level, ensuring seamless integration, faster innovation cycles, tighter quality control and better data optimization across the system within solutions jointly developed in Poland
Involving stakeholders in the implementation of pilot projects and in communicating good practices as a support for the process of preparing an appropriate legal framework for autonomous vehicles in Poland
To be a leading provider of solutions for autonomous vehicles in Poland
Achieve a return on investment for investors over a 10-year period</td>
<td>Market segments
Public transport
Uniformed services
Manufacturers of special vehicles</td>
</tr>
<tr>
<td>Value Proposition
For the uniformed services segment:
Polish company
A close partner with a proven supply chain
For the public transport segment:
Lower operating costs (lower labor and fuel costs, higher productivity and better return on investment in fleet operations)
Increased service frequency and coverage (automated flexible fleet planning, better coverage, more passengers)
Improved safety and reliability (lower insurance and maintenance costs)
Emission reduction
Scalable mobile infrastructure within the framework of metropolitan mobility policy (integration within MaaS platforms)</td>
<td>Customer Relationships
Collaboration with potential clients in pilot projects
Collaboration with manufacturers of special vehicles within research and development projects
Channels to reach customers
Direct contacts
Social media
Industry events</td>
</tr>
</table>

Connectivity

A company producing special vehicles observes unfavourable conditions to include new technologies related to connected vehicles in its special vehicles because clients limit their requirements in public tenders to the already known solutions. Also, during the vehicle life cycle the company observes that clients and users have difficulties in communicating service and repair issues as a result of which interventions and parts delivery times are prolonged. Before one can consider including advanced technologies supporting V2X communications, the communication with stakeholders should be improved. A dedicated service platform looks to be a good step forward.

Business model for the selected product/service

<table>
<tr>
<td rowspan="2">New product description

A digital platform containing a library of modules, components and specific solutions, technical documentation for special vehicles

Interface for potential customer representatives (at the order preparation stage)
Interface for users/customers of special vehicles
(spare parts, submitting ideas for new solutions)
Interface for component and module suppliers</td>
<td rowspan="2">Key actions needed to implement a new product over time

2026-2028:
• Defining the technical conditions of the digital platform
• Determining the budget and securing financing
• Identifying areas requiring organizational change
• Building a digital platform
• Transferring information to a digital platform
2028-2030:
• Testing the digital platform in a pilot project with a group of existing customers
• Optimization of the digital platform based on the results of pilot projects
• Preparation of digital platform modules for individual target groups, taking into account their specific needs

2030+:
• Implementation of the digital platform
• Promotion of the digital platform in Poland
• Promotion of the digital platform abroad
• Organizing information and training meetings for target groups regarding the platform's functionality</td>
<td rowspan="2">Strategic goals and KPIs

• Increased sales among customers from other market segments (balancing the customer portfolio)
• Increased sales abroad</td>
<td>Market segments
• Uniformed services in Poland
• Customers on the European, Asian and African continents</td>
</tr>
<tr>
<td>Customer Relationships
• Making potential customers aware of the possibility of streamlining the order preparation process
• User training at the order fulfillment stage
• Building an ecosystem of users within the framework of privileged access to the digital platform
• Possibility for users to submit ideas</td>
</tr>
<tr>
<td>Value Proposition
• Expert cooperation with potential clients
• Accelerate the identification of needs and the timing of spare parts deliveries
• Knowledge base on new technologies and solutions (building awareness, technical consulting)
• Efficient communication with suppliers
• Engaging the customer in designing new solutions</td>
<td>Channels to reach customers
• Social media
• Information and training webinars
• Direct contacts
• Conferences
• Trade fairs</td>
</tr>
</table>

Electrification

For a company delivering plastic parts production services there are new opportunities to produce plastic parts for electric vehicles. However, these parts have to meet new requirements (fire safety, heat resistance, contact with electricity, including sensors, ...) Also, the time to market process is a challenge for many clients. The company can improve its internal processes, deliver full service from product development to testing and production.

Business model for the selected product/service

New product description • Connectors • Chargers • Ports in vehicles • Cases	**Key actions needed to implement a new product over time** 2026: • Market intelligence • Identifying areas that match the company's competences and machinery • Building the company's image 2027: • Reverse engineering • Development of product concepts • Carrying out research 2028+: • Information and promotional campaigns through direct contacts and participation in industry fairs • Building relationships with potential customers	**Strategic goals and KPIs** • Establishing a diversification strategy • Building a database of potential customers • Achieving increased customer awareness of the company's competencies • Gaining a strong position in market niches	**Market segments** • Electric vehicles • Autonomous vehicles • Railway sector • Defense sector **Customer Relationships** • Business and technology cooperation • Collaboration from idea to product
Value Proposition • Modularity • Individualization • Complementarity • Aesthetics • Comprehensive service • Partnership cooperation			**Channels to reach customers** • Direct contacts • Open days at the company for clients • Social media • Trade fairs • Industry conferences

For a company producing composite parts, the situation in the automotive sector was unclear since on European level there was an ongoing discussion on whether composite parts in vehicles should be banned or not. For now, composite parts are still allowed. Nevertheless, the company is looking for alternatives. Changes observed in the electric vehicle area (with opportunities for electric motorcross cycles) could create new opportunities for the company, for example composite rims.

Business model for the selected product/service

New product description Carbon fibre rims for motorcross cycles (wheel rim for speedway and *motocross motorcycles*)	**Key actions needed to implement a new product over time** 2026: • Searching for potential customers • Bidding and negotiations • Prototype production • Testing, research • Product Validation 2027: • Preparation and implementation of pilot projects on the track • Making corrections 2028: • Starting the sales process • Development of the "motorcycle rims" product family • Expanding the customer base 2029+: • Development of new technologies to optimize costs • Defining new market segments • Analyzing the market and contacting new customer groups	**Strategic goals and KPIs** • Completion of the R&D phase within 12 months • Acquiring at least 3 customer groups within 2 years • Development of new technology within 3 years from the SOP of the current technology • Generating margins of no less than 500%	**Market segments** • Segment " moto - speedway" • Moto -cross segment • Segment "speedway" **Customer Relationships** • Building partnerships with sports clubs • Building Business Relationships with Motorcycle Manufacturers
Value Proposition • Experience and material expertise • Partnership relationships within pilot projects			**Channels to reach customers** • Direct contacts • (2028+) Social Media • (2029+) Trade fairs

3.8 CCIS, Slovenia

The second workshop in Slovenia was carried out on April 16, 2025. The Advisory Board member of Drive2Transform was present to give an overall introduction into the trends in the automotive industry and later we discussed the scenarios of Automation and Electrification. Participants created personas of fictive companies in 3 groups, based on different pre-determined concepts developed by the workshop moderator. Each group then worked on their product portfolios in their selected scenario and came up with the following Canvas:

Electrification

The group in this area created a high-end highly flexible electric motors for luxury e-vehicles in the global market. Their persona focused on an SME company that has good innovative patent able to succeed with its high flexibility but small-scale production. The product was a niche one, where they emphasized the importance of being also a development partner to their customers, finding the most efficient solution. For Slovenian companies, such niches are often the answer to navigate a quickly changing market, and added flexibility in production lines can be helpful with future possible growth and adaptation to increased demand or diversification. They understand that for true success, this company would need large up-front costs for developing such highly automated production lines, and its staff would mostly represent electrical and mechanic engineers.

CANVA

Description new product/service

- High-end Electric Motor – flexible (HE-EM FLEX)
- Including flexible production line

Value proposition

- Endurance
- Fast delivery
- Flexibility/modularity
- Development support (based on the market requirements)
- Software solution integration
- We have the know-how and patents as a revolutionary solution

Key activities to implement the new product/service (incl. timeline)

2 years:

- Market research
- Supportive financing schemes
- Prototype and feasibility study

Year 3:

- Full line development
- First series
- B2B promotion

Business strategy & KPIs of the new product/service

- IP
- New customers search
- B2B promotions

Key resources to implement new product/service

- Investment → R&D stage funding
- Lead customer = investor (year 3+)
- Inside know-how (engineer team)

Client segments

- Niche customers (manufacturers of high-capacity vehicles)
- Global spread

Client relationships

- We are a development supplier

Channels

- B2B

Automation

Participants in these groups also acknowledged that their technologies are closely related to the topic of Connectivity as well. The first group in this topic was creating a product based on sensor and camera technologies. The products were robust camera and sensors with integrated heating and cleaning systems for better sensor perception and overall operation (supported by AI). Their technology was an enabler of autonomous driving, but they noticed multiple challenges still in the regulation and local availability of testing parks. Thus, they see Slovenia mainly as a supplier (Tier 1, but mostly Tier 2) in this area, but can be improved with the connection to software and data solutions, incorporating the connectivity area into the ecosystem of the industry.

The second group was developing and focusing on production technology that can help Tier 1 suppliers with automating production lines. They operated in the scenario of autonomous driving, offer Tier 1 producers a solution that includes consultations and IT support in the integration of their production technology into their companies. The product was based in AI, sensorics and machine vision as a connection for software and robotics to transform companies into a smart factory and increasing quality control and efficiency.

CANVA

Description new product/service
- New business model
- AI = WOW
- Sensorics and machine vision as a connection for software and robotics = smart factory

Key activities to implement the new product/service (incl. timeline)
1. Consulting
2. Managing production
3. SD Production
4. Building partner ecosystem
5. Coordination of solution development
6. Production as a service

Business strategy & KPIs of the new product/service
- High flexibility

Client segments
- specialized

Client relationships

Value proposition
- Automated production lines for unique products and high IT support on the road
- Net zero tech

Key resources to implement new product/service
- Ecosystem building = as a sort of center?

Channels
- Own distribution channels

CANVA

Description new product/service
- Robust camera and sensors with integrated heating and cleaning systems for better sensor perception and overall operation (supported by AI)

Key activities to implement the new product/service (incl. timeline)
1. Market research (2025)
2. Within 6 months create a business plan and feasibility study
3. Connecting with research institutions and other companies (1 year)
4. Product development (36 months)
5. Industrialization (24 months)
6. Test series in 2031
7. Scaling the production to 200 mio/year

Business strategy & KPIs of the new product/service
- 20 % EBITDA
- 10 PPM

Client segments
- Tier 1 suppliers
- OEMs

Client relationships
- Longterm development partners

Value proposition
- Enabling automated and autonomous driving
- Higher reliability of operations
- Better data quality
- Improved safety

Key resources to implement new product/service
- HR = electrical engineers, mechanical engineers
- Materials
- Process automatization

Channels

3.9 SEVA, Slovakia

The second workshop took place on April 30, 2025, at a hotel in Bratislava, Slovakia. A total of ten participants attended, although not everyone could be present at the same time due to various other commitments. Some arrived in the morning at the start, while others joined at the later stage. We used two nearly identical rooms next to each other. Ultimately, we created three personas representing the actual companies present at the workshop, along with three canvases for Electrification, Connectivity, and the Platform Economy. According to the participants, the areas of Electrification and Connectivity show the most significant potential and are also the most advanced.

Electrification

The group brainstormed new products and services for the existing company as part of the workshop. They developed the business concept of a high-energy density battery cell manufacturing that can be customized for various applications in the mobility sector. This initiative aims to create an ecosystem for talent development, reskilling, and specialized services that require R&D capabilities, including workforce and equipment for battery testing and development. Additionally, the team created a platform and database to comply with all regulatory requirements related to battery labeling and passports. This will enhance understanding of diverse regulatory standards and establish new business models focused on the collection, storage, and management of static and dynamic battery data throughout its lifecycle, including battery passports, due diligence, and data disclosure.

CANVA

<table>
<tr>
<td rowspan="2">Description new product/service
- Concentrate on high-energy density battery applications and specialized areas that require advanced batteries.
- Building the ecosystem and services for talent development and reskilling.
- Specialized services that require R&D capabilities, including workforce and equipment, such as battery testing and development.</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- Customer acquisition targeting players requiring high-energy batteries, such as selected OEMs and aviation.
- Building a strong non-government STEM education program for the battery value chain that will be recognized as an official education program for graduates and industry-driven lifelong learning.
- Acquisition of partners and customers requiring support in R&D and battery testing to cope with the new regulatory requirements.</td>
<td rowspan="2">Business strategy & KPIs of the new product/service
- Test and validate the in-house Li-ion high-energy density battery cell with two customers in target customer segments.
- Establish a formal recognized STEM education program and providing training to first 500 industry personnel.
- Establish a partnership with battery industry customers that require specialized R&D and battery testing services and support</td>
<td>Client segments
OEMs and various industry clients in broader ecosystem of the battery value chain.
Battery cell producers.</td>
</tr>
<tr>
<td>Client relationships
- Establishing long-term partnerships with key players, like OEMs, and enhancing their value proposition to customers.</td>
</tr>
<tr>
<td>Value proposition
- High-energy density battery cells with potential for further customization for a variety of applications.
- Highly skilled and experienced R&D personnel, along with advanced laboratory equipment, to provide new services.
- EduBat as a knowledge platform and network with stakeholders in STEM education programs.
- Platform and basis for the database to provide specialized services that meet the regulatory requirements.</td>
<td>Key resources to implement new product/service
- Personnel skills including advanced battery research and development, technical knowledge, and expertise in STEM-related fields.
- Battery lab equipped with full-scale equipment for advanced battery development and testing.
- In-depth understanding of diverse regulatory requirements focused on, for example, battery passport, due diligence, and data disclosure.</td>
<td>Channels
- Direct sales and B2B partnershipis.
- National and EU industry business platforms to build partnerships and aquire customers.
- Network of partners in education to leverage on their existing partnerships with the industry.</td>
</tr>
</table>

Connectivity

The group discussed the need for deploying connected and manageable EV charging points that can support the stability of the distribution grid and electricity market stakeholders, integrating EV charging services into complex electricity aggregation services and energy community systems, as well as enabling

remote smart management of the EV charging services. This would lead to the development of an IT backend system that facilitates communication between vehicles, charging points, and electricity market/distribution system operators (DSOs), and establishes partnerships with key stakeholders, including DSOs, fleet operators, charge point operators, hardware manufacturers, and others.

CANVA

<table>
<tr>
<td rowspan="2">Description new product/service
- Deployment of the connected and manageble EV charging points that can support the stability of the distribution grid and electricity market stakeholders.
- Integration of the EV charging services into the complex electricity aggregation services and into energy community system.
- Remote smart management of the EV charging services</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- Development of an IT backend system that facilitates communication between vehicles, charging points, and electricity market/distribution grid operators.
- Customer acquisition targeting EV users, initially focusing on larger corporate EV fleet operators, followed by B2C customers in the second phase.
- Establishing partnerships with key stakeholders, including Distribution Grid Operators, fleet operators, charge point operators, hardware manufacturers, and others.
- Creating a commercial value proposition for key stakeholders.
- Integration of pilot testing and offerings.</td>
<td>Business strategy & KPIs of the new product/service
- Establish pilot testing involving 1000 EVs through collaboration with key stakeholders.
- Achieve complete integration with the short-term electricity market operator's system, ensuring seamless data exchange for clearing and billing.
- Integrate IT with a minimum of one national Distribution System Operator to enhance flexibility for grid stability.</td>
<td>Client segments
- Distribution Grid Operators
- Operators of large EV fleets
- Electricity aggregators
- Various electricity market stakeholders, including power producers</td>
</tr>
<tr>
<td>Key resources to implement new product/service
- Personnel skills encompassing essential roles like IT development and integration, project management, legal support, etc.
- Comprehensive IT backend system fully integrated with key IT resources of partners.
- Complete integration of at least one partner offering aggregation services.</td>
<td>Client relationships
- Establishing long-term partnerships with key players, like electricity aggregators, and enhancing their value proposition to customers.</td>
</tr>
<tr>
<td>Value proposition
- Intelligent and digital management of EV charging infrastructure for external parties
- Overseeing connected electric vehicles and their charging sessions to create flexibility, adding value for charge point operators, EV users, Distribution Grid Operators, and other electricity market stakeholders
- Offering flexibility from a broader aggregated pool and presenting aggregated flexibility in the marketplace</td>
<td>Channels
- Developing direct sales and partnerships in B2B environments
- A national electricity market platform for marketing, selling, and clearing services
- Researching EU-wide platforms and channels to explore innovative business models in the emerging energy market</td>
</tr>
</table>

Platform Economy

The Platform Economy is currently viewed as underdeveloped, yet it holds significant potential for new business opportunities. However, overcoming public misconceptions and biases remains a critical challenge. The group addressed the importance of establishing a network of interconnections and interactions, moving away from the conventional linear supply chain model. Platforms facilitate direct connections between car manufacturers, their products, and customers, while generating substantial Big Data on vehicle usage, customer preferences, and vehicle conditions. This potential can lead to more efficient vehicle production and distribution, optimizing supply chains and lowering costs through resource and data sharing.

CANVA

<table>
<tr>
<td>Description new product/service
- Instead of the traditional linear supply chain, PE creates a network of interconnections and interactions.
- Online sales platforms, vehicle configurators, car / bike sharing / rental, platforms, integrated travel passes, entertainment systems, navigation, payment systems, insurance, maintenance, online marketplaces for spare parts and accessories, etc.</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- Integration of third-party services.
- Collaboration between different companies, e.g. OEM and IT / technology company to develop SW / autonomous driving, etc.
- Creating a commercial value proposition for key stakeholders.
- Integration of pilot testing and offerings.</td>
<td>Business strategy & KPIs of the new product/service
New business models where customers pay for mobility use (e.g. car sharing, bike rental, integrated travel passes) instead of owning a vehicle. An example could be an application that integrates different forms of transport.</td>
<td>Client segments
Every user of BEVs
- Company fleets
- Public
- Cities
- Taxi
- etc</td>
</tr>
<tr>
<td>Value proposition
- Platforms enable more direct connection between car manufacturers and their products and customers.
- Generate Big Data on vehicle usage, customer preferences and vehicle condition.
- Potential in more efficient vehicle production and distribution, optimising supply chains and reducing costs by sharing resources and data.</td>
<td>Key resources to implement new product/service
- Personnel skills encompassing essential roles like IT development and integration, project management, legal support, etc.
- Comprehensive IT backend system fully integrated with key IT resources of partners.</td>
<td>Client relationships
- online, remote, via app

Channels
- Like any other app - buy in an app stores, embedded in the car, in the travel apps ...</td>
</tr>
</table>

4. Transnational Workshop III: Transformation Scenarios

The transnational workshop was combined with the Automotive Hungary / Industry Days 2025 to engage more participants for the workshop. In total there were 27 participants, who checked and adapted the transnational scenarios and developed the CANVA on a transnational perspective, which can be found in the Appendix.

4.1 Transnational scenario Automation

By 2035, autonomous vehicle technologies have advanced significantly through collaborative efforts and practical experience based on testing areas. Several European suppliers and manufacturers produce autonomous vehicles, with dedicated testing areas in various environments. Universities and research entities support the development of engineers and specialists, focusing on AI, vision techniques, data analytics, decision-making processes, cybersecurity, data transfer and processor development.
Despite challenges in digital infrastructure and regulatory hurdles, fully automated driving gains importance, with high social acceptance and technological advancements driving progress. Mobility data plays a crucial role, and the monopolisation of data has become a new obstacle to innovation. Probably Europe will have to face challenges in processor development and AI as main technology progress is taking place in USA and China. Anyhow, users are willingly sharing information to enhance vehicle connectivity and safety. Pilot projects help increase acceptance and stakeholder engagement, while regulations are gradually eased.
The development of autonomous driving faces slow progress in some areas due to weak infrastructure and low acceptance. However, pilot projects and research initiatives focus on safety and reliability, with companies exploring innovative solutions and smart materials for competitive advantage. We should expect technology shifts that might change the paradigms, for instance the development of humanoid robots that could take over the role of drivers and interact with the "autonomous car".
USA will remain in the position as innovator and Europe will be a follower, first observing pilots in USA.

This transnational scenario faces several risks, such as the technology dominance of the USA and China and the lack of compliance between legal frameworks of the European countries. Also new security standards such as TISAX can block cooperation in test beds. Nevertheless, the goal to have a wide-spread implementation of autonomous vehicles with a functioning legal framework and standards can be reached by exploitation of the regional success factors, such as qualified workforce or a factory for processor production in the EU. Drivers for the scenario will also be the standardisation of data gathering and processing as well as the drivers shortage in public transportation and logistics.

4.2 Transnational scenario Connectivity

By 2035, connected vehicle technologies have advanced significantly through collaborative efforts. Testing grounds for connected vehicles leverage 5G infrastructure and IoT, with local services provided via major platforms. Safe data handling and AI solutions are developed, supporting the integration of connected vehicles. Challenges in digital infrastructure and fragmented markets hinder large-scale innovation, but pilot projects and exemptions drive acceptance and stakeholder engagement. Regulations are gradually eased to allow test drives, and strict data security measures build public trust, accelerating adoption.
Despite slow progress in some areas due to weak infrastructure, AI and predictive technologies are used in traffic control and industry projects. Remote services and over-the-air updates become standard, enabling real-time updates for software, safety features, and entertainment systems. Proactive maintenance reduces vehicle downtime and road accidents.

The transnational scenario on Connectivity identifies major key stakeholders such as cities, OEMs and IT companies – and highlights risks related to privacy, data security, big data management and legal data.
Key drivers include the topic of resource management, but also cities, IT companies, and OEMs. Nevertheless, the goal of achieving frequency measurement of cars, traffic optimization, and improvements in car sharing can be reached through success factors such as EU harmonization, EU standards, and defined C-ITS (Cooperative Intelligent Transport Systems). Technological focus areas include the EU IT infrastructure, sensors, open data, supercomputer and IT hardware. Future business models are expected to revolve around the city tourism system, digital traffic twins, and sensor system integration. The development requires interdisciplinary teams, ethical data practices, and a culture of open mindset for change.

4.3 Transnational scenario Electrification

By 2035, regions collaborate to advance electric vehicle (EV) adoption and infrastructure development. Multiple regions host EV production plants and a network of suppliers, ensuring a robust supply chain. To provide scale and cost efficiency there will be a standardization of vehicle platforms enabling the production of multiple vehicle models on one line. Universities and schools support workforce development in green energy and sustainable practices.
Comprehensive charging infrastructure is established across public and private spaces, with government support ensuring connectivity even in rural areas. Fast-charging stations and private charging boxes become common, enabling efficient long-distance travel and accessible home charging.
The market sees BEVs dominate, with a severe pricing competition driving innovation and affordability. Last-mile and touristic regions favor BEVs, while long-distance transport continues to rely on combustion engines. Companies and public transport fleets increasingly use renewable energy sources.
Government incentives and regulations support the expansion of charging infrastructure and renewable energy use. Despite challenges, such as uneven distribution of charging points and technical glitches, regions become models for sustainable electric mobility. Anyhow hybrid and hydrogen vehicles will still take up a noticeable space in Europe.

For the transnational Electrification scenario, there are several key stakeholders, such as end customers, governments (especially regarding subsidies), grid operators, and OEMs expected to provide affordable battery electric vehicles (BEVs). Major risks include increasing competition from China, dependency on public funding, high labor costs in the EU and overregulation related to CO_2 targets. The transition is driven, for example, by the electricity infrastructure for fast charging, rare earth materials (resources), investments in smart grids, as well as public transport with European e-mobility and electric car-sharing models. To achieve the goal of sustainable cities and environmental protection, success factors such as a plan for the electrification of public transport are necessary. Business models involve joint ventures with Chinese companies, fair competition, and the valorisation of research results. The economic environment is shaped by volatility, uncertainty, complexity, and ambiguity (VUCA), along with non-harmonized labor laws. Technological focus areas include AI, cybersecurity, high-power electronics, semiconductor and hydrogen technologies, vehicle-to-grid systems, and recycling. Successful implementation requires investment in research and development, cooperation with China, attracting foreign investors, corporate start-up collaboration and fostering European cooperation - such as through the Drive2Transform project.

4.4 Transnational scenario Platform Economy

By 2035, Mobility as a Service (MaaS) has advanced significantly through collaborative efforts. MaaS development combines private car transport with public transportation, using a single travel document across all carriers. Challenges include the culture of car ownership, building trust in car sharing, and the need for IT skills, especially among the older generation.
Separate MaaS platforms for each country ensure smooth transitions between the individual modes of transport, with real-time data, seamless planning, and payment. Trends include a shift away from private cars due to sustainability goals, increased costs of private transport, and a rise in cycling and public transport use. New business models emerge, with suppliers becoming system providers.
MaaS is seen as complex for mainstream customers, leading to slow adoption. Revitalizing personal vehicles through OEMs' smart product policies (add-on services, banking, leasing) is more accepted. Clear regulations, strong data privacy, and effective analytics drive growth and trust in platform-based mobility systems.
The sharing economy and B2C orientation are key factors, with a trend shifting away from private car ownership toward shared mobility. Each city and country develops its own MaaS platforms, prioritizing local transportation options. Despite decentralization, cities and regions collaborate for seamless connectivity. Regulation, data protection, and analytics are crucial, though uncertainties delay widespread implementation.
Some regions see little potential for platform economy service development due to regulatory and insurance issues, and strong taxi lobbying. Local MaaS platforms may develop through EU pilot projects, with a rise in OEM-based MaaS platforms for last-mile mobility.

The transnational Platform Economy scenario is focusing on key stakeholders, such as cities, citizens, agglomerates, companies and car owners. Implementation faces several risks, such as preferences for private car ownership, concerns about data privacy, insurance issues for shared vehicles and the unwillingness to share with unknown people. Despite these obstacles, several factors are driving progress – these include the growing relevance of shared economy, urban mobility and the overcrowded cities. They aim to reduce air pollution and traffic jams, as well as improve accessibility for all. To achieve the goals, success factors such as standardization and regulation (without being restrictive) are necessary. Furthermore, successful pilot projects and use cases are important. New business models are emerging, with platform providers becoming suppliers, new opportunities arising for software start-ups, companies offering incentives to share rides, and larger complexes providing car-as-a-service options for vulnerable groups, among others. In general, this will lead to disruptive business models. Technological priorities include IoT, blockchain, databases, battery tracking, and platform maintenance. Required skills include cybersecurity, data science, MaaS for urban planning, and flexibility.

5. Conclusion

Deliverable D1.2.2 marks a significant milestone in the Drive2Transform project by presenting a comprehensive set of regional and transnational transformation scenarios that explore the future of the automotive industry in Central Europe. Developed through a participatory and evidence-based process, these scenarios reflect the diverse realities, ambitions, and innovation capacities of the project's partner regions while addressing the shared challenges posed by Electrification, Connectivity, Automation, and Platform Economy.

The scenario-building process has not only generated valuable foresight for strategic planning but has also fostered cross-sectoral dialogue and mutual learning among stakeholders. By integrating regional insights with transnational perspectives, the deliverable contributes to a deeper understanding of how transformation trends may unfold and what actions are needed to shape them proactively.

These scenarios serve as a foundation for further project activities, including the development of Use Cases (A3.2) and Best-Practices, policy recommendations, and capacity-building measures. They also provide a practical tool for companies—especially SMEs—and public authorities to anticipate change, align their strategies, and collaborate more effectively within and across regions.

Ultimately, D1.2.2 supports the overarching goal of establishing a Transnational Automotive Open Transformation Platform by offering a shared vision of the future and a structured approach to navigating uncertainty. It empowers stakeholders to move from awareness to action, ensuring that Central Europe remains a competitive, sustainable, and resilient hub for automotive innovation.

Appendix

Appendix 1: Scenario CANVAs of the First Workshop per Partner

#1: CML, Bavaria, Germany

Szenario Description (Electrification)								
For electrification, the most important factors are the charging infrastructure expansion, government incentives and regulations, sector coupling in the energy transition, and drivetrain electrification. We expect private charging stations to dominate, with moderate incentives supporting gradual change amid policy uncertainties. While renewable energy use will grow, progress will be driven by individuals and pilot projects. Battery-electric vehicles are seen as a niche and transitional solution, whereas hybrid and hydrogen technologies are considered more sustainable.								
Key Stakeholder	Risks	Drivers	Goals / Effects	Regional Sucess Factors	Markets / Business Models	Eceonomic Context	Technologies	Skills
Municipal utilities Grid operators OEMs (Original Equipment Manufacturers) Politics Political stakeholders	War Geopolitical conflicts Political development Resource scarcity Costs Availability / Dependency Reduction	CO_2 pricing CO_2 X-as-a-Service Future technology Leasing for everyone Facilitating market access	Value creation through digitalization Steering consumer behavior via CO_2 pricing Stable society / infrastructure	Bürokratieabbau Mut zur Veränderung stabile Gesellschaft Zusammenarbeit	Sharing economy Mobility usage flat rates	EU policy Infrastructure Renewable energy Scalability vs. Protectionism	Energy & storage How long is it reliable? Knowledge / Skilled workforce	Digital competence HR in schools / Further development

Figure 1: Canvas 1B, 2B, 4B Electrification

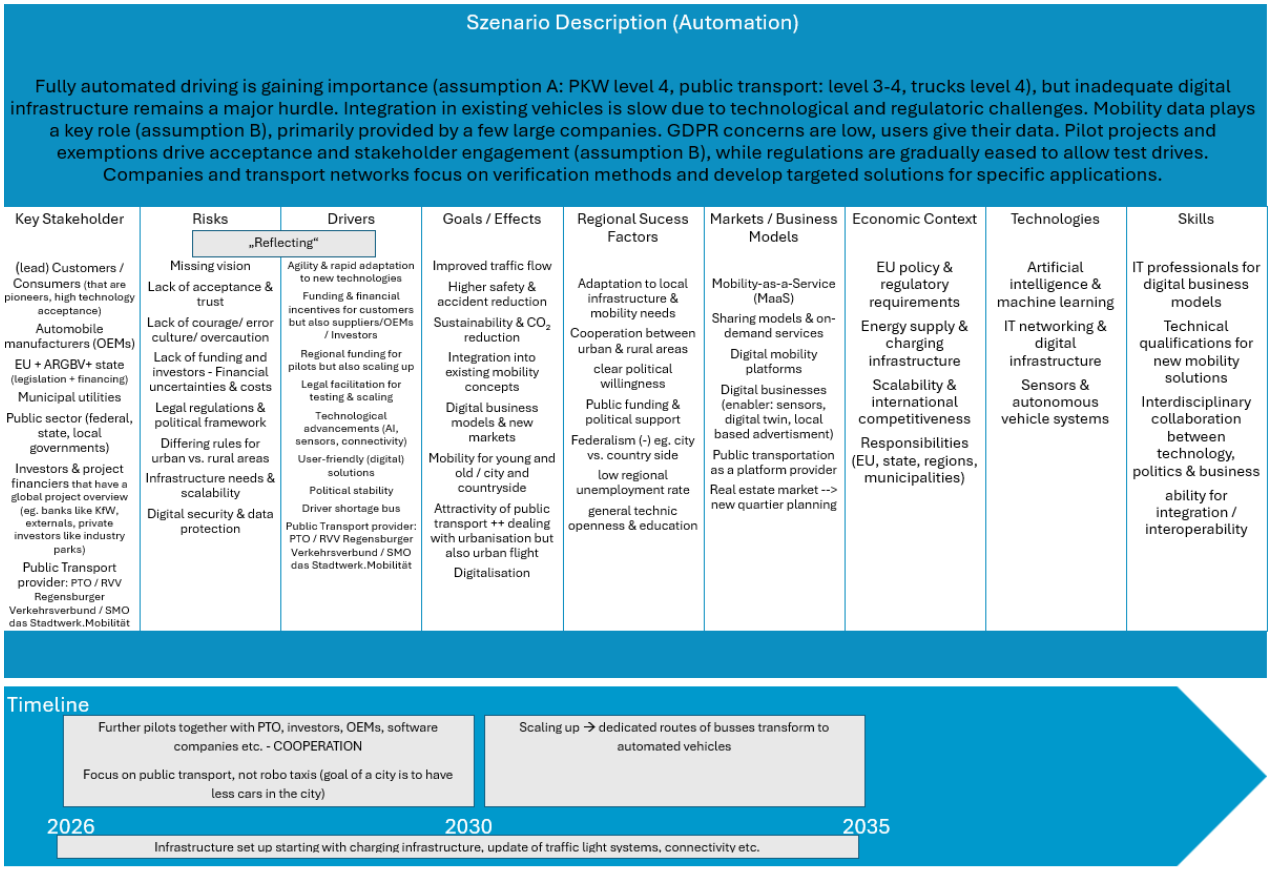


Figure 2: Canvas 1AB 2B 3B Autonomous Driving

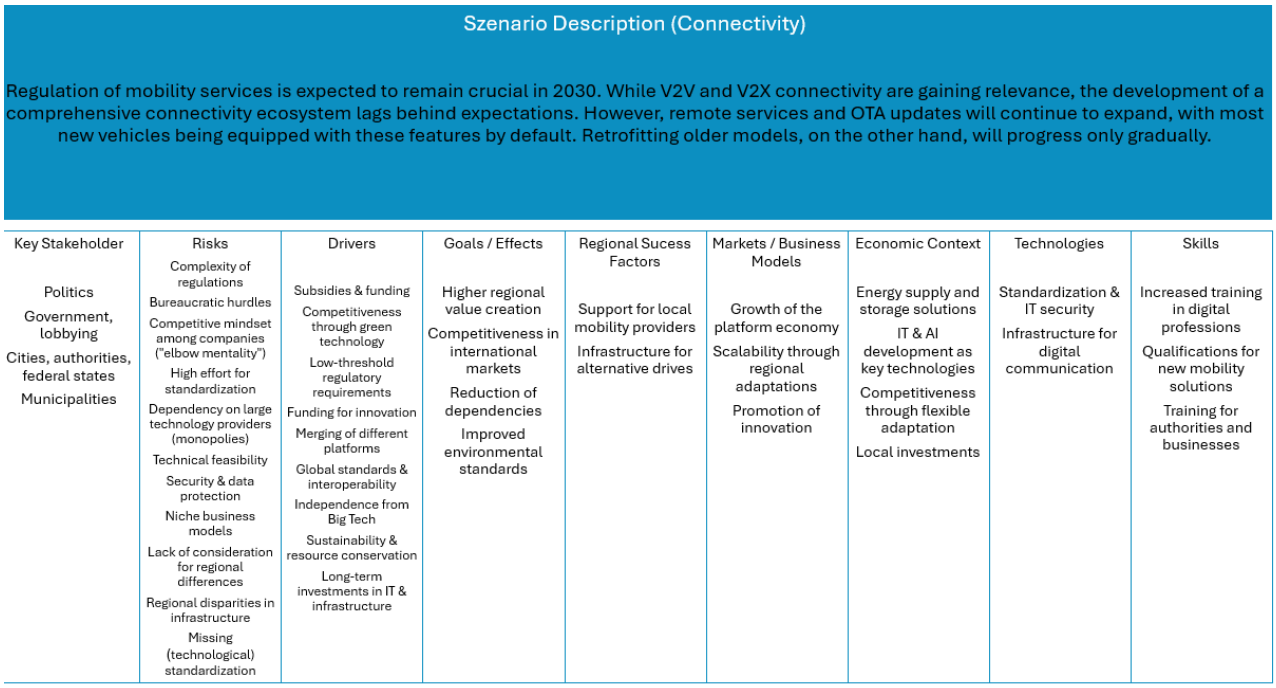


Figure 3: Canvas 1B, 3C, 4B Connectivity

Szenario Description (Platform Economy)								
In the platform economy, the sharing economy and B2C orientation are key factors. The trend is shifting away from private car ownership toward shared mobility, driven by decreasing costs and sustainability goals. Each city and European country is expected to develop its own MaaS platforms, prioritizing local transportation options. Despite this decentralization, cities and regions collaborate to ensure seamless connectivity. Regulation, data protection, and analytics play a crucial role: while regulatory clarity and strong data protection support growth, uncertainties and concerns continue to delay widespread implementation.								
Key Stakeholder	Risks	Drivers	Goals / Effects	Regional Sucess Factors	Markets / Business Models	Economic Context	Technologies	Skills
Municipality, City Municipal Utilities Current Big Players in the Digital Economy Authorities in Germany & the EU	Rules Regulation fatigue Consumer trust Demographic inclusion Monopoly structures	Digital infrastructures AI + automation Trend away from ownership towards access (in general) Urbanization User experience Cost pressure drives platform development	Fewer private cars More open space Livable cities (Paris/Barcelona) Creating framework conditions A one-app solution is desirable	Collaboration between authorities and administration is essential Willingness and ability of stakeholders to invest Openness of all stakeholders	Opportunity for peripheral service providers Analysis and evaluation Banks Strong growth in leasing	Data protection Energy prices Regional rental prices (higher in cities than in rural areas)	AI + Big Data Learning Digital Twin (Hardware + Software)	More focus on IT Greater customer orientation in the public sector Enable through extensive communication & societal acceptance → Engage society Coding

Figure 4: Canvas 1AB 2B Platform Economy

#2: Biz-Up, Austria

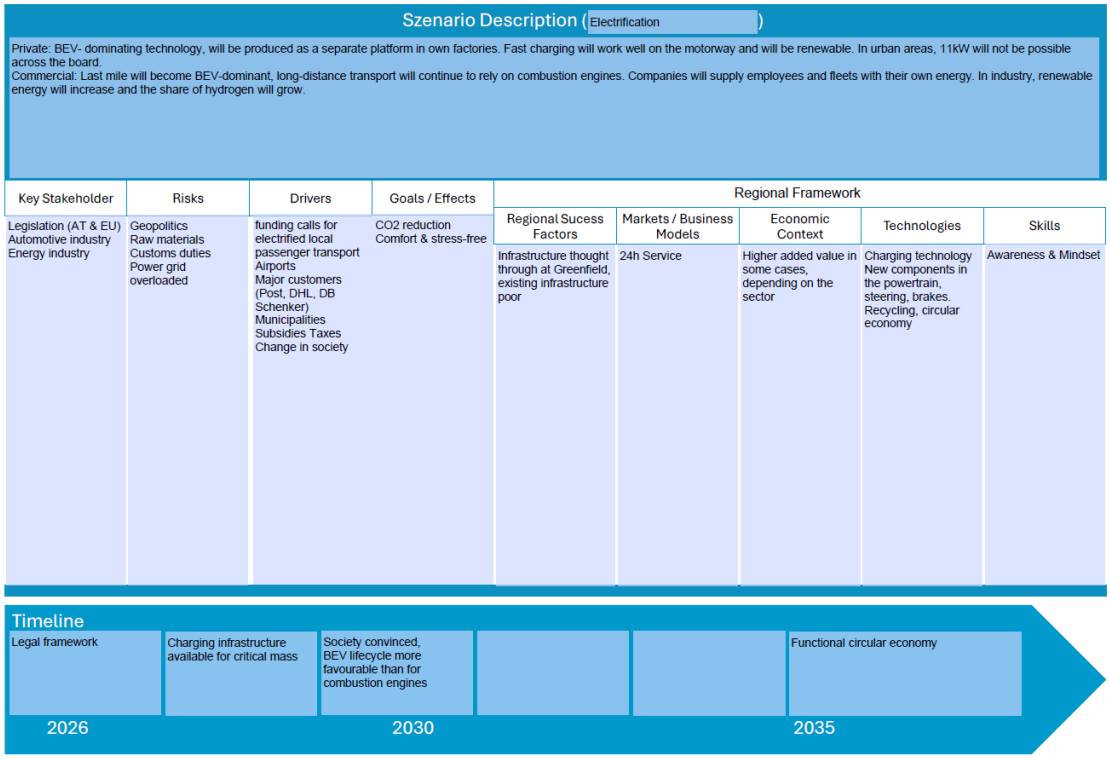


Figure 5: CANVA Electrification

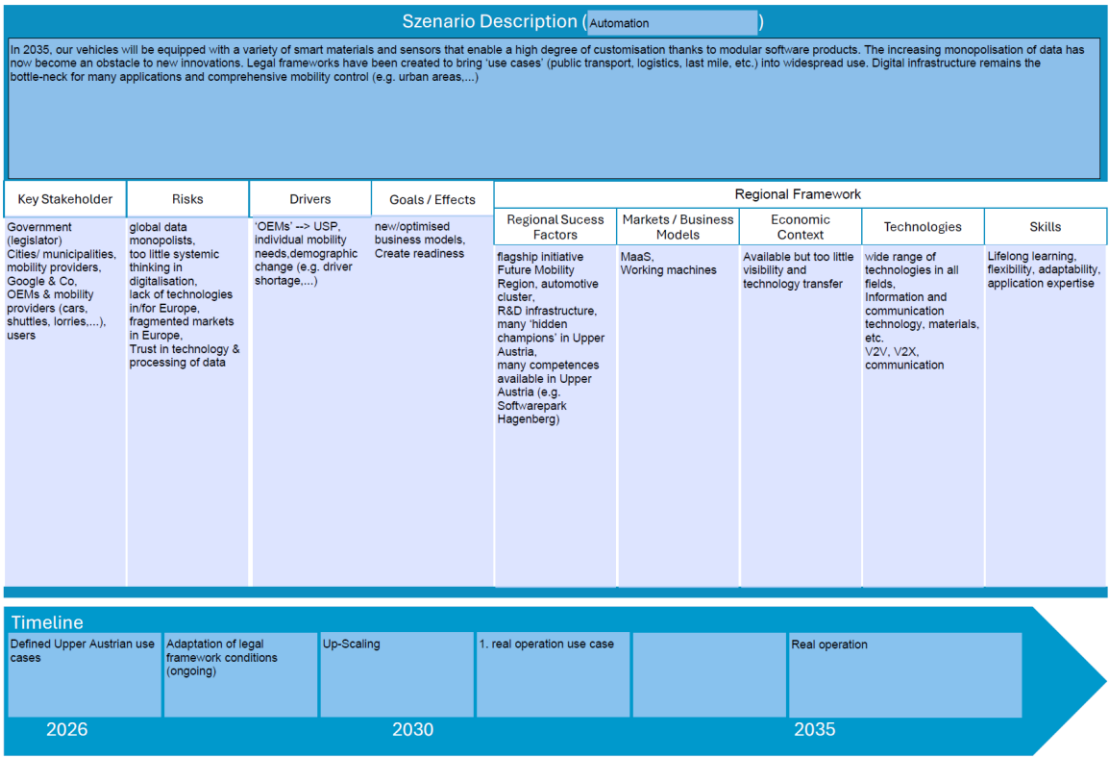


Figure 6: CANVA Automation

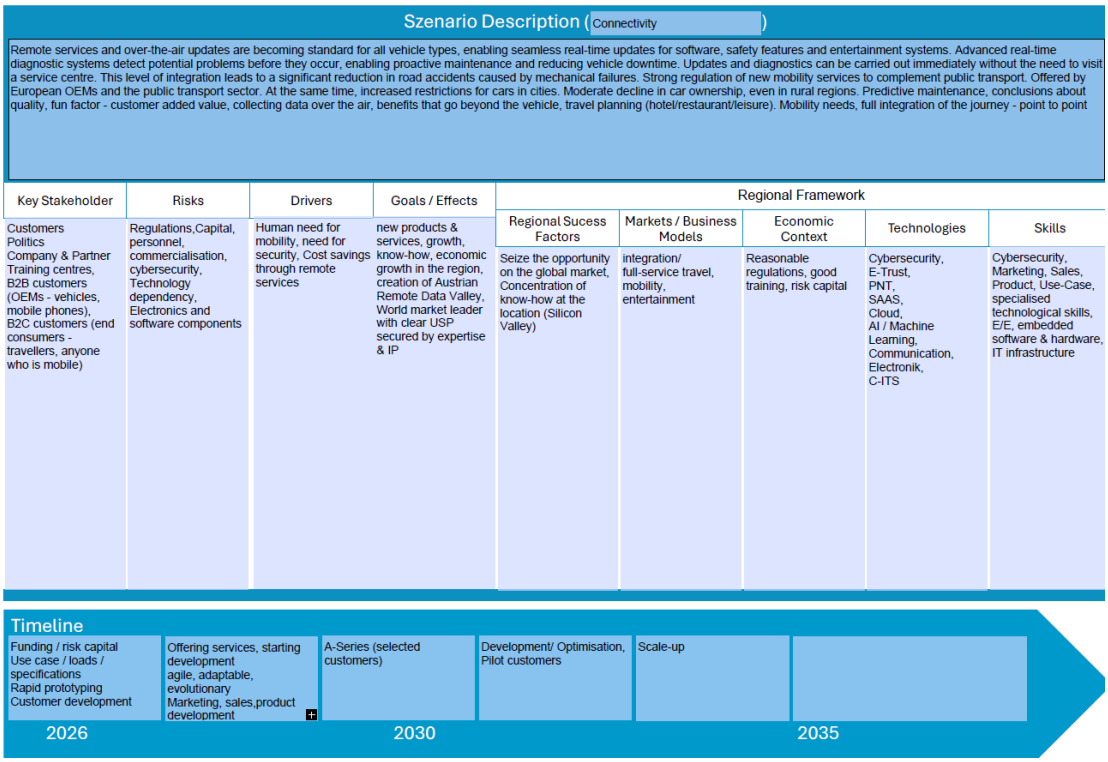


Figure 7: Connectivity

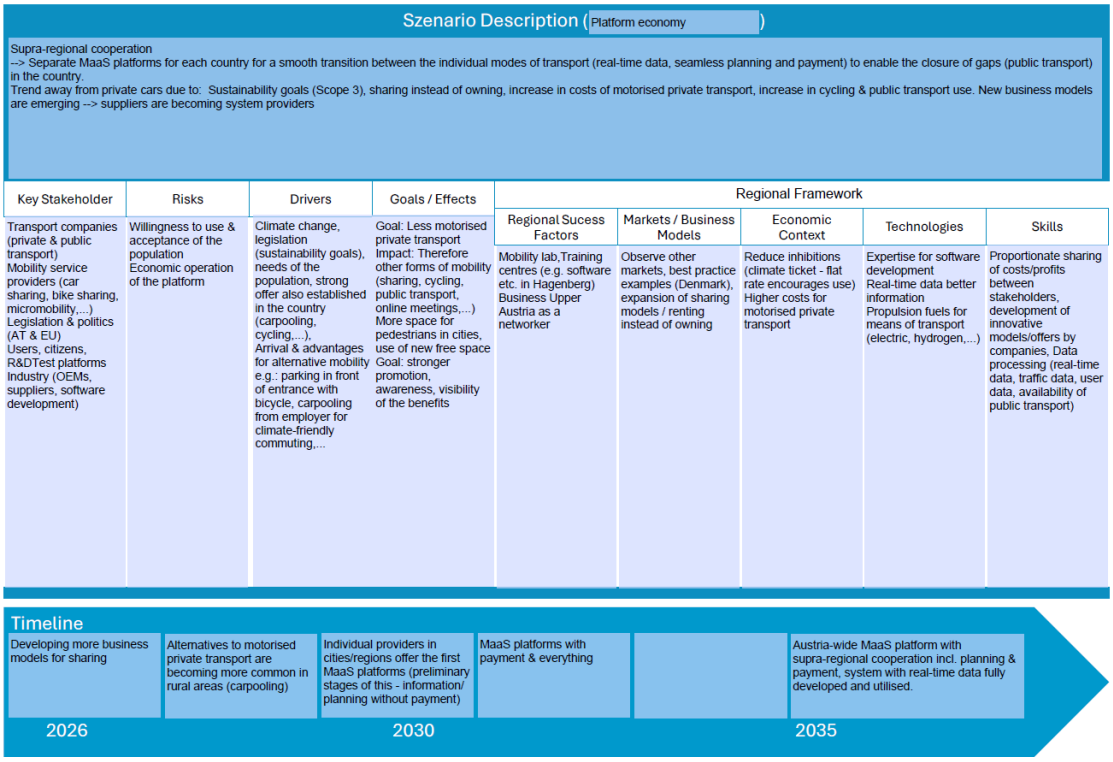


Figure 8: CANVA Plattform Economy

#3: RDA Pilsen, Czech Republik

Szenario Description (Platform Economy)

Mobility as a Service (MaaS) - development in the largest city of the Pilsen region in Pilsen as an isolated solution combined with private car transport. Other cities in the region have public transportation that includes bus services only. Public transport in the Pilsen Region is provided by regional trains and regional bus lines. Integrated transport of the Pilsen Region allows the use of a single travel document that works between all involved carriers.

Risks and blocking points for further extensions:
Culture of ownership: Car ownership is seen as a symbol of status and independence in the Czech Republic. The transition to car sharing requires a change in this mindset, which will be difficult given the communist history of prohibitions and restrictions to which citizens are still sensitive.
Building trust: Many people are not sufficiently informed about the benefits and possibilities of car sharing, including financial savings and environmental benefits.
IT skills: Car sharing by default requires the use of apps and digital platforms, which is not acceptable especially for the older generation.

Key Stakeholder	Risks	Drivers	Goals / Effects	Regional Framework				
				Regional Sucess Factors	Markets / Business Models	Economic Context	Technologies	Skills
politicians, government, municipalities, infrastructure providers, public (acceptance), Tier 1 to 3 suppliers and their supply chains, only one micro-sized OEM enterprise, technology providers, BSOs	lack of company data, low public acceptance, missing infrastructure, lack of motivation of employees to make the necessary change in expertise, lack of flexibility of the education system, lack of scientific knowledge, lack of networking	missing OEM in the region, more and successful pilot-projects, possibility to test on the test loop, within the region we can only deal with SMEs, involvement of municipalities in the transformation process, no specific subsidy programs	alleviating the financial strain on businesses throughout the transformation phase, defining a regional transformation strategy	testing facitilities, R&D, university facilities	regional political support, employment development (companies - secondary schools, universities) flexibly	Alleviating the financial strain on businesses throughout the transformation phase.	sharing test circuit, Infrastructure, grant projects, knowledge-based economy	startup incubation, improvement of the specific offer of companies in the region, better understanding of company needs (technology, specialized employees, etc.)

Timeline

2026		2030			2035
clear and realistic EU objectives grants to support the sector awareness campaign		Change in mindset – share, not own is started in certain areas and groups	Mobility as a Service (MaaS) development of isolated solution in major cities in the region	Mobility as a Service (MaaS) development of interconnected solutions between large cities	Increase in the use of environmentally friendly vehicles

Figure 9: CANVA Plattform Economy

#4: PU, Baden-Württemberg, Germany

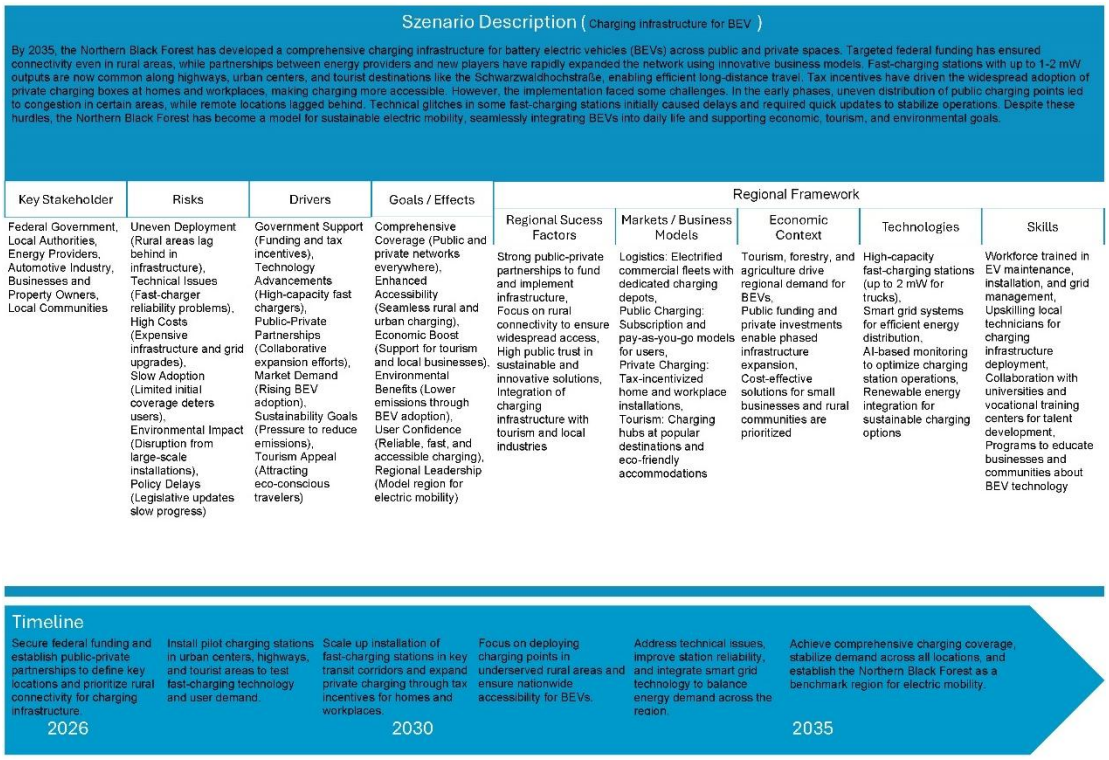


Figure 10: Canva 2A Electrification

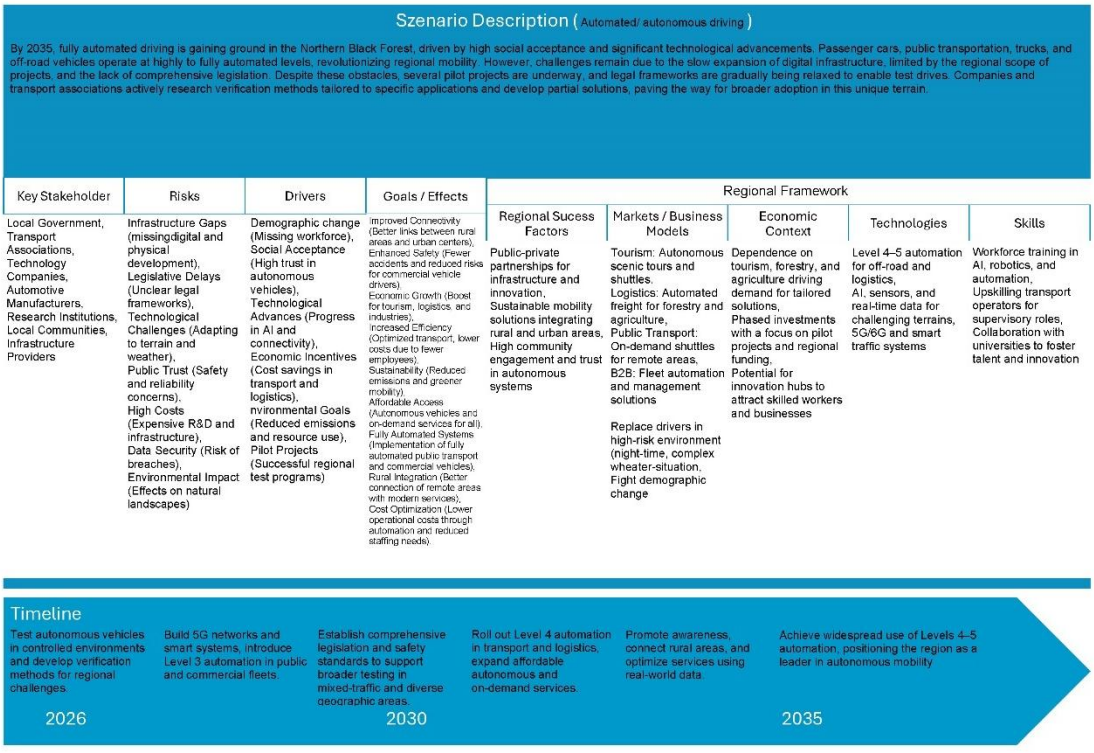


Figure 111: Canva 1A Automated/autonomous driving

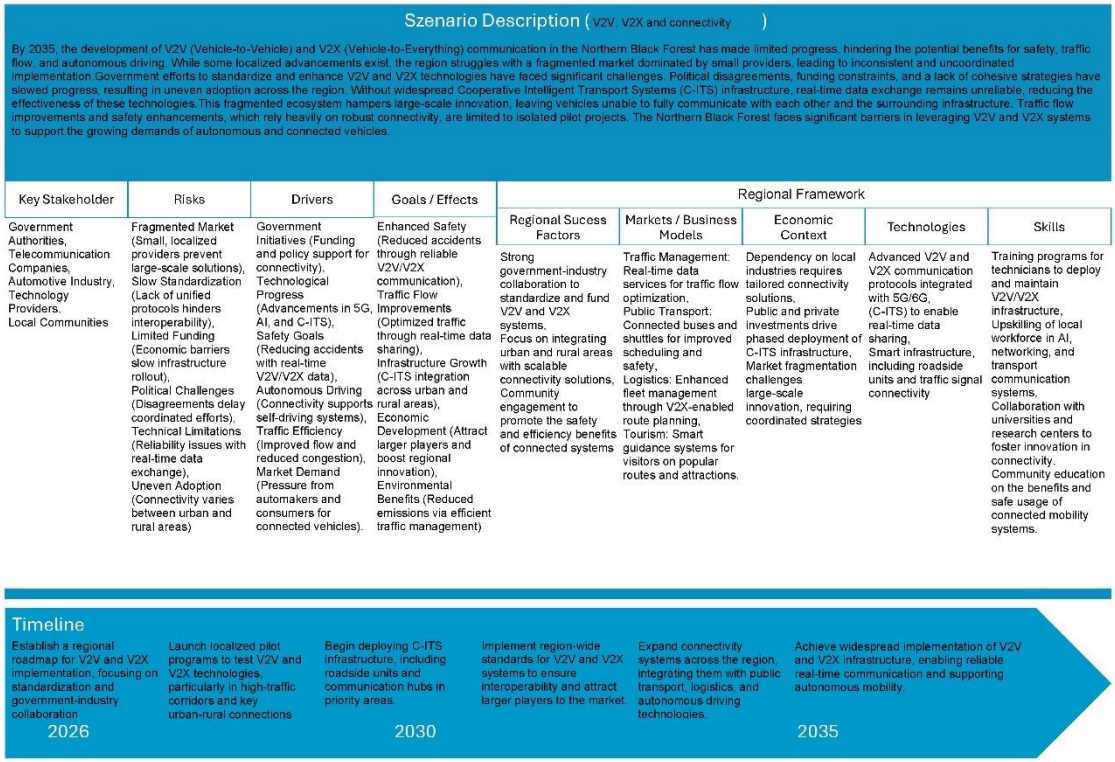


Figure 12: Canva 3C Connectivity

#5: PBN, Hungary

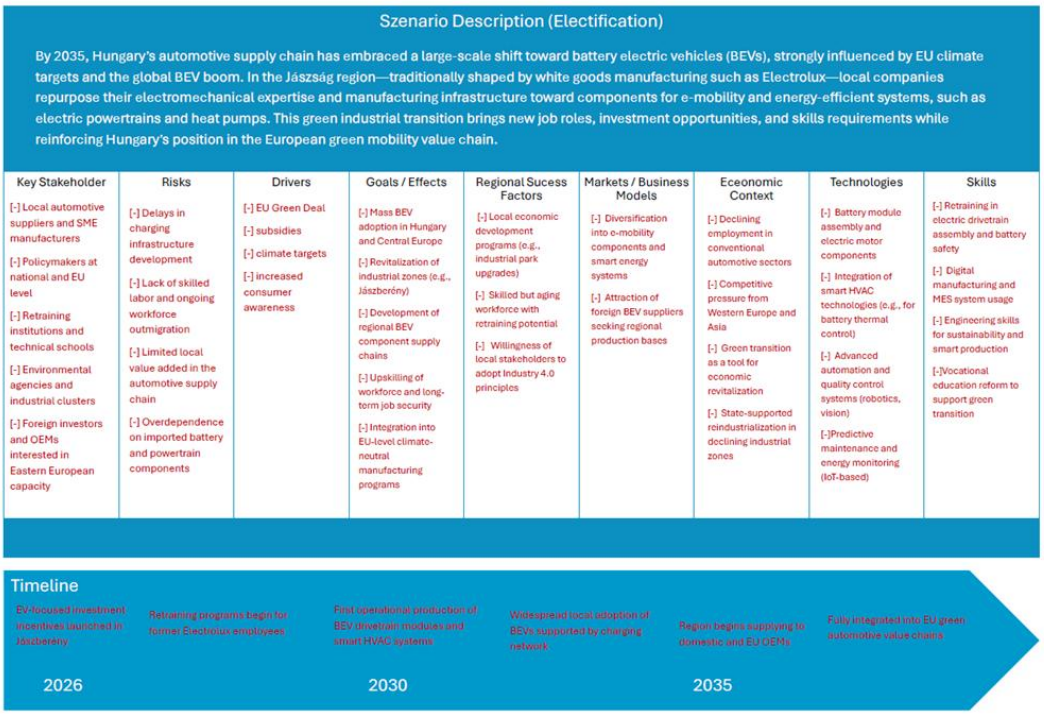


Figure 13: Canva 1A - Electrification

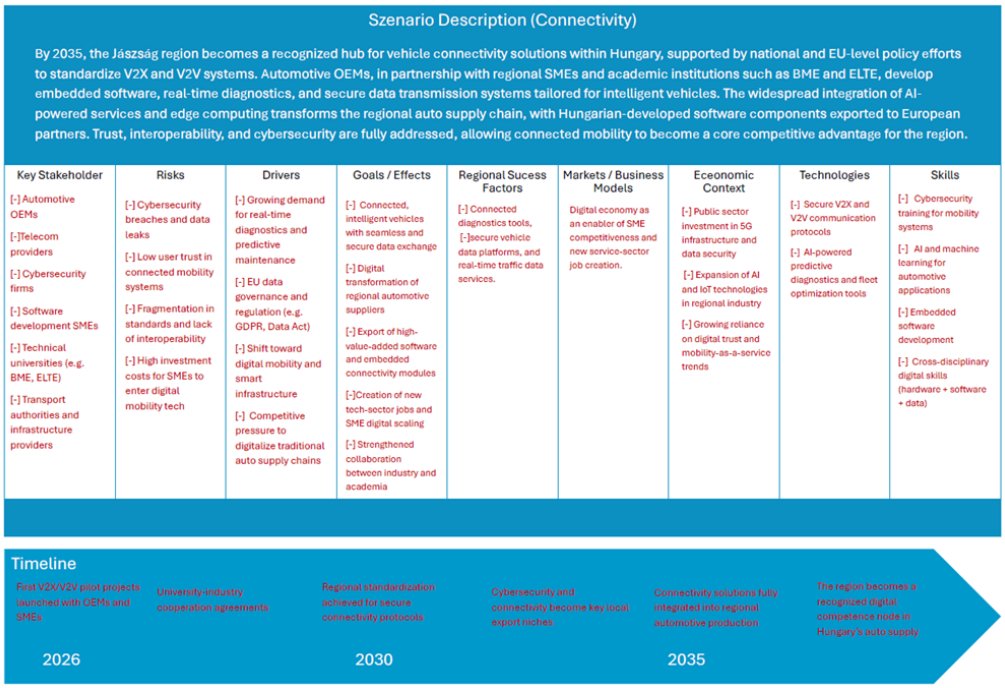


Figure 14: Canva 3A - Connectivity

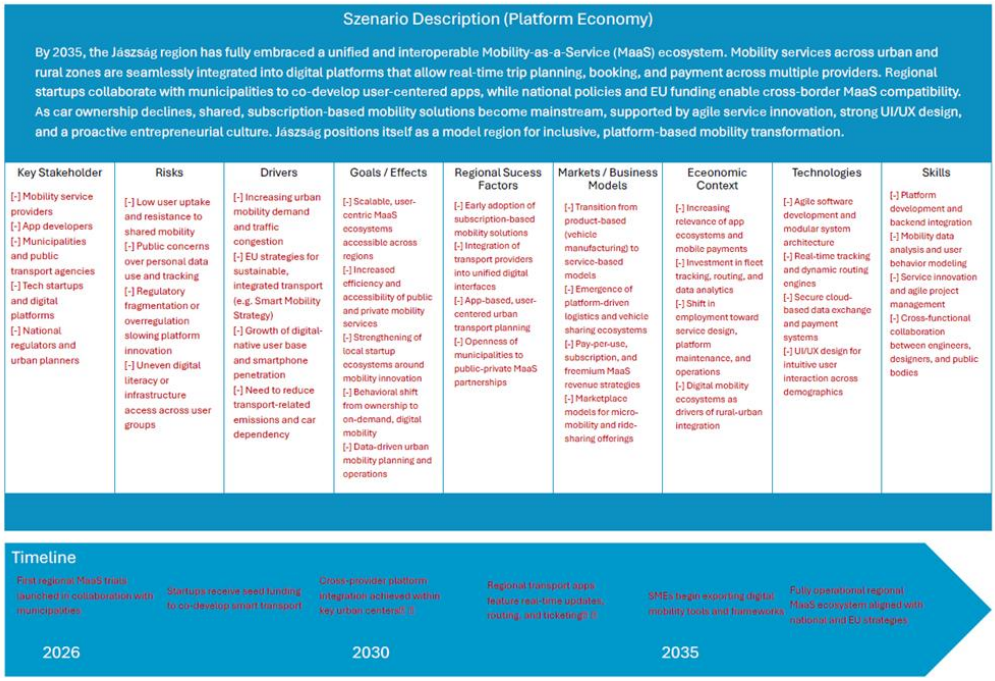


Figure 15: Canva 2A - Platform Economy

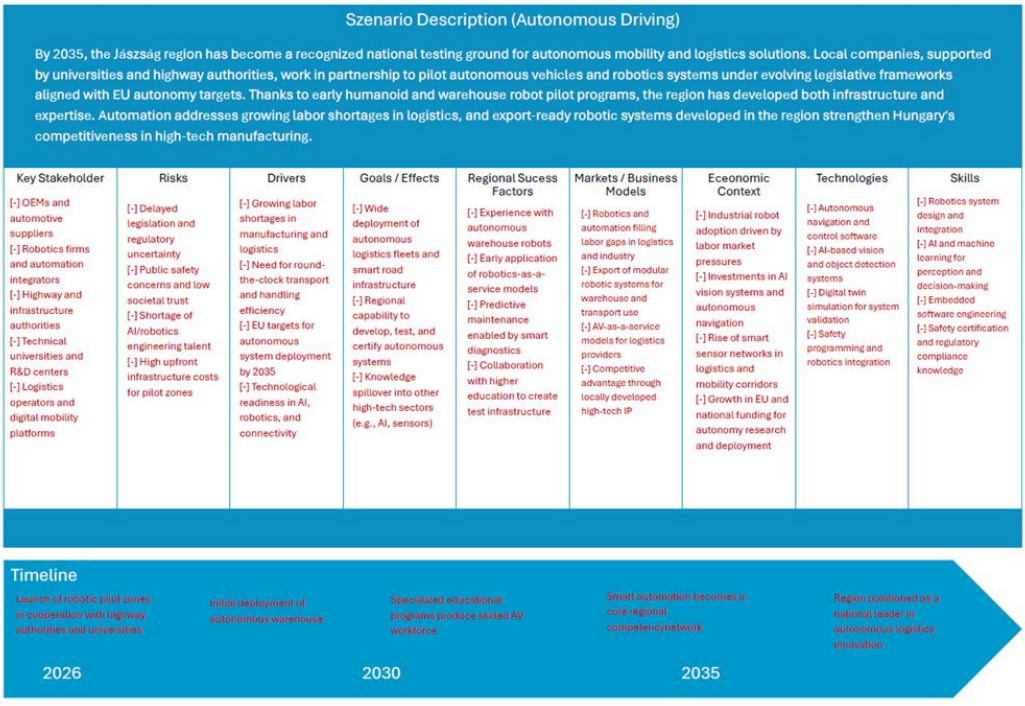


Figure 16: Canva 2A - Autonomous Driving

#6: NOI, Italy

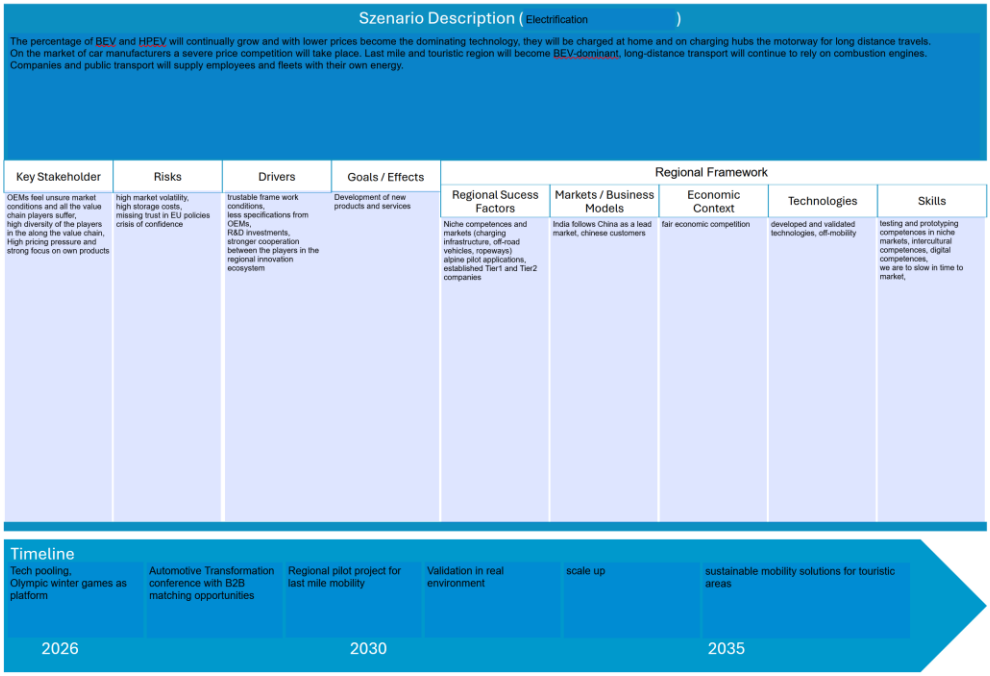


Figure 17: CANVA Electrification

#7: KSSE, Poland

scenario for electric vehicles

Two/three electric vehicle production plants and several hundred suppliers of components and systems for electric vehicles. Access to green energy, use of recovered materials, low-emission production, sustainable means of transporting. Universities and research entities provide engineers and specialists and provide research and development support in solving technical challenges. Secondary and higher technical schools and educational centres support the development of competences of employees in the automotive industry. The SA&AM area has an extensive infrastructure for charging electric vehicles. Residents have become convinced of electric vehicles, but these are mostly post-lease vehicles from the Western Europe and vehicles of Chinese brands. Retrofitting companies, i.e. converting vehicles with traditional fuels to electric vehicles.

Markets / Business Models	Economic context	Technologies	Skills
Cooperation of suppliers supplying components to vehicle manufacturers in Western Europe in the field of joint rail logistics to reduce the carbon footprint in logistics Collaboration between suppliers of components and systems for electric vehicles and suppliers of production technologies to achieve cost efficiency through process automation and digitalization Contract Manufacturing Partnerships: Collaboration with vehicle manufacturers to leverage existing manufacturing facilities and industrial parks to implement production projects for selected vehicle models MaaS Platform in metropoles (Upper Silesian-Zagłębie Metropolis, Kraków Metropolis): A system of short-term rental of electric vehicles, promoting the use of electric vehicles without the obligation to own them.	High investment outlays related to the renovation of infrastructure Expenditures on employee training: knowledge, technical skills related to the use of new production technologies Automation of production processes to increase productivity	Drive system components Battery system components Interior elements External elements Chassis and suspension components Security systems Power elements Actuators and mechanics External elements	Design and production of battery cells Electric drive system Vehicle Platform Design Materials science Production processes Failure Mode and Effect Analysis Lean Manufacturing Automation and robotics in production Safety standards Environmental and Sustainability Practices Risk management Teamwork

Figure 18: CANVA Electrification

SA&AM scenario for the autonomous vehicles

Several suppliers of components and systems in the SA&AM area, providing solutions for autonomous vehicles. Two/three manufacturers of autonomous vehicles. Separated areas for autonomous vehicles in some cities and in some industrial areas and closed areas. Production of autonomous vehicles for special and off-road operations. Universities and research entities provide engineers and specialists and provide research and development support in solving technical challenges. Secondary and higher technical schools and educational centres support the development of competences of automotive industry employees in the field of artificial intelligence, vision techniques, data analytics, decision-making processes, cybersecurity. Several areas for testing autonomous vehicles in real and controlled conditions.

Stakeholders	Risks	Drivers	Regional factors - challenges (1= weak; 5= strong)
European Commission Government Regulatory bodies Car manufacturers Providers of Mapping and Location Data Services for Autonomous Vehicles and Navigation Suppliers of autonomous driving systems, sensors and digital components for electric vehicles Suppliers of components and systems for electric vehicles and autonomous vehicles Consumers and end users Institutional service providers Insurance companies Logistics and fleet companies Research institutions Higher education institutions Secondary schools	Political and regulatory uncertainty Economic crisis, financial market crisis Excess production capacity of European corporations amidst strong price competition from Chinese producers Security and reliability concerns High costs of developing autonomous vehicle technology Infrastructure constraints for autonomous vehicles Cybersecurity Threats Legal and ethical uncertainty regarding liability for autonomous vehicle errors and accidents Insurance cost Risk of rapid depreciation of the vehicle	Government support for autonomous vehicle R&D and demonstration projects Legal regulations enabling safe testing of autonomous vehicles in urban areas Technological advances in artificial intelligence, machine learning and sensor technology Consumers' expectations for comfortable travel in vehicles equipped with driver assistance systems Strategic alliances between vehicle manufacturers and technology companies Partnerships between vehicle manufacturers and MaaS platform operators Investments in digital infrastructure, including the expansion of the 5G network and smart city initiatives	Government policies and incentives (1) Infrastructure and supply chain (3) Access to raw materials (4) Skilled Workforce and Education (4) Research and Innovation Ecosystem (4), Technology Hubs (1) Proximity to OEMs and Markets (2) Supplier Ecosystem and Collaboration (4) Business Environment (regulatory framework, business-friendly procedures) (3) Sustainability service suppliers: suppliers related to sustainable manufacturing practices, including solutions for waste reduction, energy efficiency, and carbon footprint reduction (4) Political Stability (2) and Risk Mitigation (1)

Figure 19: CANVA Automation 1/3

SA&AM scenario for the autonomous vehicles Several suppliers of components and systems in the SA&AM area, providing solutions for autonomous vehicles. Two/three manufacturers of autonomous vehicles. Separated areas for autonomous vehicles in some cities and in some industrial areas and closed areas. Production of autonomous vehicles for special and off-road operations. Universities and research entities provide engineers and specialists and provide research and development support in solving technical challenges. Secondary and higher technical schools and educational centres support the development of competences of automotive industry employees in the field of artificial intelligence, vision techniques, data analytics, decision-making processes, cybersecurity. Several areas for testing autonomous vehicles in real and controlled conditions.			
Markets / Business Models Public-private partnership to develop infrastructure for autonomous vehicles, including smart roads, dedicated lanes and advanced traffic management systems. A data ecosystem where autonomous and connected vehicles generate data that can be used for a variety of services, including predictive maintenance, traffic management and urban planning.	**Economic context** Expenditures on employee training: knowledge, technical skills related to the use of new production technologies Investments in technologies supporting the ability to efficiently implement new products	**Technologies** Control Systems: Vehicle Control Units (VCU), Autonomous Driving Systems, Advanced Driver Assistance Systems (ADAS), Telematics Units, Human Machine Interface (HMI) Systems Software components: battery management software, engine control software, vehicle control software, navigation systems, over-the-air (OTA) update systems Digital components and sensors: lidar sensors, radar sensors, ultrasonic sensors, cameras, infrared sensors Control Systems: Autonomous Vehicle Control Units (AVCU), Vehicle Control Units (VCU), Electronic Control Units (ECU), Drive-by-Wire Systems, Steer-by-Wire Systems, Brake-by-Wire Systems	**Skills** Advanced sensor technology Artificial Intelligence and Machine Learning Data processing and data analytics Communications, Embedded Systems and Electronics Systems Integration Cybersecurity Project management

Figure 20: CANVA Automation 2/3

SA&AM scenario for the autonomous vehicles Several suppliers of components and systems in the SA&AM area, providing solutions for autonomous vehicles. Two/three manufacturers of autonomous vehicles. Separated areas for autonomous vehicles in some cities and in some industrial areas and closed areas. Production of autonomous vehicles for special and off-road operations. Universities and research entities provide engineers and specialists and provide research and development support in solving technical challenges. Secondary and higher technical schools and educational centres support the development of competences of automotive industry employees in the field of artificial intelligence, vision techniques, data analytics, decision-making processes, cybersecurity. Several areas for testing autonomous vehicles in real and controlled conditions.		
Goals for SA&AM Strong staff with key digital competencies A portfolio of R&D and demonstration projects supported by investment funds and public programs Autonomous driving testing space appreciated by international corporations		
Timeline		
1. Roadmap for the preparation and implementation of new university curricula related to the development of key competences among students and employees in the automotive industry 2. HR4.0 platform as a place for creating joint projects for the development of employee competences in the automotive industry 3. HR4.0 platform as a place for staff exchange between automotive sector companies when implementing new projects	1. Research and development cooperation between companies with complementary competences in projects related to autonomous driving 2. Investment funds and public programs ready to support projects related to vehicle autonomy 3. Staff with the required key competencies essential to supporting the production of solutions for autonomous vehicles is available 4. Cooperation of artificial intelligence centres and other competence centres at universities with automotive companies and technology companies in the field of space for simulation of solutions for autonomous vehicles	1. There are dedicated spaces available for testing autonomous vehicles 2. International companies use the space to test autonomous vehicles 3. International corporations are locating their investments related to the development of autonomous vehicles in the SA&AM area
Until 12.2026	**Until 12.2030**	**Until 12.2035**

Figure 21: CANVA Automation 3/3

SA&AM scenario for the connected vehicles			
The Upper Silesian-Zagłębie Metropolis and the Krakow Metropolis as areas for testing connected vehicles (5G infrastructure, IoT in the city). Services via platforms (Google, Apple, ...) will allow vehicles to connect with their surroundings without the need to interfere with vehicle infotainment. This creates opportunities for local application, service and content providers. Cooperation between local government units, service providers and cybersecurity solution providers will contribute to creating a safe space for collecting, anonymizing and processing data sets. In the SA&AM area, there are suppliers producing intelligent sensors, traffic control systems based on artificial intelligence to improve vehicle connectivity and efficiency. At universities, in cooperation with start-ups, new solutions are being created in the field of using artificial intelligence in applications supporting connected vehicles. Universities educate students and employees of companies in the field of artificial intelligence, system interoperability, secure communication and cybersecurity.			
Markets / Business Models	**Economic context**	**Technologies**	**Skills**
Public-private partnership for the development of electric vehicle charging infrastructure (wide coverage of the area with charging points). Public-private partnership to develop infrastructure for autonomous vehicles, including smart roads, dedicated lanes and advanced traffic management systems. A data ecosystem where autonomous and connected vehicles generate data that can be used for a variety of services, including predictive maintenance, traffic management and urban planning. A shared technology park where component and vehicle manufacturers can test solutions for autonomous vehicles and connected vehicles (artificial intelligence in vehicles, V2X testing, IoT).	Rising wage costs The rising costs of regulatory compliance High investment outlays related to the renovation of infrastructure Expenditures on employee training: knowledge, technical skills related to the use of new production technologies Price pressure from customers	Drive system components Battery system components Charging components Gearbox components Interior elements External elements	Software development Artificial Intelligence and Machine Learning Data processing and analytics Cybersecurity

Figure 22: CANVA Connectivity 1/2

SA&AM scenario for the connected vehicles		
The Upper Silesian-Zagłębie Metropolis and the Krakow Metropolis as areas for testing connected vehicles (5G infrastructure, IoT in the city). Services via platforms (Google, Apple, ...) will allow vehicles to connect with their surroundings without the need to interfere with vehicle infotainment. This creates opportunities for local application, service and content providers. Cooperation between local government units, service providers and cybersecurity solution providers will contribute to creating a safe space for collecting, anonymizing and processing data sets. In the SA&AM area, there are suppliers producing intelligent sensors, traffic control systems based on artificial intelligence to improve vehicle connectivity and efficiency. At universities, in cooperation with start-ups, new solutions are being created in the field of using artificial intelligence in applications supporting connected vehicles. Universities educate students and employees of companies in the field of artificial intelligence, system interoperability, secure communication and cybersecurity.		
Goals for SA&AM Developing an ecosystem of suppliers, start-ups, research institutes and universities to develop and test connected vehicle solutions Collaboration with municipalities in metropolitan areas to expand IoT infrastructure to support connected vehicle service		
Timeline		
1. Initiate cooperation with representatives of the Upper Silesian-Zagłębie Metropolis and the Kraków Metropolis in the field of IoT in public space to support the development of connected vehicle services 2. Initiate cooperation between IT companies and automotive sector companies in identifying opportunities for the development of services for connected vehicles 3. Stimulate cooperation with universities and startups in the development of applications for connected vehicles	1. Connected Vehicle Application Development Centres (Gliwice, Krakow) 2. Cooperation of local government units of the Upper Silesian-Zagłębie Metropolis and the Kraków Metropolis with IT companies in the field of secure collection, processing and generation of data 3. Universities educating students and staff in key competencies related to the development of applications for connected vehicles	1. The Upper Silesian-Zagłębie Metropolis and the Kraków Metropolis using a common data space on the basis of which economic entities create new services for connected vehicles 2. Vehicles manufactured in the SA&AM area equipped with solutions ensuring intuitive connection of the vehicle with its surroundings
Until 12.2026	**Until 12.2030**	**Until 12.2035**

Figure 23: CANVA Connectivity 2/2

#8: CCIS, Slovenia

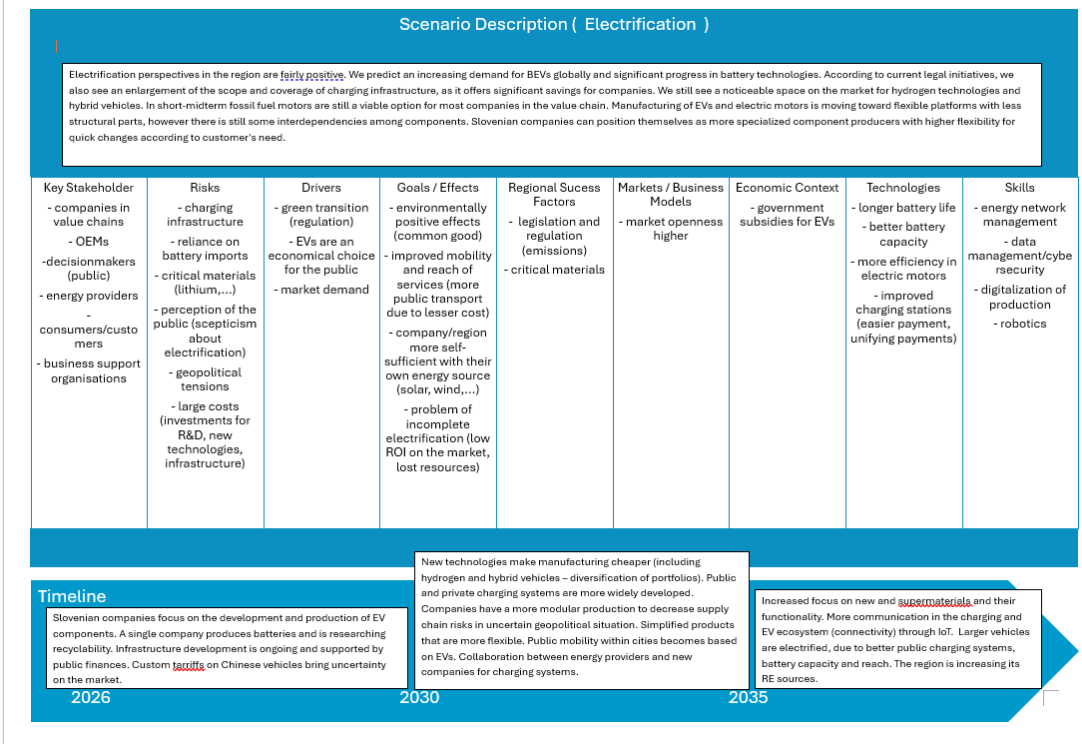


Figure 24: CANVA Electrification

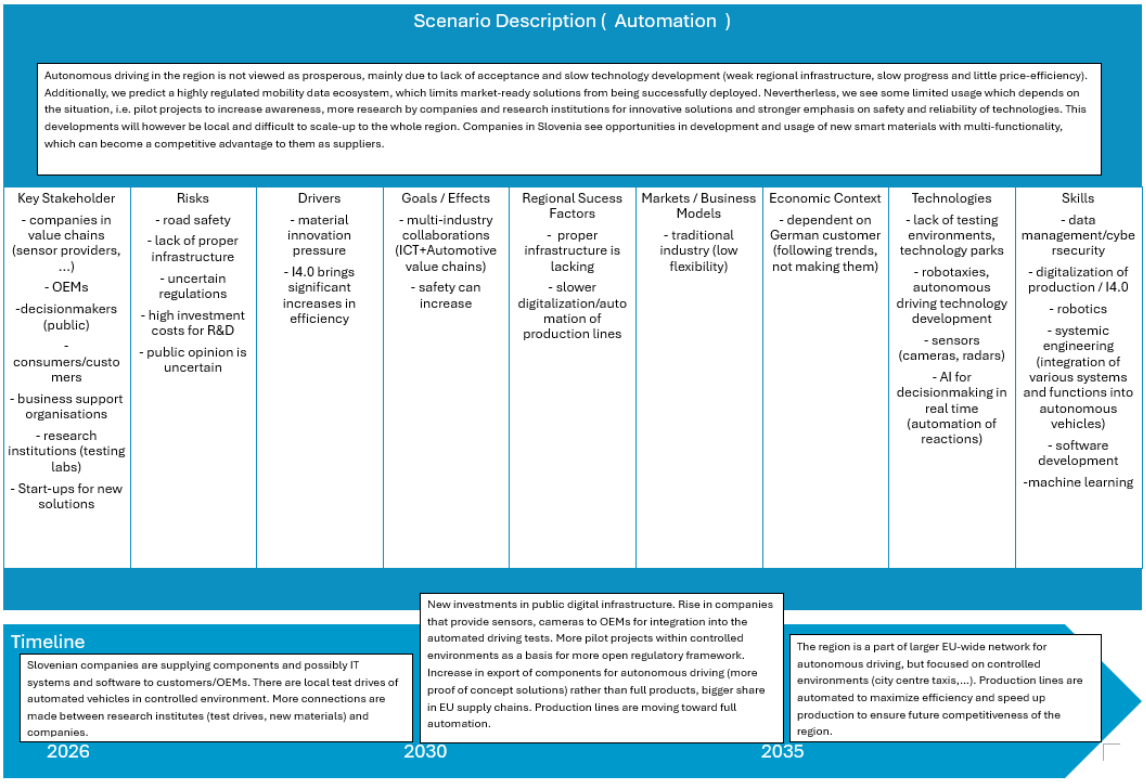


Figure 25: CANVA Automation

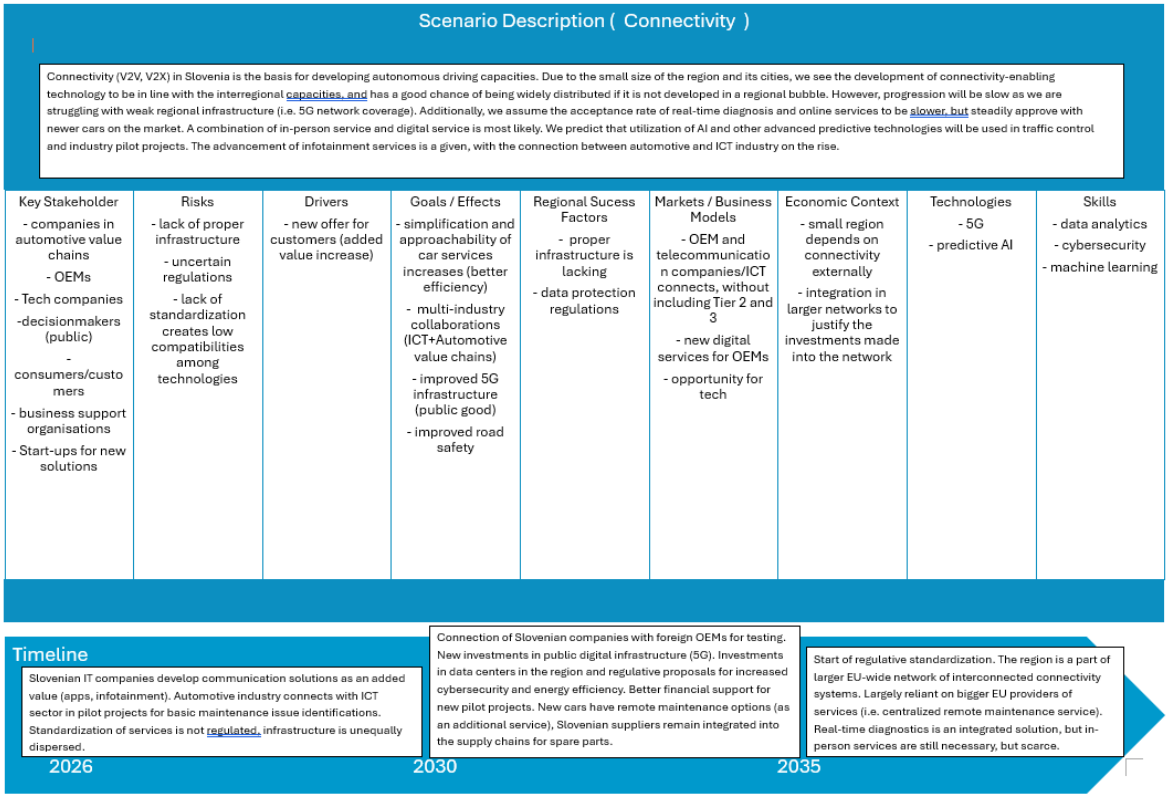


Figure 26: CANVA Connectivity

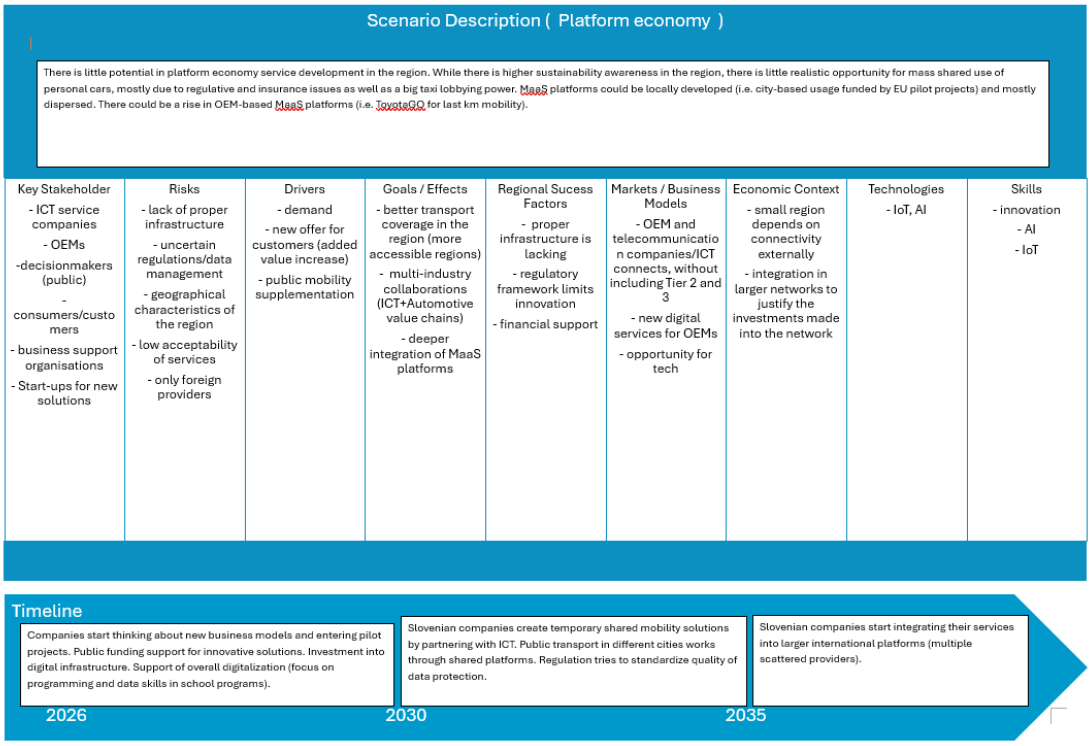


Figure 27: CANVA Platform Economy

#9: SEVA, Slovakia

Scenario Description for Electrification in Slovakia

We expect companies and their efleets to drive progress. Global BEV-Boom. Non-public charging stations make up the majority of charging points. Electric vehicles are built on the basis of super-flexible platforms. Environmental awareness and public acceptance are steadily increasing, but continue to be affected by the cost and availability of infrastructure. Weak incentives and inconsistent regulations from the Governments side are holding back progress towards sustainable mobility.

Key Stakeholder	Risks	Drivers	Goals / Effects	Regional Sucess Factors	Markets / Business Models	Economic Context	Technologies	Skills
OEMs Supply chain Companies Government EU Users	No strategy on the Government side & change in Government policy towards Russia, i.e. missing vision for decoupling sourcing of energy. Lack of skilled staff & talents and incompleted policy to generate skills. Lack of innovation and missing policy to build innovation ecosystem. Lack of incentives from the Government side. Image of high quality production base for foreign automotive companies. Lack of entrepreneurial activity connected to the RDI. Cybersecurity. Trump. War. Musk.	Multinational companies and their ESG goals. 5 multinational OEMs & tens of foreign owned Tier1 and Tier2 suppliers. EU funding. EU policy and targets. China & global transfrormation to zero-emission vehicles.	Attracting talents back. R&D capacity growth. Activities/services with higher added value transferred to Slovakia. New investments in transforming automotive (incl. battery value chain).	Battery factory in Slovakia. Extensive existing network of OEMs and their Tier1 and Tier2 suppliers. Existing basis of technical majors. Close vicinity to key automotive markets and their HQ. Eurozone.	Involving OEMs, TIER1 and research organisations into public-private R&D cooperation. Cooperation with start-ups in the field of new services and technologies.	All OEMs in Slovakia produce EVs. More models to come in 2025 and 2026. Slovakia is a low value-added economy perceived by multinational companies as NOT a destination for their scientific research centres. New taxation rules from 2025, i.e. high corporate tax burden and high taxtation of highly skilles workforce. Decreasing market share of SVK based europeane OEMs in China. Trump´s taxes for EU export, i.e. less resources into transformation.	EV is a PC on wheels, i.e. SW defined vehicles. Shifht of workforce into new technologies, i.e. gigacasting. Electric powertrain driven production technologies.	Big Data SW R&D CX AI Batteries and electronics.

Timeline

2026	2030	2035
EU goals in Co2 and funding. Volvo factory starts its production in Slovakia. Overall awareness on automotive shift to electrification.	Change in mindset – in production as well as in consumers. Low to zero-emission zones, charging stations in settlements. Start of batteries production in Slovakia.	Launch of V2X, with a primary emphasis on V2grid. Growth of SDV as the central R&D concept and vehicle operation.

Figure 28: CANVA Electrification

Scenario Description for Connectivity in Slovakia

Software and apps from new players determine the value proposition. Lack of V2V, V2X and connectivity ecosystem development. The market remains fragmented, dominated by small, localised providers, which hinders large-scale innovation and prevents the development of comprehensive, scalable connectivity solutions. Slight expansion of remote services. Strict data security measures and transparent procedures build public trust and accelerate the adoption of connected vehicle technologies. Incumbents need huge investment into digitalization, they do not have flexible structure, no processes. Do not know how to create platforms.

Key Stakeholder	Risks	Drivers	Goals / Effects	Regional Sucess Factors	Markets / Business Models	Economic Context	Technologies	Skills
OEMs Supply chain IT companies Digital disruptors on the market (nio, tesla, rivian) Government EU Users	Incumbents have limited experience with digital driven cars, i.e. workforce, processes and risk of not beaing fast enough. Cybersecurity. Transparency of the data processing and usage. Software failures and poor infrastructure. Lack of confidence in connected vehicles.	SW defined vehicles as emerging base technology. Digital disruptors pressure, including new digital services for customers. Urban mobility. Traffic predictability. Human comfort.	Building of own capacity for development and production odf digital car. Integration of new digital services into vehicles of incumbents. Improve traffic flow and urban mobility. Reduction of traffic jams. Improved interoperability.	-	Building partnerships between incumbents and new disrupters on the market e.g. VW + Rivian. Regional clusters focused on digital services development. Involving OEMs, TIER1 and research organisations into public-private R&D cooperation. Cooperation with start-ups in the field of new services and technologies.	Slovakia is too small market to attract investments into digital automotive. Also is a low value-added economy perceived by multinational companies as NOT a destination for their scientific research centres.	SDV Digitalization.	Big Data SW R&D CX AI

Timeline

2026	2030	2035
Awareness & best practise sharing.	Change in mindset in the lack of confidence in connected vehicles. Low to zero-emission zones.	Partially connected vehicles in some companies, like logistics or transport.

Figure 29: CANVA Connectivity

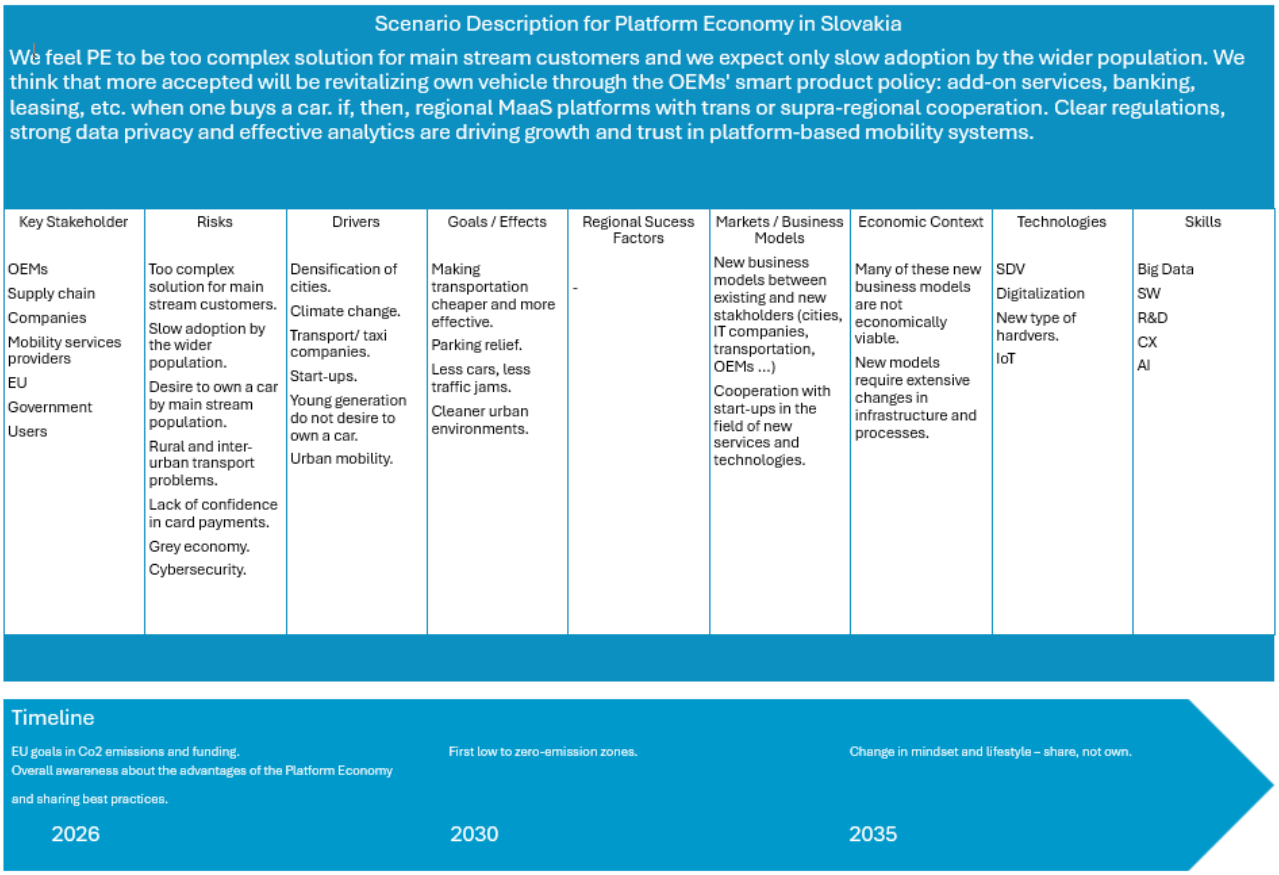


Figure 30: CANVA Platform Economy

Appendix 2: Personas & Now/Wow/How/Ciao of the Second Workshop per Partner

#1: CML, Bavaria, Germany

CANVA Electrification

CANVA

Description new product/service - intelligent connectivity of all systems - production, storage and use - smart meter - bidirectional charging	**Key activities to implemenet the new product/service (incl. timeline)** - get rid of closed/complex systems	**Business strategy & KPIs of the new product/service**	**Client segments**
Value proposition - simplicity - comfort - no wire necessary		**Key resources to implement new product/service** - standardisation - political framework - smart meter - bidirectional charging	**Client relationships** **Channels**

Figure 31: Persona for Electrification

Figure 32: Now/Wow/How/Ciao for Electrification

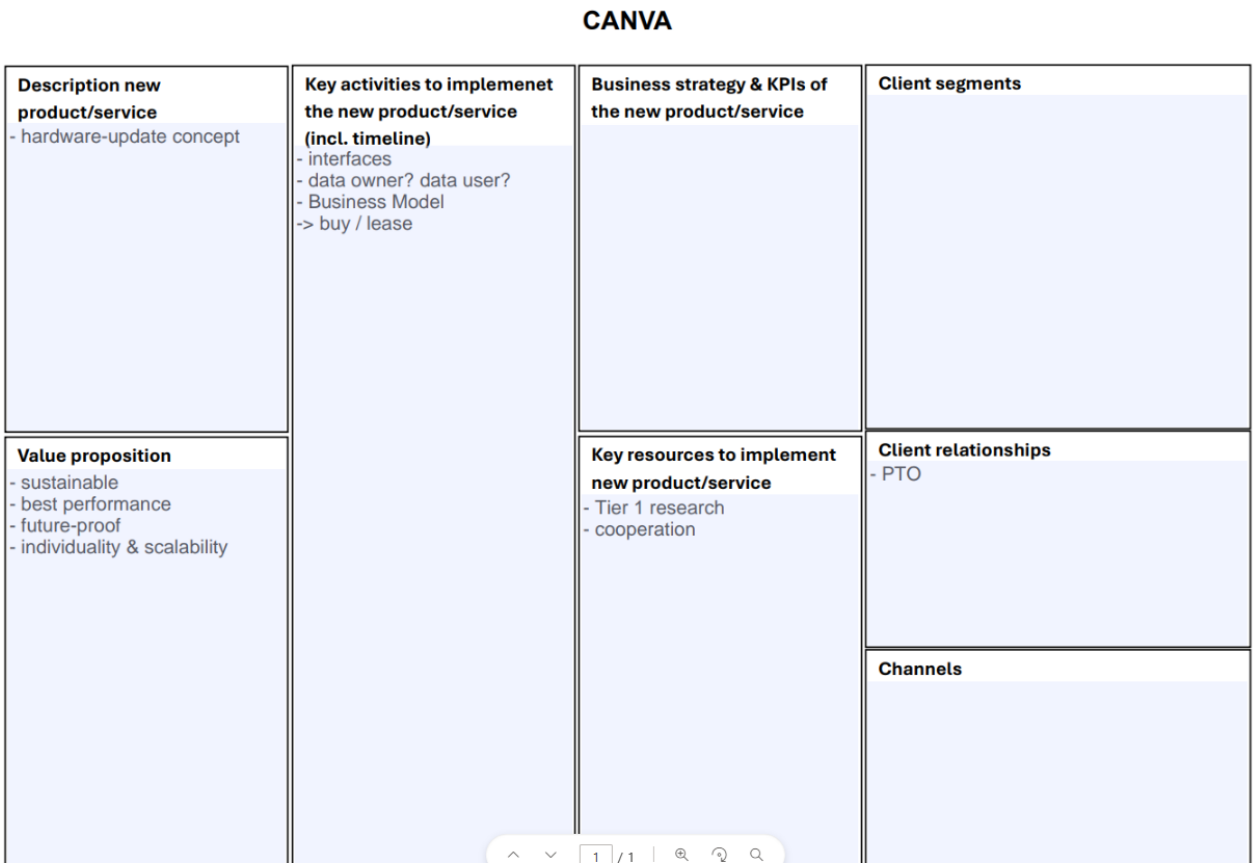


Figure 33: Persona for Autonomous Driving

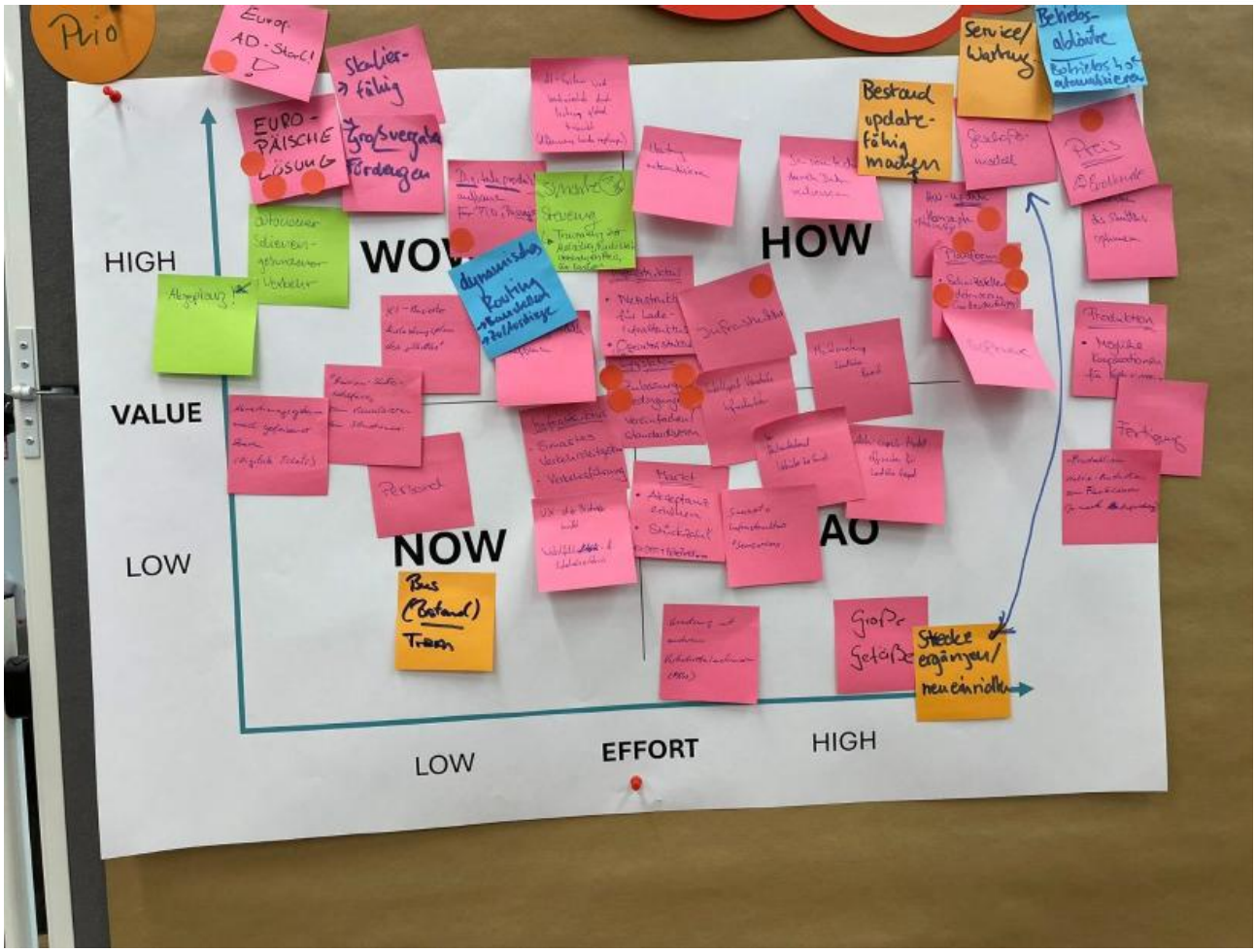


Figure 34: Now/Wow/How/Ciao for Autonomous Driving

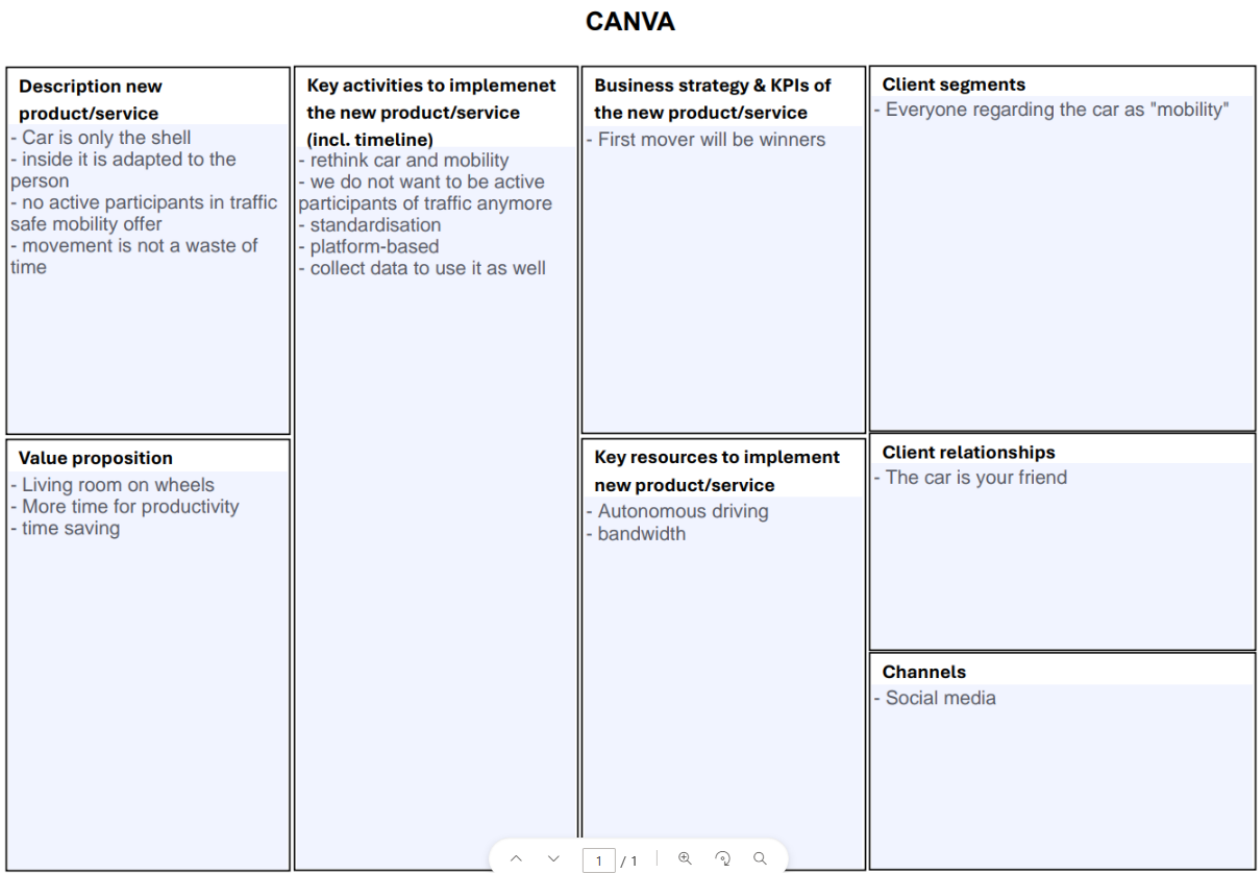


Figure 35: Persona for Connectivity

Figure 36: Now/Wow/How/Ciao for Autonomous Driving

CANVA

Description new product/service - Create car-sharing parking spaces - enhance flexibility - design barrier-free - offer free-floating	**Key activities to implemenet the new product/service (incl. timeline)** - social, political and economical acceptance - car still a status symbol -> new way of thinking - how to get to the car-sharing -> proximity - determine regulatory requirements - use spaces next to bus stops - enhance acceptance - regulatory restrictions	**Business strategy & KPIs of the new product/service** - amount of transcations - change of mobility behavior - household surveys	**Client segments** - all citizens
Value proposition - customer-centered - Connectivity - Availability Proximity to users - Vehice comes to the user - Condition of the vehicle - Price/Performance -> Competitiveness		**Key resources to implement new product/service** - car-sharing providers - money - owners of the spaces - charging stations	**Client relationships** - Distance to the clients - create incentives - suitable for individual use **Channels** - marketing

Figure 37: Persona for Platform Economy

Figure 38: Now/Wow/How/Ciao for Platform Economy

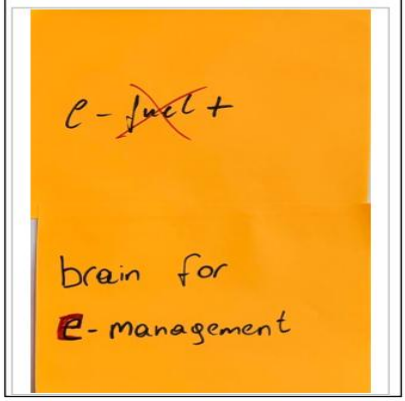
#2: Biz-Up, Austria

Company / Persona

Company Background
- Knowledge in Electrical Engineering & IT
- Software Products & Mechatronics Products
- Development
- Production (Key Components)
- Assembling
- Aftersales
- Service
- Support

Demography
- SME (<500 employees)
- Location: Upper Austria
- private limited company
- Traditional Company (>40 years)
- New Business Area
- Joint Venture
- Progressive Mindset

Logo & Name



Identification
- Career changer from domestic appliances / home automation
- Fossil-free
- CO2-neutral
- Customers:

OEM, fleet operators, companies with large vehicle fleets, subcontractors (construction machinery, agriculture, mining, tunnel construction), military

Expectations, goals & emotions
- Local / regional perception
- Political attention at local / regional level
- Reduce dependency on fossil energy sources
- European energy resilience

Challenges
- Standards
- Guidelines
- Automotive Standards
- Approvals
- Technical Requirements
- Quality
- Safety
- Cyber Security
- Lack of European Harmonization

Figure 39: Persona for Electrification

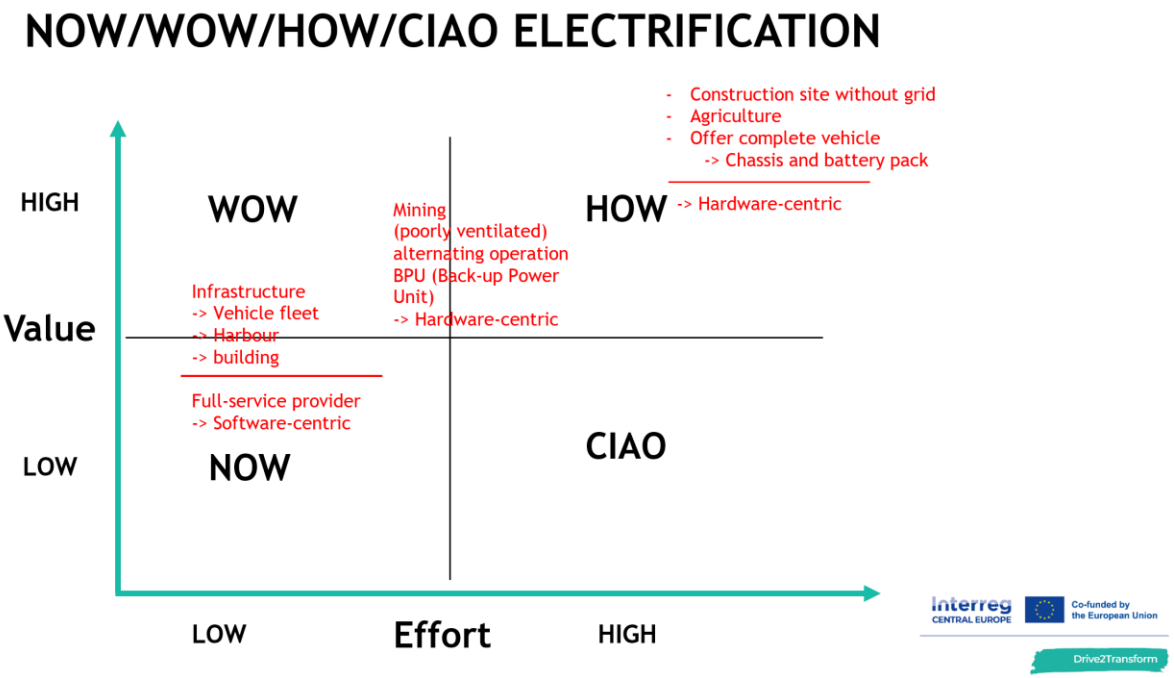


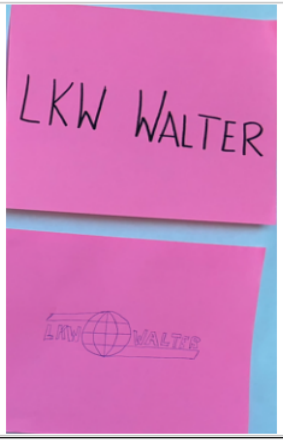
Figure 40: Now/Wow/How/Ciao for Electrification

Company / Persona

Company Background
- Open, dynamic corporate culture
- Customers: Europe, Asia, Africa
- Market leadership through focus on core business: Full truckload transportation across Europe under one roof
- Cooperative leadership style
- Green tranport focus
- AT family-owned company, 100% family-owned
- Our vision is to revolutionize the transport industry through technological innovations and sustainable solutions
- Approximately 1,700,000 full truckloads per year

Demography
- Founded in 1924
- 1968: Start of international transport
- 1,650 employees
- Subsidiaries:
Containex, Walter Business-Park, Walter Lager-Betrieb, Walter-Leasing, Walter Real Estate
- Financing through cash flow, no bank loan

Logo & Name



Identification
- Comprehensive solution for rail - ship - truck (combined transport)
- Avoiding driving restrictions (night / holiday)
- Digital solution for supply chain
- Digital & agile solutions
- Country-specific customer orientation (language, branches)
- Continuous investment in AI & Big Data to increase efficiency
- Down-to-earth, loyal, and innovative company
- Exclusively in "round trips," avoiding empty runs
- Investment in alternative drives such as e-mobility & hydrogen
- Walter Academy: Challenge. Promote. Freedom. Training for employees, environmentally conscious & defensive driving

Expectations, goals & emotions
- Support for humanitarian aid projects (e.g., financially, in-kind donations, volunteer work)
- Customer & employee satisfaction
- Corporate strategy 2030:
  -> Increase transport volume in combined transport
  -> Reduce empty kilometers
  -> Open new routes
- Focus: Expansion of the "combined transport" product with digital services
- Short decision-making processes, space for individual development

Challenges
- Driver shortage
- Trade unions
- Reducing load sizes
- Geopolitical situation (e.g., BREXIT, Ukraine war)
- Technology integration
- Introduction of automated mobility
- Fluctuating fuel prices
- Climate change & sustainability
- Skilled labor shortage (IT)

Figure 41: Persona for Automation

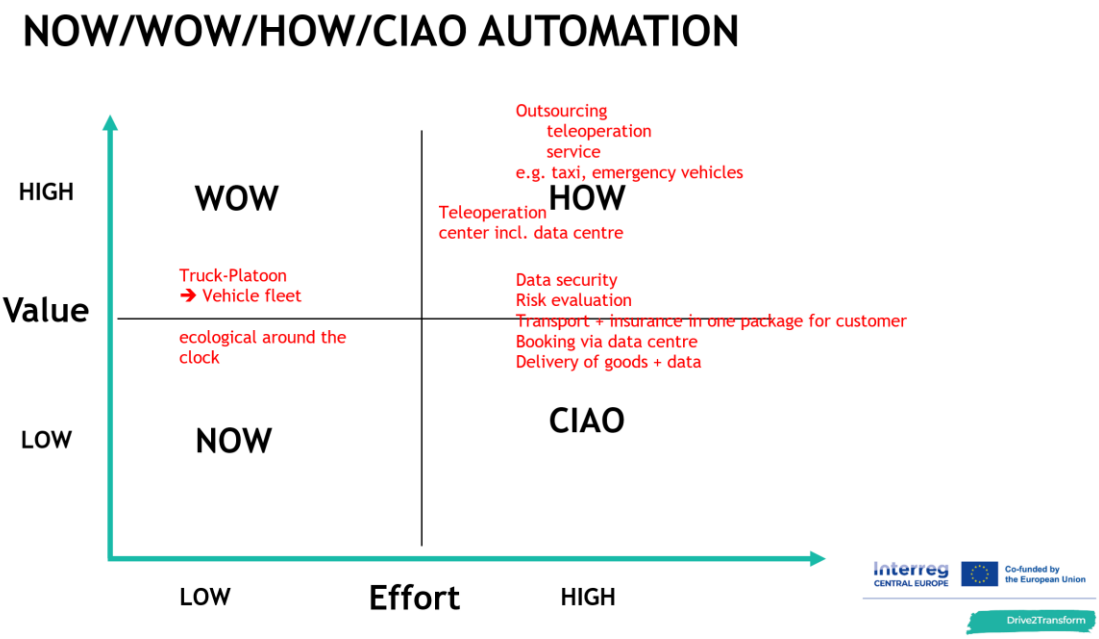


Figure 42: Now/Wow/How/Ciao for Automation

#3: RDA Pilsen, Czech Republik

Company / Persona

Company Background
- Provides professional consulting services to local governments in the Pilsen Region
- Supports the economic and social development of the region
- Focus for the Pilsen Region, cities, municipalities, ministries, universities and private entities
- Management of bilateral and international projects

Demography
- Founded in 2000
- Legal Form: non-profit, public benefit society
- Location: in the city center of Pilsen
- Staff: ~26 employees
- Growth: stable team
- Culture: apolitical, change-resistant

Logo & Name

RRA PLZEŇSKÉHO KRAJE

Identification
- Creation of analyses, concepts and programs
- Preparation and management of development projects implemented mainly in the Pilsen Region including within the framework of international cooperation programs
- Activities of the main office of the Association of Towns and Municipalities of the Pilsen Region
- Education and awareness
- International cooperation
- Networking
- Project preparation and administration

Expectations, goals & emotions
- Expectations: securing top quality automotive companies in the European region

- Goals: achieve automotive companies in the region at the current or higher level

- Emotions: doubts about the future direction of the automotive industry, lack of transformation strategies and specialized support programs

Challenges
- Help small and medium-sized automotive companies with transformation
- Develop regional strategical documents in this field
- Make recommendation for policy makers
- Setting up a regional ecosystem for successful transformation

- Support for the development of a test circuit for autonomous cars (know-how transfer from the existing test circuit for autonomous trams)
- Development and support of the open innovation method in the automotive industry
- Subsidy projects to support the regional ecosystem for automotive

Figure 43: Persona for all thematic areas

CANVA

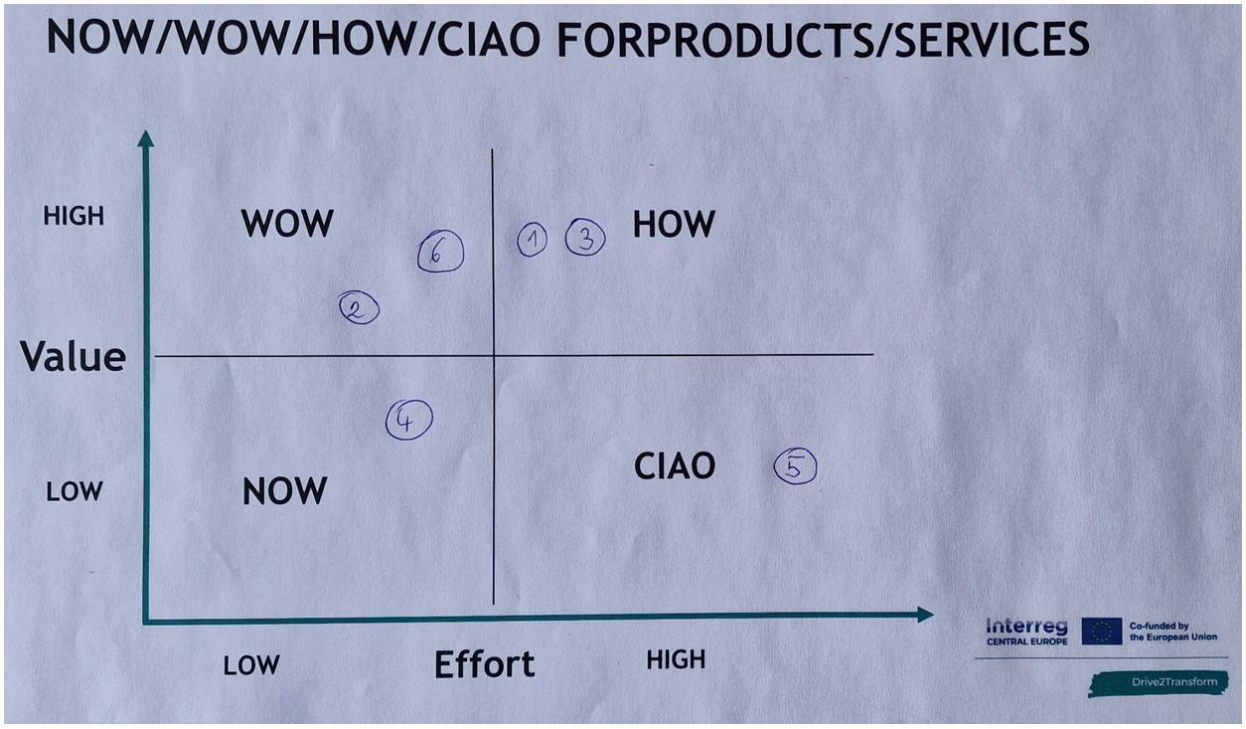
<table>
<tr>
<td>Description new product/service
Support for automotive companies in the transformation process:

1. preparation of transformation roadmaps
2. preparation of knowledge maps
3. consulting on the implementation of new technologies
4. consulting on energy costs
5. support for specific training programs
6. implementation of Testbeds</td>
<td rowspan="2">Key activities to implemenet the new product/service (incl. timeline)
- involvement of the Pilsen Region, the city of Pilsen and the state level at the ministerial level in support
- new project development

- B2B meetings
- workshops
- webinars
- conferences</td>
<td>Business strategy & KPIs of the new product/service
- strategy that includes B2B, partnerships, and online channels

- number of supported companies</td>
<td>Client segments
- automotive companies of all sizes in the region
- supply companies for automotive</td>
</tr>
<tr>
<td>Value proposition
- networks of involved companies
- consultation and advisory services</td>
<td>Key resources to implement new product/service
- city subsidies
- regional subsidies
- state subsidies
- european subsidies</td>
<td>Client relationships
- regional cooperation
- interregional cooperation
- cross-border cooperation

Channels
- targeted marketing campaigns</td>
</tr>
</table>



#4: PU, Baden-Württemberg, Germany

Company Background
- Family-owned SME (4nd generation), founded 1948
- Origin: Toolmaking → now precision stamping (automotive focus)
- Mission: "Precision from tradition."
- Industries: Automotive, electronics, light machinery
- Activities: Stamped parts, small series, in-house tooling

Demography
- Legal Form: GmbH, privately owned
- Location: Industrial area, Northern Black Forest
- Staff: ~75 employees, aging workforce
- Growth: Stable, but impacted by automotive decline
- Culture: Craftsmanship, loyal, change-resistant

Logo & Name

PräzisionsPlus Pforzheim

PRÄZISIONPLUS PFORZHEIM

Identification
- Character: Traditional, reliable, technically strong
- Appearance: Low-key, no digital presence
- Info Channels: Trade fairs, print, supplier networks
- Buying: Long-term partners, technical decision-makers
- Influences: OEMs, raw material costs, family owners
- Strengths: Tooling, flexibility, material know-how
- Resources: Old machinery, weak digital systems

Expectations, goals & emotions
- **Wants**: Process efficiency, market diversification
- **Goals**: Order stability, generational transition
- **Problems**: Falling demand, lack of skilled workers
- **Fears**: Tech obsolescence, customer loss
- **Inspired by**: Peer success, simple tech upgrades, local programs

Challenges
- Innovation Decisions
  - **Digital skill gap**: Few internal resources for evaluating or implementing new technologies
  - **Time constraints**: Lean operations leave little room for strategic projects
  - **Low exposure**: Limited contact with innovation networks or digital solution providers
- Transformation Barriers
  - **Cultural inertia**: Strong preference for familiar workflows and analog processes
  - **Generational divide**: Younger engineers face pushback from long-standing staff
  - **Narrow market view**: Heavy reliance on existing automotive clients limits vision
- Operational Difficulties
  - **Manual workflows**: Production tracking, quality checks, and planning mostly paper-based
  - **Equipment age**: High downtime risk, inefficient setup times
  - **Talent shortage**: Difficulty attracting skilled technical workers to a rural location

Figure 44: Persona for Automation

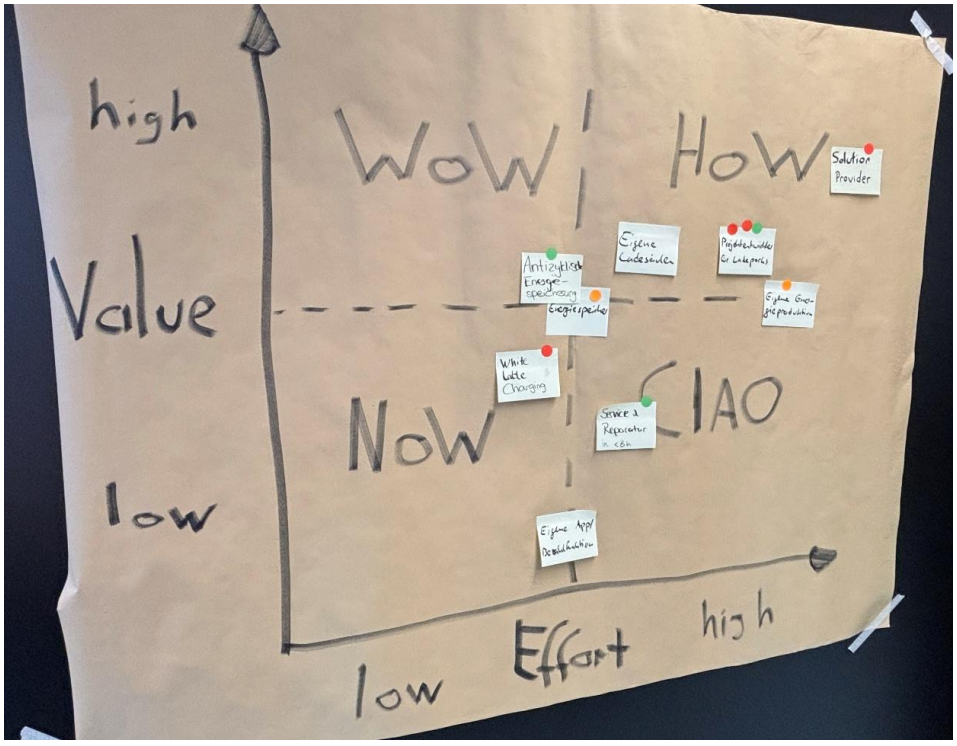


Figure 45: Now/Wow/How/Ciao for Automation

Company / Persona for
Scenario Charging Infrastructure for BEV

Company Background

- Family-owned SME (2nd gen)
- Originally industrial digitalization
- Since 2025 active in e-mobility (Connectra ChargeTech) as New corporate division
- Mission: Scalable, smart charging integrated into IT & energy systems
-Focus: Processes, Software, backend systems, fleet integration, cloud-based charge management

Demography

- Founded: 2002 (university spin-off)
- Legal Form: GmbH
- HQ: Rural tech park, Northern Black Forest
- Workforce Culture: Tech-driven, regionally rooted, with strong internal knowledge-sharing and partnerships with regional universities and vocational programs
- Organizational Structure: Flat hierarchies with agile, cross-functional teams

Logo & Name

Connectra ChargeTech

CONNECTRA

Identification

- Mature tech company, pragmatic, no start-up vibe
- Communicates via expert networks, webinars, B2B channels
- Long-term tech partnerships; develops software in-house
- Service Provider for digitization Processes and SCM
- Influences: Regulation, customer ESG needs, energy trends
- Strengths: APIs, SaaS platform, IT security, cloud ops
- ~100 staff (20 in eMobility), strong dev team & customer integration

Expectations, goals & emotions

- Build white-label charging platform
- Enable scalable B2B solutions
- Lead in SME-focused e-mobility tech
- Pain points: fragmented software, poor integration, admin overhead
- Fears: plug & play commoditization, legal shifts, unreliable hardware
- Inspired by: tech–sustainability synergy, automation, open ecosystems

Challenges

- **Innovation Decisions**
  - **Feature vs. Usability:** Balancing complex backend functionality with simple, intuitive interfaces for end users.
  - **Policy Dependancy:** Business cases often rely on public funding or shifting regulatory frameworks (e.g., charging incentives, building codes).
  - **Market Diversity:** Wide range of customer needs—from logistics firms to housing cooperatives—makes standardization difficult.
  - **Tech Validation:** New smart charging features (e.g. dynamic load balancing, V2G) need real-world testing before scaling.
- **Transformation Challenges**
  - **Role Shift:** Transitioning from pure software provider to a hybrid solution operator requires new skills and mindset shifts.
  - **Hardware Know-how:** Lack of internal experience in power systems, site planning, and installation processes.
  - **Cross-domain Integration:** Bridging digital platforms with physical infrastructure (construction, utilities, approvals) is time- and resource-intensive.
- **Operational Difficulties**
  - **Client Communication:** Explaining technical architecture (APIs, backend logic) to non-technical stakeholders remains a barrier to trust.
  - **Legacy Integration:** Many customers operate with outdated systems (ERP, fleet software), complicating seamless charging integration.
  - **Compliance Pressure:** Keeping up with evolving standards (e.g., calibration law, LSV) requires continuous product updates and legal oversight.

Figure 46: Persona for Electrification

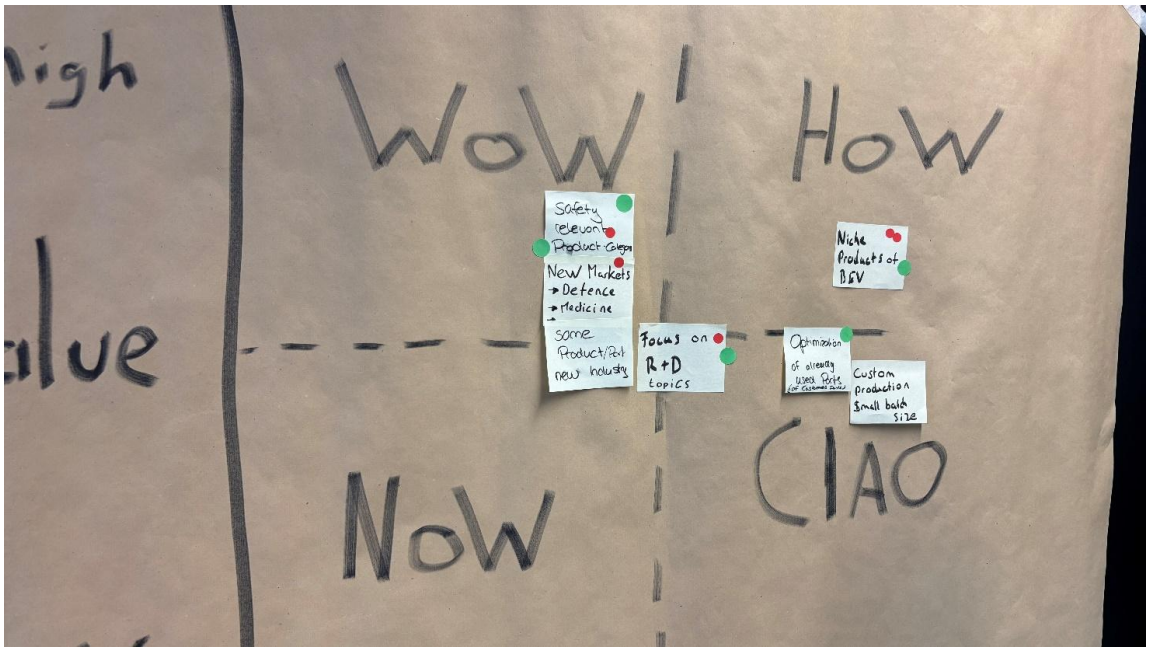


Figure 47: Now/Wow/How/Ciao for Electrification

#5: PBN, Hungary

COMPANY PERSONA

Company Background	Demography	Logo & Name
AutoTherm Ltd. is a second-generation, family-owned enterprise headquartered in Jászberény, Hungary. It was founded in 2025 originally as a subcontractor for household refrigeration parts. Following the restructuring of the Electrolux plant, AutoTherm shifted its focus towards automotive thermal components. The company maintains strong B2B relationships with Tier 1 and Tier 2 suppliers in Europe, and its current vision focuses on becoming a regional leader in sustainable thermal technologies for e-mobility and smart infrastructure.	• Founded: 2025 • Headquarters: Jászberény, Hungary • Employees: 130 • Core Activities: Manufacturing heat exchangers, compact cooling modules, sensor-integrated thermal units	AutoTherm
Identification AutoTherm is characterized by flexibility, rapid adaptation to new client demands, and close collaboration with local technical schools. The company innovates through practical experimentation and process optimization rather than formal R&D departments. Key information flows through direct contact with clients and engineering teams. Decision-making is centralized around the founding family. AutoTherm's transformation has been influenced by Electrolux's restructuring, regional business associations, vocational institutions, and municipality-driven development initiatives. Their key resources include a partially modernized production facility, a team of skilled technicians, and access to technical training programs in the region.		
Expectations, goals & Emotions AutoTherm expects stability in supplier contracts and moderate growth through product diversification. The company seeks to enter the green heating and e-mobility segments. It wants to transform its legacy in cooling systems into high-value components for the new energy economy. They are particularly inspired by the idea of becoming a regional hub for heat pump technologies and thermal control units for EVs. Their goals include developing proprietary sub-assemblies, forming joint ventures with EU-based green tech firms, and stabilizing workforce retention through technological upskilling.	**Challenges** AutoTherm faces challenges in financing innovation projects due to limited internal R&D capacity. They struggle to retain young professionals, many of whom migrate to Budapest or abroad. The company also finds it difficult to keep up with digitalization trends, such as integrating real-time quality monitoring or predictive maintenance. They are cautious about investing in large-scale transformation without public support or guaranteed procurement volumes.	

Figure 48: Persona for all topics

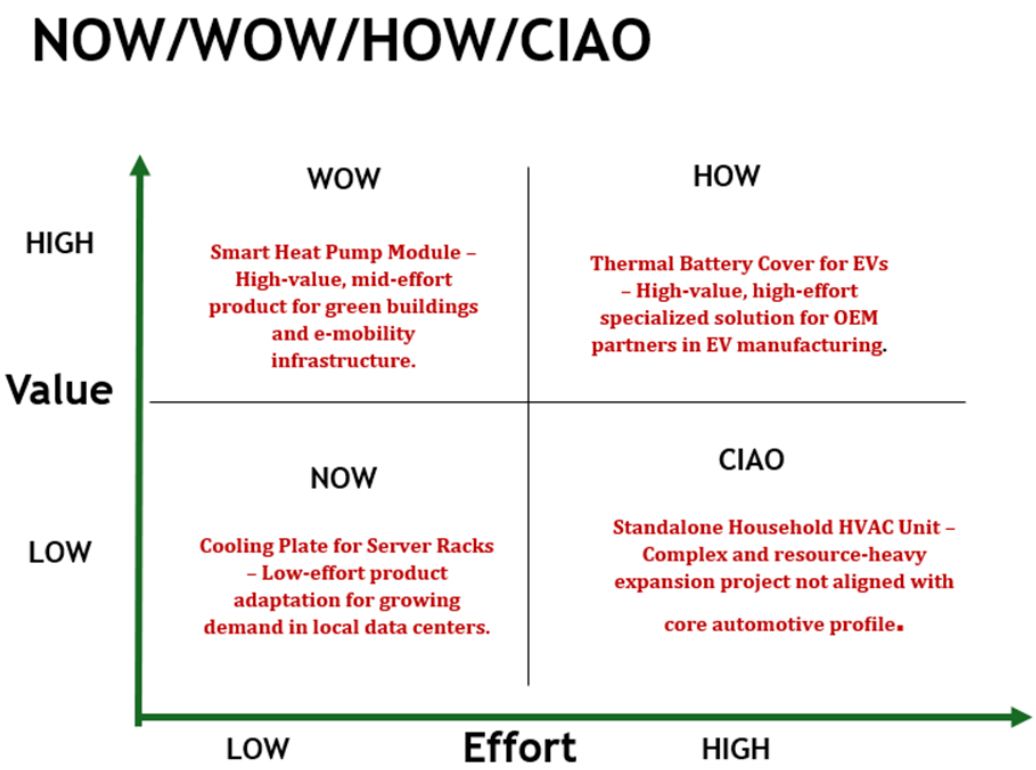


Figure 49: Now/Wow/How/Ciao for all topics

#6: NOI, Italy

Instead of the **50**Now/Wow/How/Ciao Matrix the LSP moderator decided in agreement with all partecipants to rate the first implementation steps of each group by the othe (competing) group:

5 votes Software development including the user interface of the plug your vehicle configurator

5 votes Development of key components like battery, wheels and control unit

0 votes: logistics and setup of assembly service

3 votes: Modular drivetrain, Intermodal energy management system, Integrated floor charging solution

0 votes: Smart sustainalbe interior textile/panels, embedded external smart lighting

#7: KSSE, Poland

Company Profile

Company history	**Place**	**Company name and logo**
BLEES ltd. was established in 2018. The company designs and manufactures autonomous vehicles and software for managing modern urban mobility. The company has a team of specialists from the public transport sector and programmers who cooperate with universities, IT companies and companies supplying manufactured vehicles.	Gliwice Poland	BLEES

Products

Autonomous Minibus: the vehicle is equipped with a high-power electric drive and systems ensuring the comfort and safety of passengers (range: 200 km (average); maximum power: 150 kW; max. capacity: 15 people; battery capacity: 58 kWh; max. fast charging power: 100 kW). The vehicle is equipped with 7 lidars, 11 cameras, 4 radars, 3 GNSS receivers and IMU. The sensors cover the entire area around the vehicle and provide it with better orientation in the terrain and in the current situation on the road. They operate in different ranges, thanks to which the minibus will react in changing lighting and weather conditions. Additionally, the range of the sensors overlaps, which increases the level of safety in the event of damage to any of them.

On-demand transport management system: the system consists of a platform for on-demand transport management, an application for residents and an application for public transport drivers. This solution enables a comprehensive introduction of on-demand transport services in a specific area, and implementation is possible in just a few weeks. DRT (demand responsive transport) model – a form of shared transport in which vehicles change their routes based on real passenger demand, without using a rigidly set timetable.

Goals and focus	**Challenges**
With its solutions in the area of modern mobility, BLEES wants to improve the quality of life in sustainable cities. The company focuses on creating convenient, safe and affordable products and services for modern mobility.	The lack of legal regulations related to the appearance of autonomous vehicles in public space and the liability of the parties involved in specific events (accidents) prevents the implementation of autonomous vehicles on the market. The need to conduct public tenders by local government units forces the company to defend its target vehicles against Asian competition in terms of price. • How can a company – despite the above unfavorable conditions – sell its products? • How can a company leverage its existing experience and technological solutions in partnerships with other companies? • What products/services are worth considering in your portfolio by 2030/2035?

Figure 51: Persona for Automation

Product and service solution options

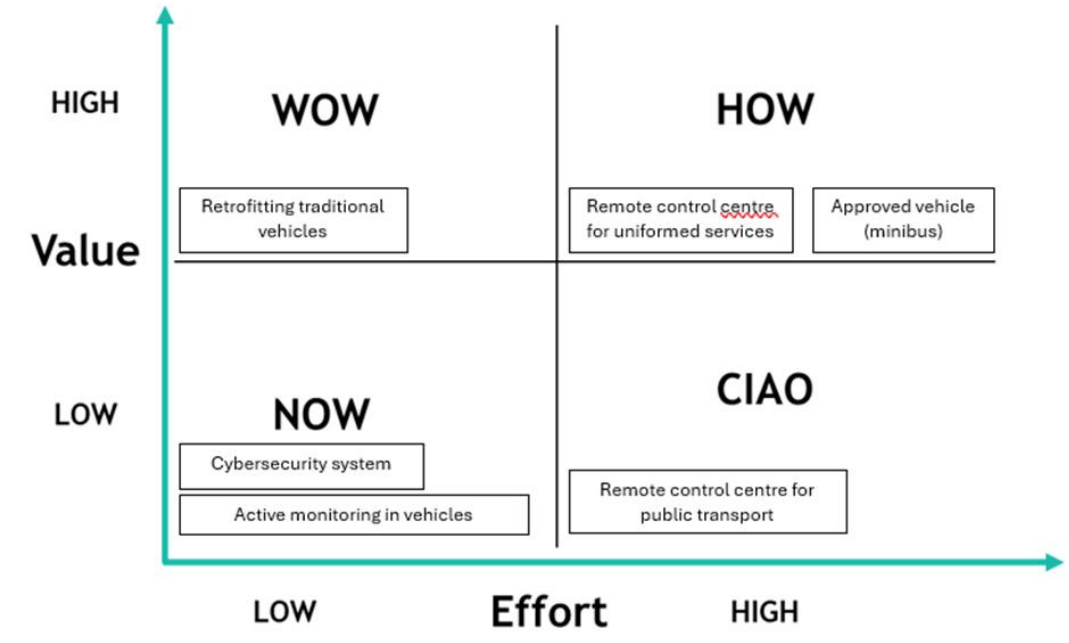


Figure 52: Now/Wow/How/Ciao for Automation

Company Profile

Company history SZCZĘŚNIAK Special Vehicles Sp. z o.o. was established in 1992. For over 33 years, the company has attached great importance to technology and modern solutions. Experienced engineering staff, advanced design office and cooperation with universities and scientific institutes guarantee innovative solutions and structures. On the domestic market, the company is a leader in the production of medium and heavy rescue and firefighting vehicles intended for PSP and OSP units. The company exports over 30% of its production to 35 countries on 4 continents. The company has an Integrated Quality Management System based on ISO 9001:2015, ISO 14001:2015 standards, AQAP 2110:2016 requirements and an internal control system, which allows the implementation of orders for the Polish Armed Forces or other NATO countries.	**Place** Bielsko-Biala	**Company name and logo** SZCZĘŚNIAK
Products The largest group of manufactured vehicles are fire trucks. In addition, the company produces vehicles (e.g. command and communication; fire; technical, chemical, water rescue) for units including: the army, Border Guard, Police, energy and gas services.		
Goals and focus In the coming years, the company is focusing on product and market diversification.	**Challenges** Connectivity and safety solutions are emerging on the market (e.g. telematics solutions monitoring vehicle and equipment availability), which improve communication during crisis interventions. Not only passenger cars will become increasingly intelligent, but also special vehicles. • What solutions make special vehicles more intelligent considering the crisis conditions in which they must operate? • What communication products (V2V, V2X) are worth developing in special vehicles to improve work during crisis interventions? • What products or technological solutions supporting drivers/intervention teams are worth developing in special vehicles?	

Figure 53: Persona for Connectivity

Product and service solution options

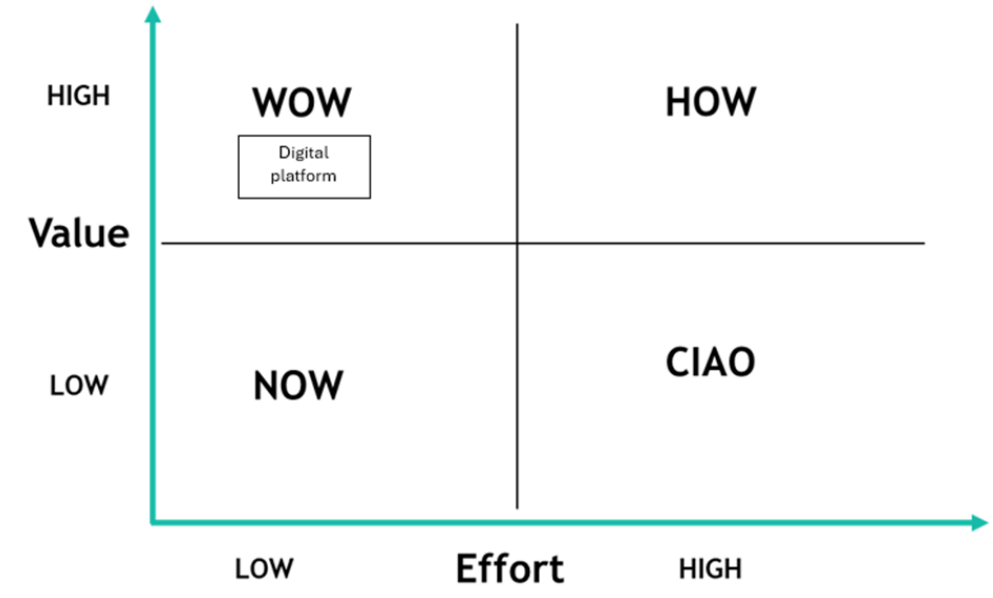


Figure 54: Now/Wow/How/Ciao for Connectivity

Company Profile

Company history MICHAEL was founded in 1981. It is a medium-sized company that manufactures metal and composite products for various industries. The company has a team of qualified and experienced designers who comprehensively implement, design and develop new products (workstations, tools, components) in cooperation with customers. By focusing on the continuous development of employee competencies, the company is not afraid of new challenges and invests in new manufacturing techniques.	**Place** Rydułtowy Poland	**Company name and logo** MICHAEL
Products and services The company manufactures metal and carbon fiber composite components for cars. MICHAEL works with Tier-1 suppliers as well as OEMs.		
Goals and focus The company wants to further develop its portfolio of carbon fiber composite components for various types of vehicles. Composite materials are playing an increasingly important role in electric vehicles. A vehicle's weight has a direct impact on its energy efficiency, acceleration time, handling and overall performance. Carbon fiber has high tensile strength, making it stronger than steel and enabling the construction of lightweight, durable components.	**Challenges** Carbon fiber is a high-performance material, but it comes at a higher price. Composites can improve aerodynamic design, thermal management systems, and battery efficiency. Composite materials play a significant role in improving the safety and durability of electric vehicles (EVs), contributing to the structural integrity of various components. Fire-resistant composites protect key components (e.g., the battery) and reduce the risk of fire incidents in EVs. Solutions include fire-resistant housings, thermal barriers, fire-resistant chassis and body frames, materials with fire-suppressing properties, smart battery systems that detect early temperature changes, and materials that dissipate heat efficiently. Composite materials can be used to design lightweight, stylish interiors while ensuring a balance between aesthetics, material choice, cost and functionality. • Given the high material costs, what carbon fiber components are worth considering? • Considering the requirements for material recovery and reuse of recovered materials, what technological processes should be developed to use recovered carbon fibers? • For which external components could carbon fiber defend itself as a material? • For which internal components could carbon fiber defend itself as a material?	

Figure 55: Persona for Electrification

Product and service solution options

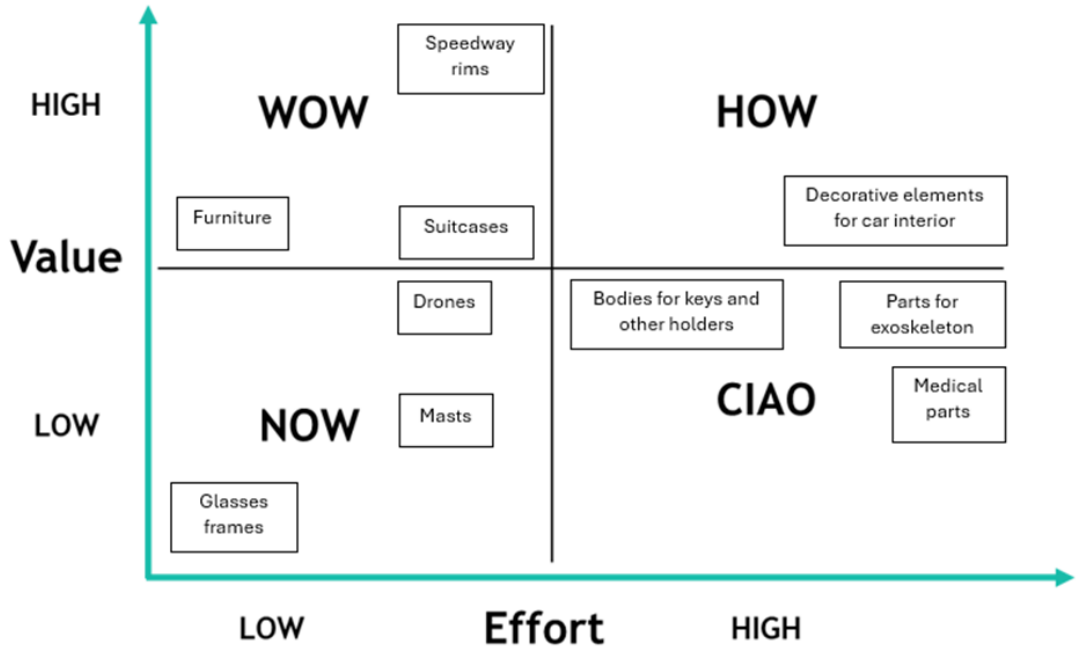


Figure 56: Now/Wow/How/Ciao for Electrification

Company Profile

Company history KLGS ltd., operating since 2011, specializes in advanced plastic processing by injection. The modern production plant in Pcim has 25 injection molding machines with clamping forces from 30 to 300 tons, including electric, two-component (2K) and vertical machines. Thanks to cooperation with specialized tool shops and extensive technical infrastructure, the company implements complex projects with high precision, quality and compliance with rigorous automotive industry standards.	**Place** Pcim Poland	**Company name and logo**
Products and services KLGS offers comprehensive production of technical parts made of plastics, including both single- and two-component technologies, with the possibility of overmolding metal inserts or inserts. The company supplies structural and functional elements, including products reinforced with fiber, technological additives or made of bioplastics. The offer is complemented by assembly services - manual and automatic - as well as welding, decoration and production of hybrid components. Our own facilities for designing, building and regenerating molds allow for efficient implementation of new products and quick entry into the market.		
Goals and focus The company focuses on diversifying its customer portfolio and market segments. It provides comprehensive service for the production process of plastic components. In the coming years, it will continue to support its customers from product design, through the preparation and testing of prototypes, preparation of molds, implementation of production of the approved product, completion of components, manual and automatic assembly and decoration.	**Challenges** Plastic components are used in electric vehicles due to the lightness and flexibility of the material. • What products could the company produce for batteries and battery systems? • What products could the company produce for components that must meet high fire resistance requirements? • What products could the company produce for systems serving vehicle users?	

Figure 57: Persona for EV & Automation

Product and service solution options

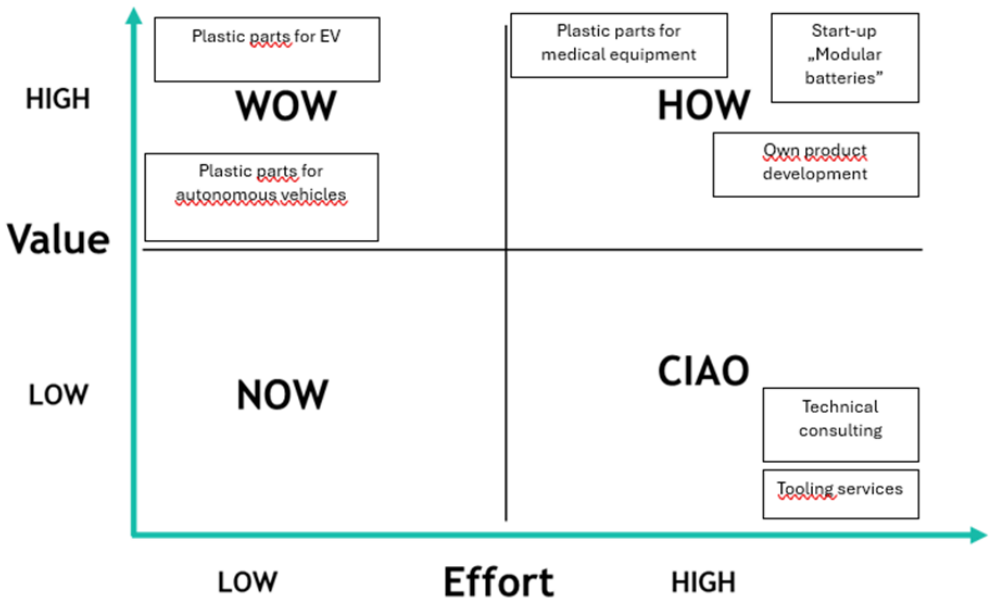


Figure 58: Now/Wow/How/Ciao for EV & Automation

#8: CCIS, Slovenia

Persona

Background
-vision: creating small and medium series electric motors with an excellent flexibility with design

- Tier 1 producer, part of electrical industry
- Creating an automized production line but allows us flexibility and modular motor design

Demographics
- medium size company (100 employees)

- Located in Kranj (industrial zone)

Logo & Name
ElektroLine Systems d.o.o.

Company characteristics

- Global but niche customers in the luxury vehicle segment
- Customers have differing orders, but we offer high added value product with project-style work
- First work in consortiums where we proved our patent success
- Product allows for hardware/software integration

Goals and expectations
- main goal: develop a product and license it to global partners (with flexible changes)

- Our next steps can be expanding the market toward drones, ships
- Dual use and heavy transport vehicles
- Strategic goals: Global market (high-end)
- Main problem we solve: fast delivery of flexible solutions (process automatization)
- We were inspired by current trends

Challenges

- Main issue is selling the patent
- Issue in how to properly use the technology for better production and more efficiency while not compromising product quality
- Future problem is too high growth –> unable to supply previous customers
- E-mobility staff is hard to find
- Important to have a good quality control system
- Retaining knowledge and competences
- We are worried about hydrogen and alternative fuel technologies

Figure 59: Persona for Electrification

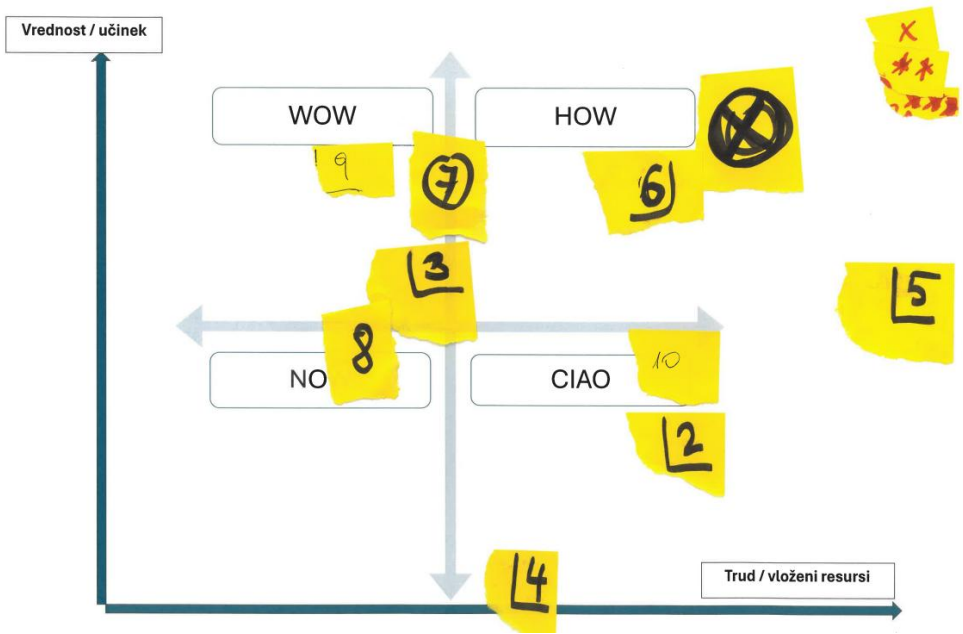


Figure 60: Now/Wow/How/Ciao for Electrification

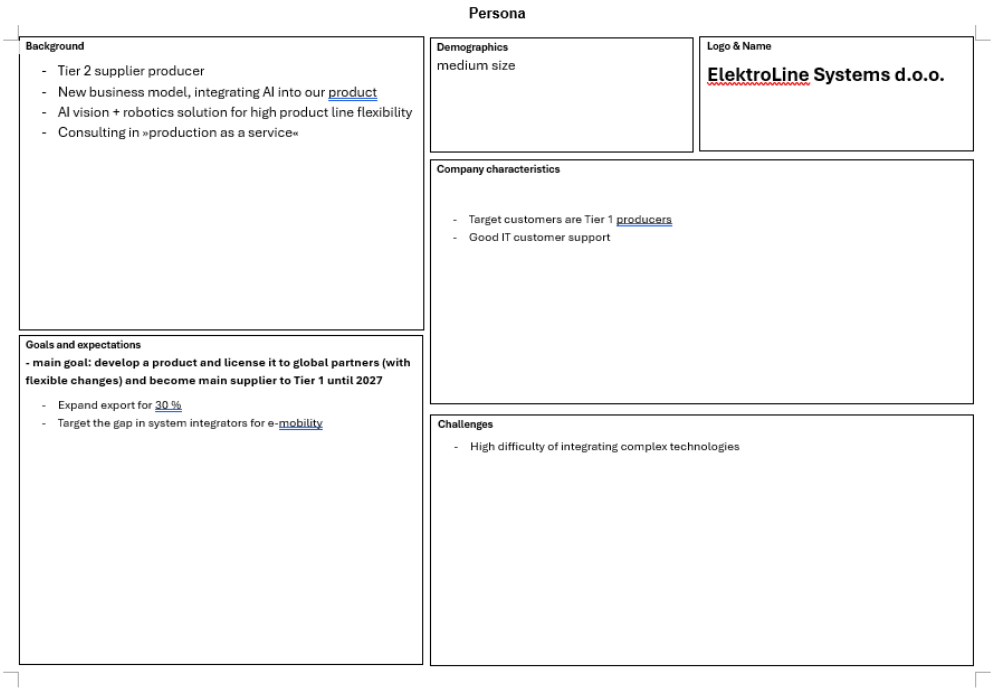


Figure 61: Persona for Automation

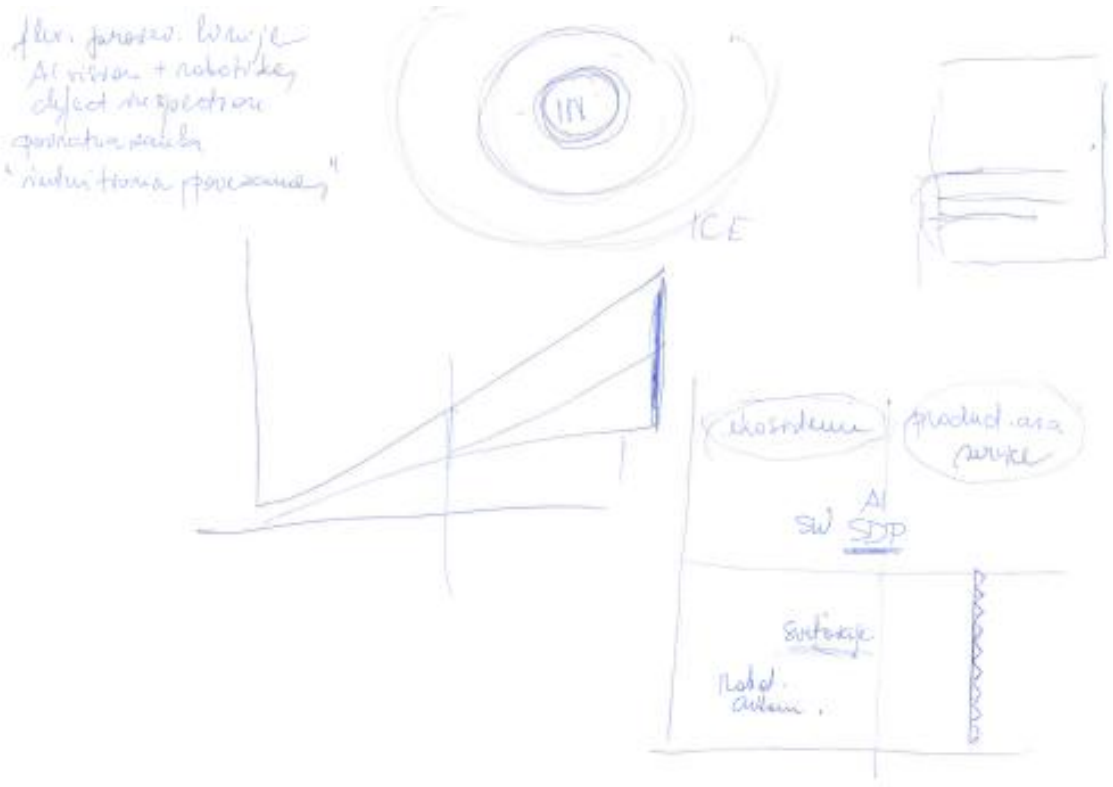


Figure 62: Matrix Now/wow/how/ciao was done alternatively, by drawing graphs of impacts and resources by the team.

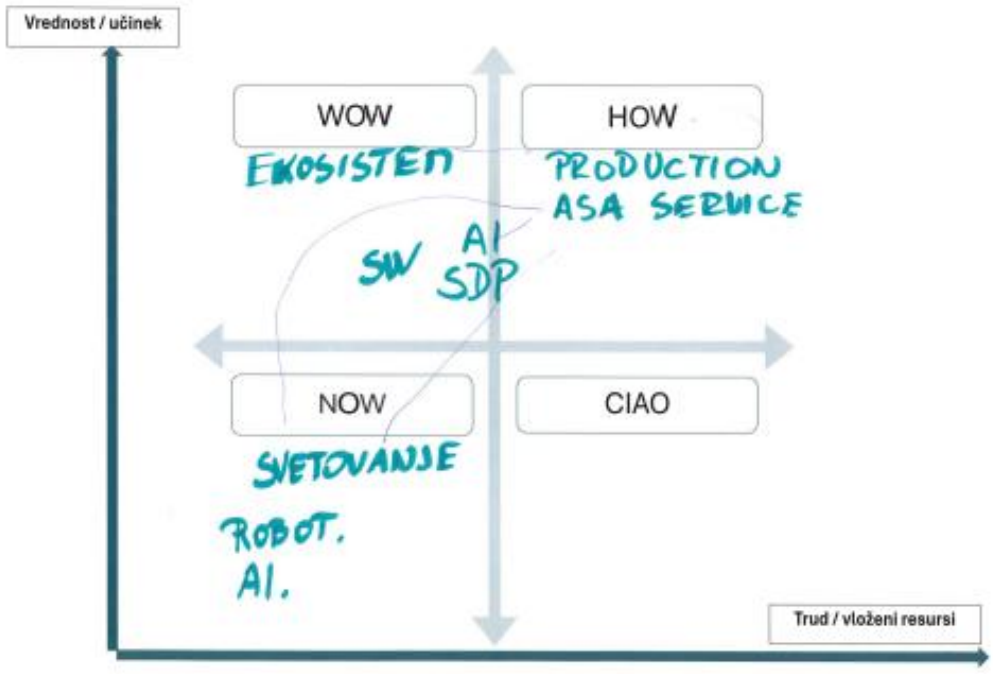


Figure 63: Matrix Now/wow/how/ciao was done alternatively, by drawing graphs of impacts and resources by the team.

Persona

Background
- R&D and production
  - Tier 1 producer, automation – ADAS components (SENSORS and CAMERAS)
  - Development of diagnostic tool for V2X communication in autonomous driving

Demographics
- medium size company (500-1000 employees)

Logo & Name
MirkoAvtomatika d.o.o.

Company characteristics
- Agile development group, that can respond to market and customer needs fast
- Long-term customer relations are prevalent, continuously participating in research & development projects

Goals and expectations
- solve problems of interoperability in ADAS systems (one solution)
  - By 2035 enlarge production to 200 mio p/year

Challenges
- Problems in regulations and low testing environments, as well as data quality and privacy

Figure 64: Persona for Automation

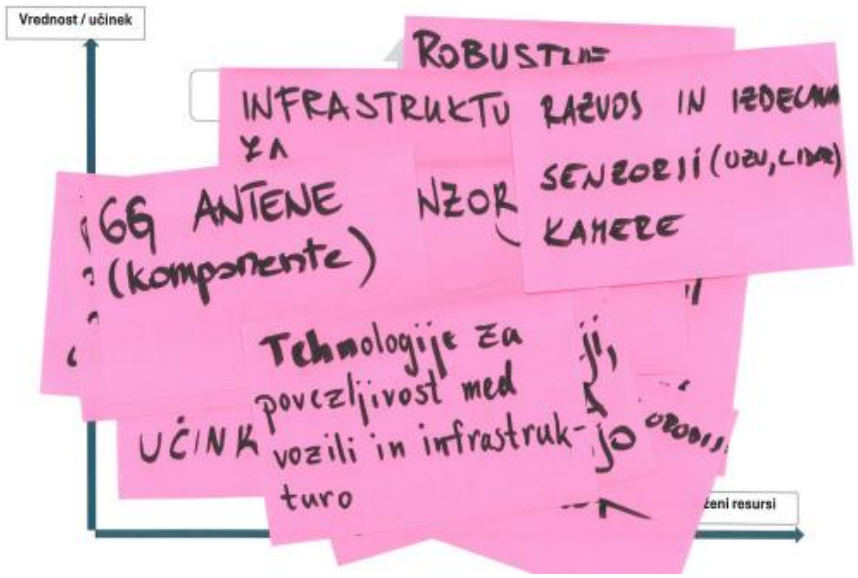


Figure 65: Now/Wow/How/Ciao for Automation

#9: SEVA, Slovakia

Company / Persona in Connectivity

Company Background

An engineering start-up full of inventors and creative people, looking for the solution not how not to.
From a Smart lighting control in cities and buildings to smart charging of electric vehicles in street lightings.

Demography

The company has been established in 2011.

Legal form: Ltd. company

Sites: Slovakia, Prešov (eastern Slovakia)

Up to 35 employees

Logo & Name

SEAK, s.r.o.

SEAK

Important milestones in the company development:

- Municipal public radio transmission over public lighting grid
- A patent for digital long distance power line communication
- **Smart lighting control** based on power line communication for public as well as commercial lighting
- **LUMiCHARGER chargers integrated with the SEAK SMART CITY lighting**
- Installation of smart charging integrated with the parking system.

Identification

A fast-growing company engaged in the development, manufacture and sale of electronics for the lighting market with a primary focus on automation, communication and power saving in the global market and the manufacture of charging stations for electric vehicles.

Vision: Reducing consumption at a time of high energy prices, but also the growing emphasis on the environment is increasing the demand for smart solutions.

Expectations, goals & emotions

Saving electricity and money is the goal. The company produces modules for public lighting. Its patented technologies are used by hundreds of cities and municipalities not only in Europe, but also worldwide. Thanks to them, they shine efficiently. The company can tell each lamp when and at what intensity to shine. It can even set up communication between lamps in groups so that they can inform each other.

Challenges

The main obstacle to building an EV charging network in cities is the availability of suitable power grids with sufficient capacity. If local transformer capacity allows, they can be added, but at the cost of digging up streets. **With the company´s technology, the city can use the existing grid for public lighting and integrate charging stations into ubiquitous streetlights.** This is the most efficient way to build a large EV charging infrastructure for citizens who park their cars in housing estates. **Dynamic power management optimises the charging rate so that the maximum available energy is always used for the building, while at the same time not exceeding the maximum reserved capacity.** The electricity for the building's operation takes priority, with the remaining capacity automatically distributed evenly among the vehicles being charged according to their charging capabilities. Smart charging station for electric cars in different variants of shared electricity between lighting and electric cars

Figure 66: Persona for Connectivity

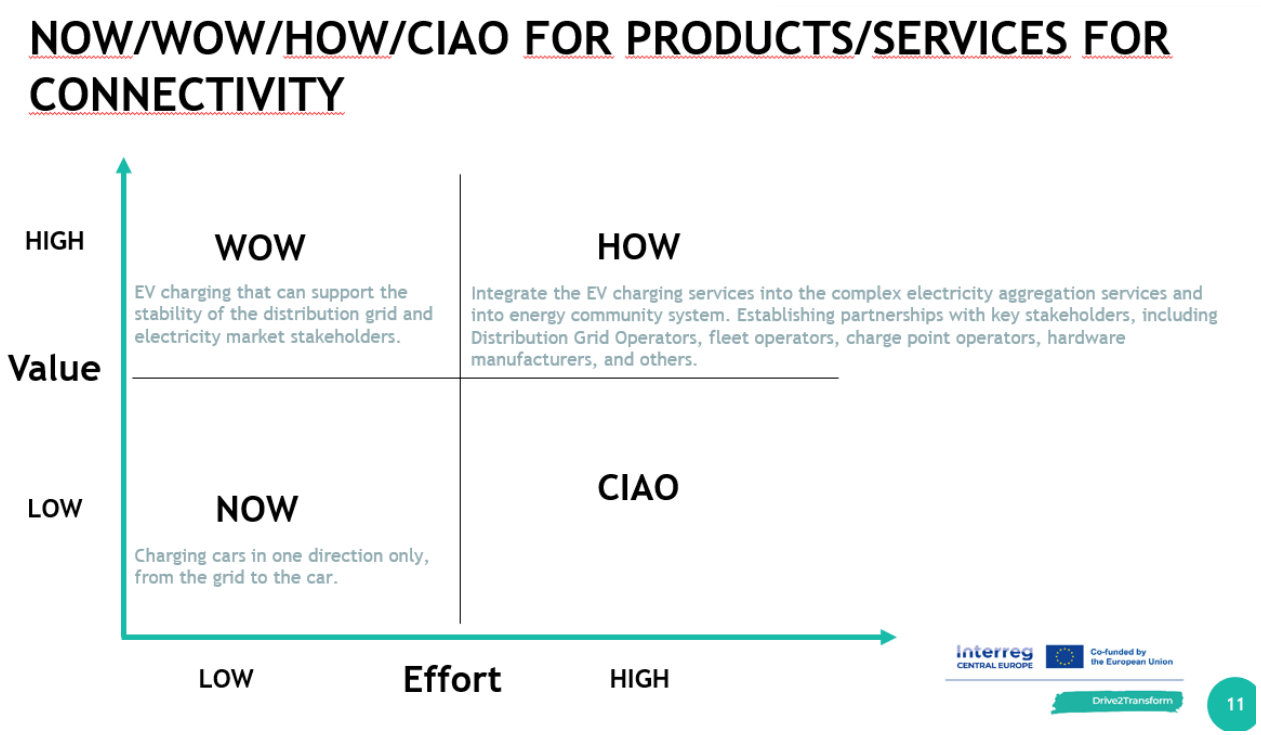


Figure 67: Now/Wow/How/Ciao for Connectivity

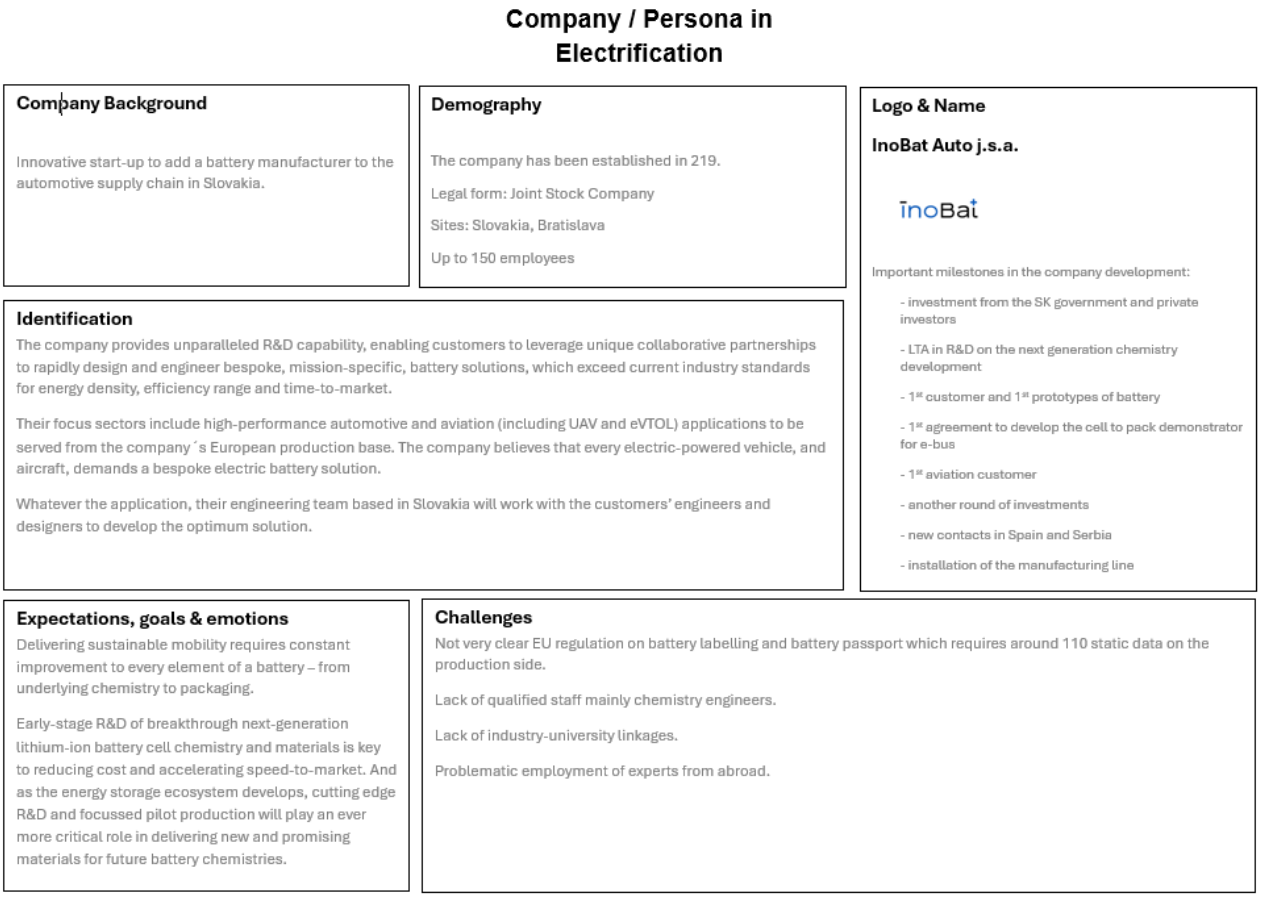


Figure 68: Persona for Electrification

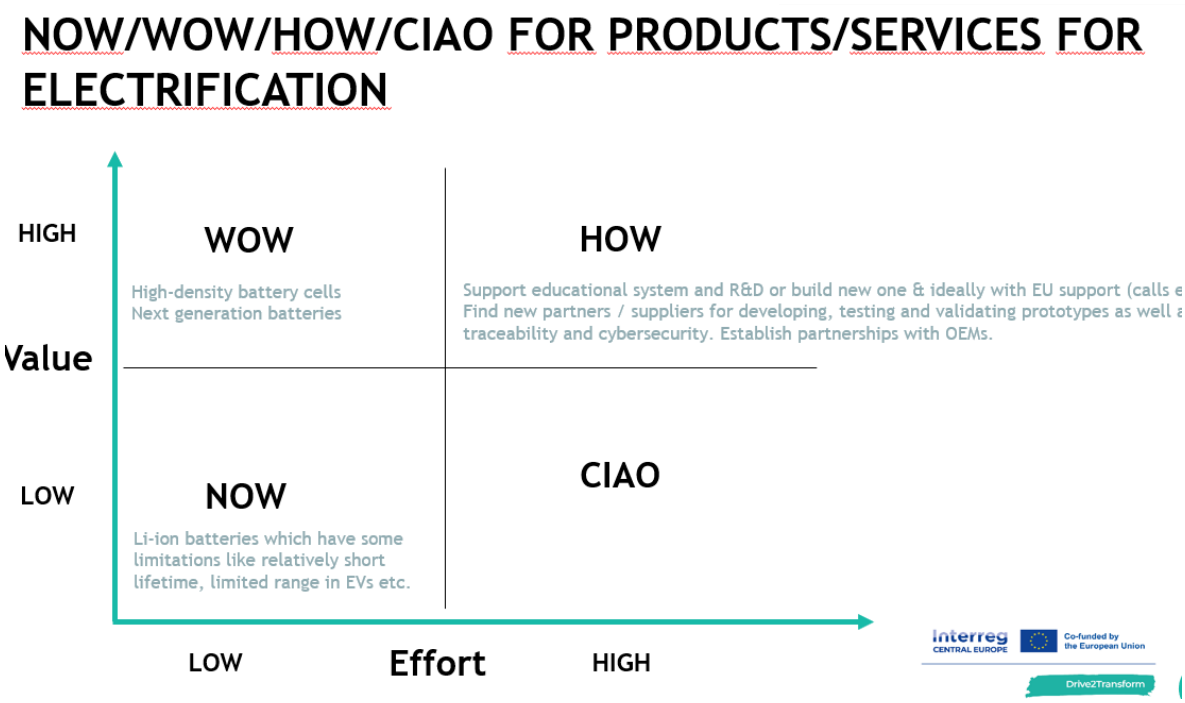


Figure 69: Now/Wow/How/Ciao for Electrification

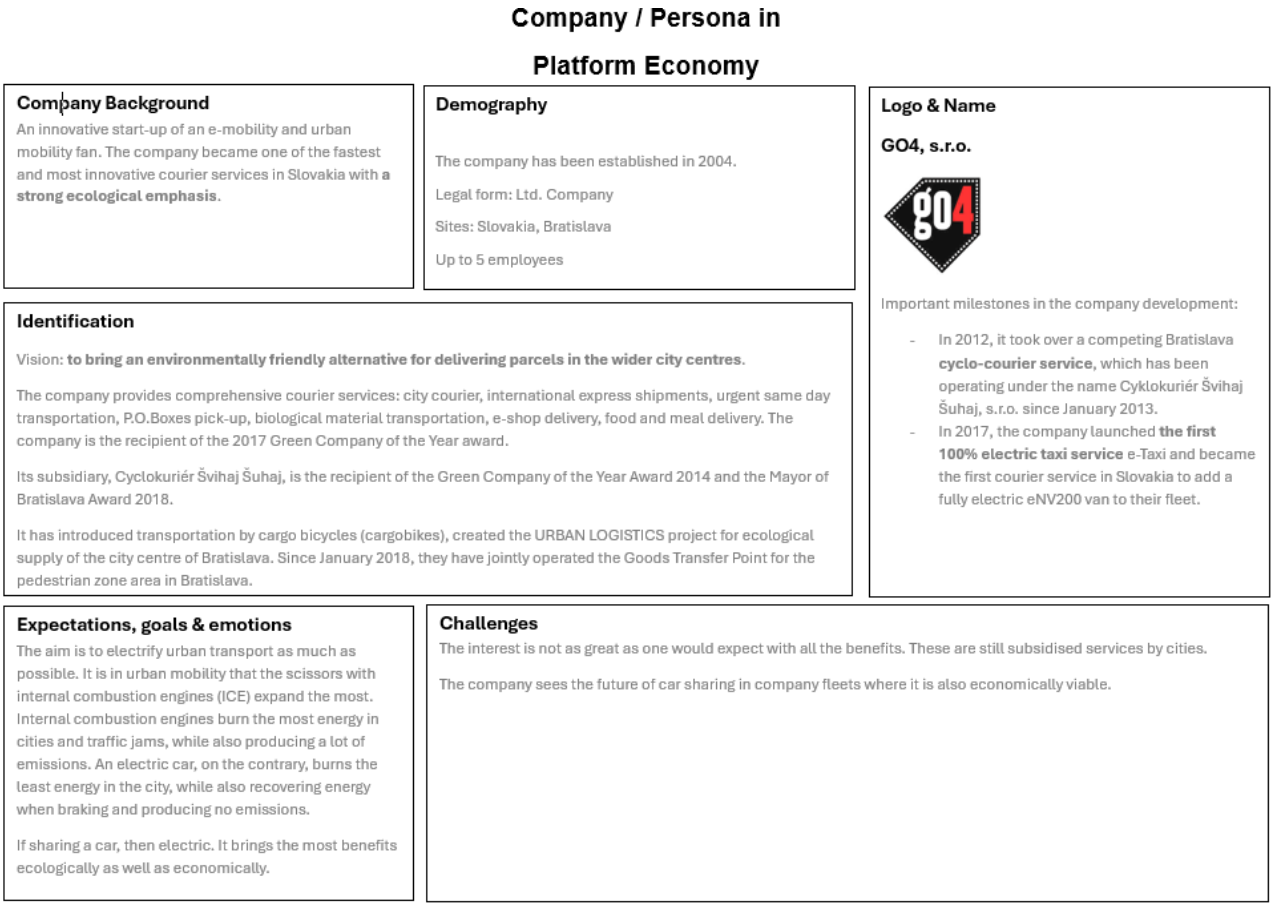


Figure 70: Persona for Platform Economy

Appendix 3: Scenarios & CANVAs of the Third Workshop per Consortium

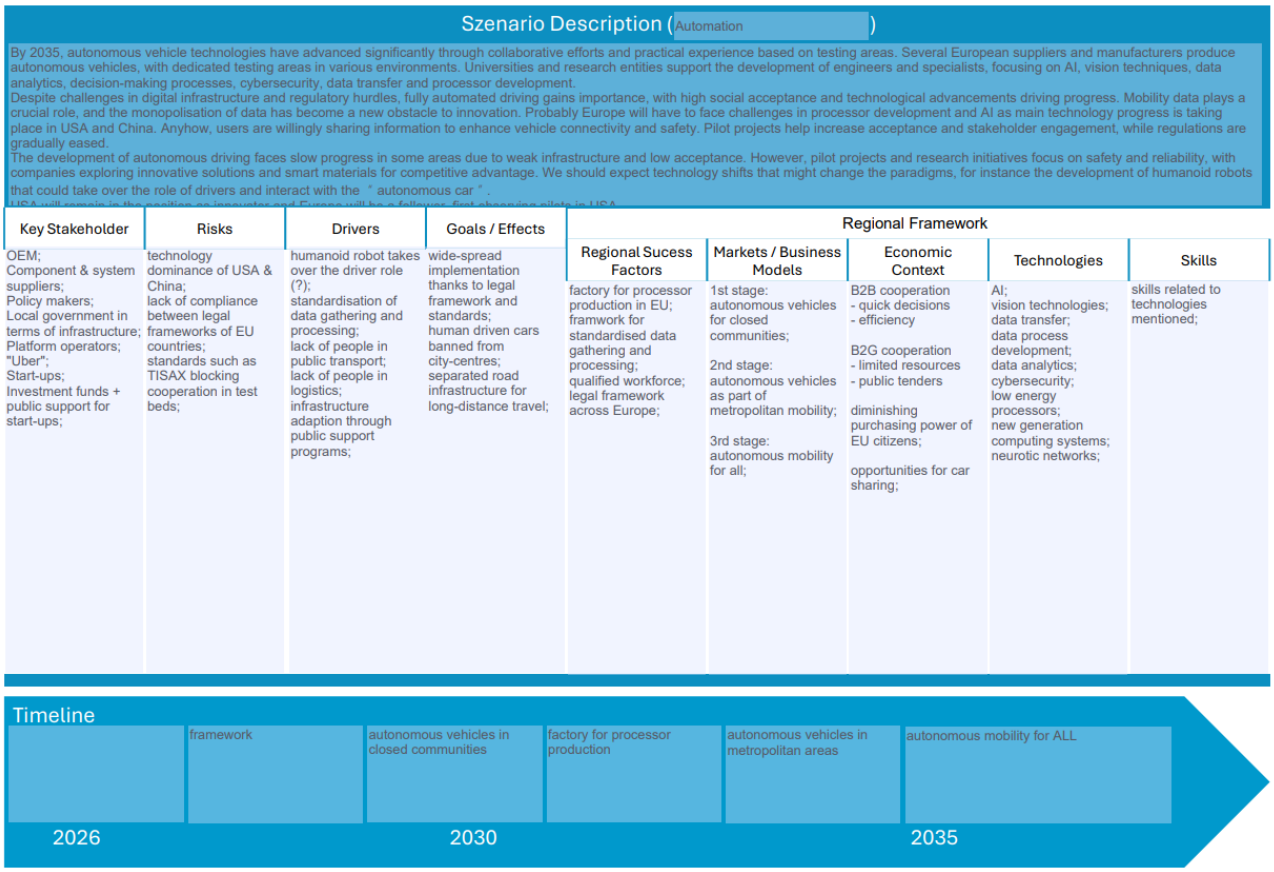


Figure 71: CANVA Automation

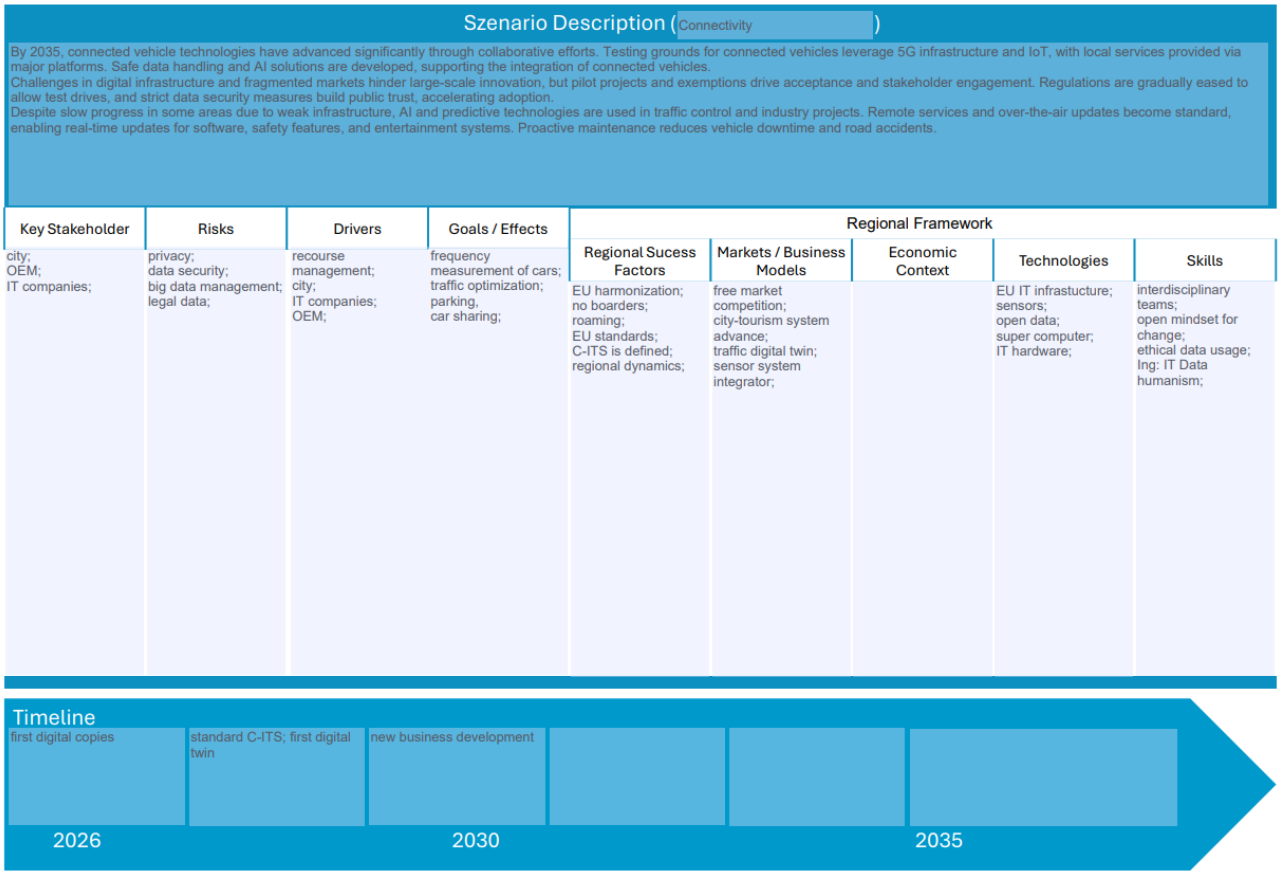


Figure 72: CANVA Connectivity

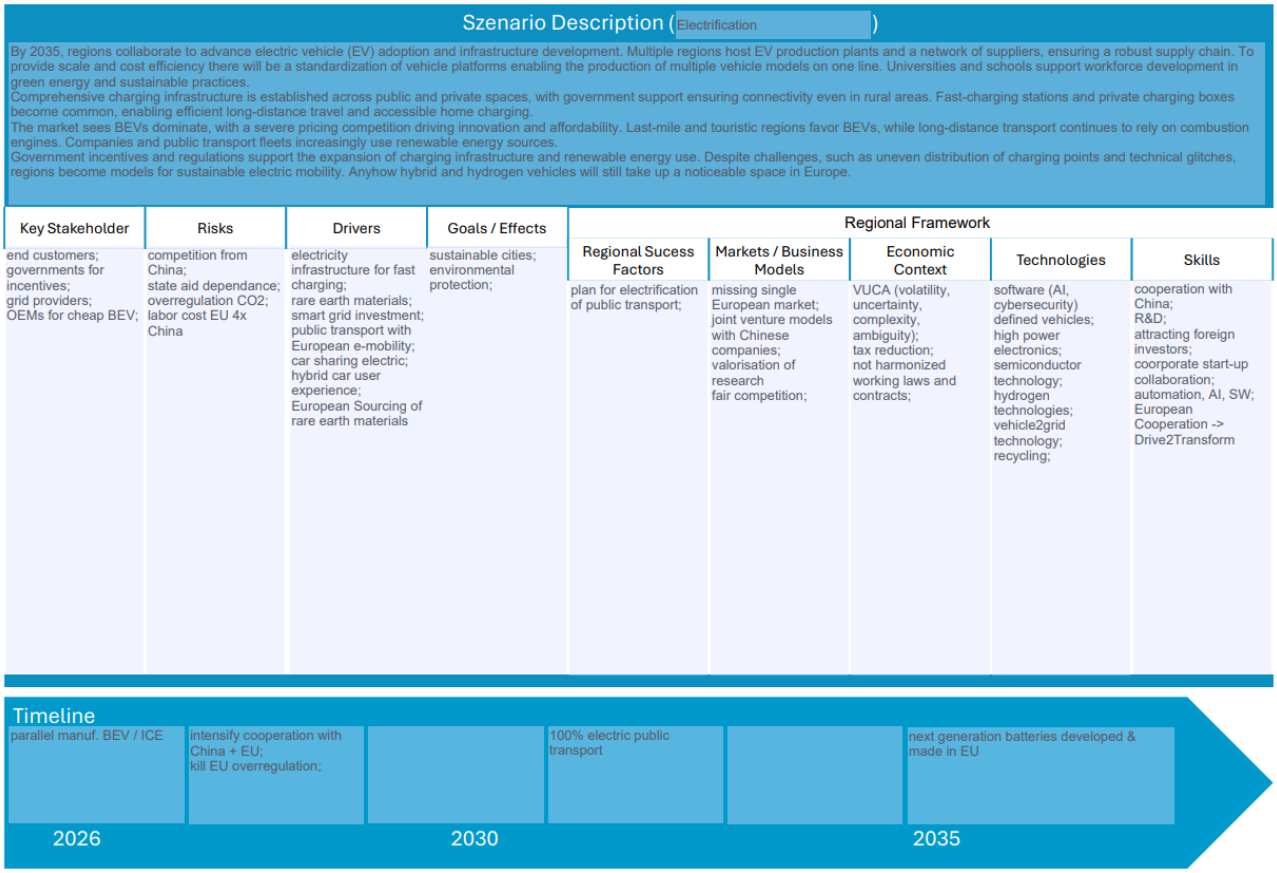


Figure 73: CANVA Electrification

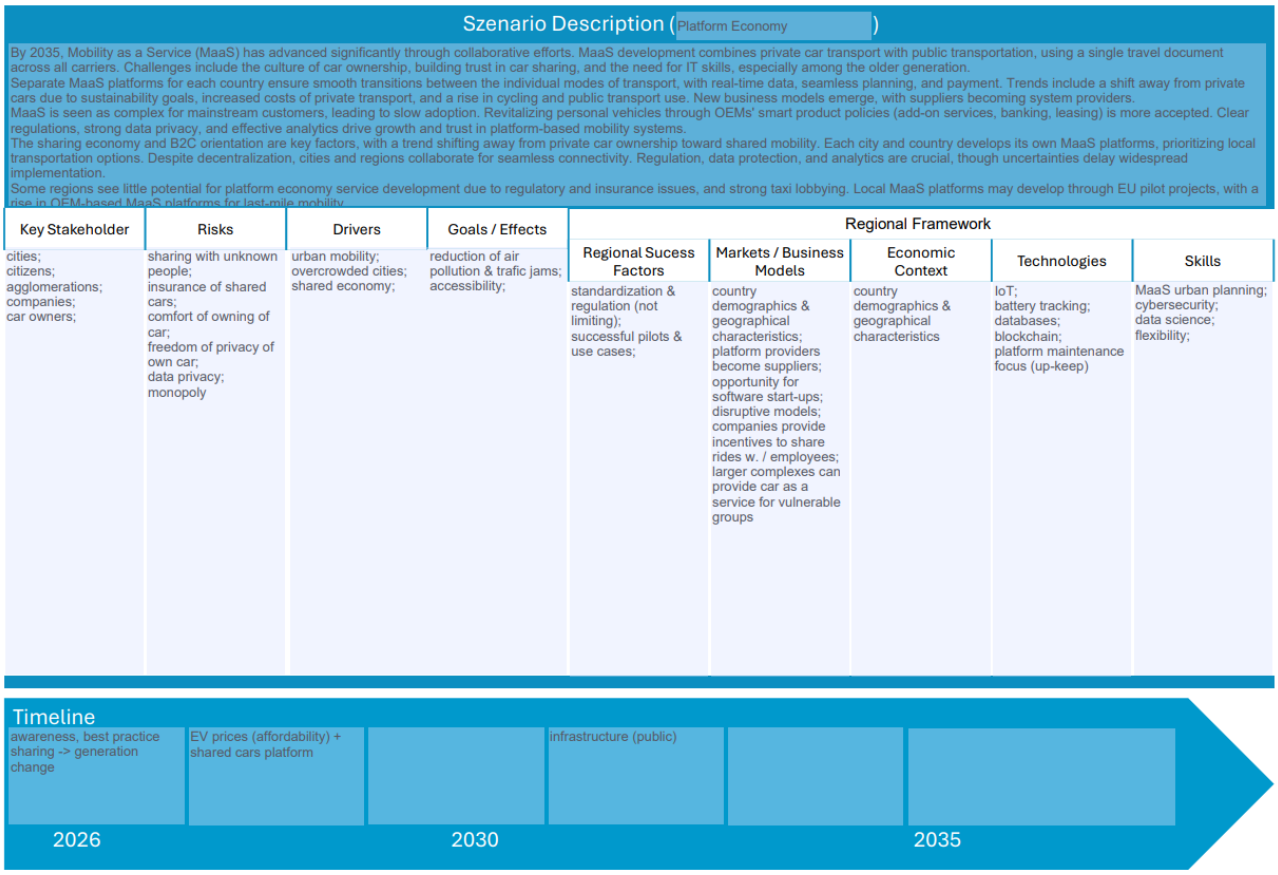


Figure 74: CANVA Platform Economy