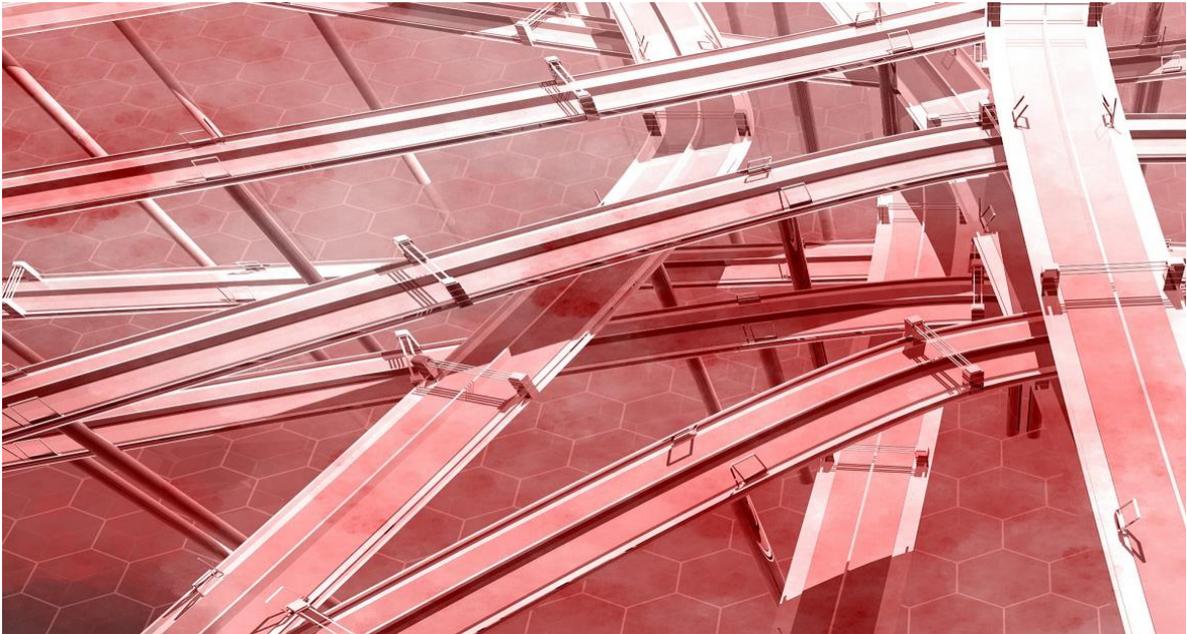


RECREATE
REinforce Competitiveness of REgionAI
Transport SMEs
PGI05275
Coventry Thematic Workshop & Study Visit
Report



Coventry University Enterprises Ltd

Revision history			
Version	Date	Modified by	Comments
0.1	22/09/2020	CUE Ltd	Draft
0.2	08/02/2021	All Partners	Review
1.0	19/02/2021	CUE Ltd	Final version

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Abbreviations

CAV: Connected and Autonomous Vehicles

GVA: Gross Added Value

OEM: Original Equipment Manufacturers

OLEV: Office for Low Emission Vehicles

SME: Small Medium Enterprises

1. Introduction

On 16th and 21st September 2020, a Thematic Workshop and Study Visit online have been organised by the Lead Partner Coventry University Enterprises Ltd (CUE Ltd). A total of 24 people participated to the online sessions between representatives of the four Project Partner organisations and their stakeholders from academic, business and government sectors.

2. Thematic Workshop – Day 1

The first day of the Thematic Workshop took place on 16th September and it focused on Financing Innovation.

The workshop started with a presentation from the Lead Partner about **CUE Ltd services** and its role in the region, followed by an overview of the **RECREATE project**. This showed its aim and specific objectives, the Regions and organisations involved, the main expected results and outputs, as well as the stakeholders' role.

The following three sessions aimed at showing the characteristics of the West Midlands region, the Transport sector and the several forms of funding available. David Hope, Programme Development Manager at Coventry City Council, delivered a presentation on **Financing Transport Innovation** with particular focus on the West Midlands. The Region is characterised by the following elements:

- It has a population of 5.7m people.
- The Transport technologies vital to the region's economy are automotive, aerospace and rail manufacturing.
- It has a world class vehicle research and manufacturing cluster with 35 OEMs, £3.2bn GVA (25% UK overall automotive GVA), 50,000 jobs (one third UK unemployment in sector), one third of all cars produced in UK and 40% of all UK cars exported annually.
- The Aerospace industry has £305m GVA and 4,500 jobs.
- The Rail industry has £32m GVA and 470 jobs.
- The Logistics sector has £4.7bn GVA and 123,000 jobs.

The Region has a very high level of Transport Innovation. It is at the forefront of electric vehicle development with big investments in this sector, such as:

- UKBIC £130m public investment in battery manufacturing;
- Geely £300m investment in London EV Company Limited for electric taxis;
- Jaguar Land Rover £500m Government Loan Guarantee;
- Electric vehicle charging OLEV & private investment.

There's a lot of research in Connected & Autonomous Vehicles (e.g., £20m Government funds on the UK's first Future Mobility Area) and in Very Light Rail (e.g., £15m public funds on the first route proposed for Coventry) and it is the UK's first 5G Test Bed with (£25m Government investment). Moreover, it has a strong innovation ecosystem with several institutions operating in the Region such as MIRA Technology Park, the National Transport Design Centre, the National Automotive Innovation Centre, the Aston Institute for Urban Technology and Environment, and many others.

Despite these very positive features, the Region still needs intervention. There is not much innovation activity in businesses: 94% of R&D investment takes place in OEMs, but the majority of SMEs don't engage with knowledge base. Just 14.7% Coventry and Warwickshire businesses are fast growing, a percentage that is lower than 16% national average. Moreover, there is a problem of skills: leadership and management skills are less proficient in UK firms; also, 21% of UK adults lack basic digital skills.

In terms of funding, the Region benefited of the ERDF Funds for 2014-2020. Coventry and Warwickshire allocated £61.18m according to the following priorities:

- Priority 1 – Innovation and R&D £18.35m
- Priority 2 – ICT £7.25m
- Priority 3 – SME Competitiveness £23.87m
- Priority 4 – Low Carbon £11.69m

The majority of the funding has been managed through integrated partnership programmes involving Local Authorities, Universities, Chambers, Growth Hubs in a combination of grants and non-financial support with some sector-specific innovation schemes led by universities. The Midlands Engine Investment Fund (MEIF), supported by ERDF, has also played an important role by providing commercially focussed finance through Small Business Loans, Debt Finance, Proof of concept and Equity Finance funds to transform the finance landscape for smaller businesses in the Midlands. They provide over £250m of investment to boost small and medium business (SME) growth in the Midlands (including transport SMEs).

Some examples of ERDF projects in the Region are:

- BLOK Container Systems: R&D in new lifting equipment for maritime sector, funded by CW Innovation Programme grant & Innovate UK;
- Oxford Vision & Sensor Technology: development of a new robot using IoT data for automotive sector, funded by CW Innovation Programme grant & Warwick University;
- Enable ID – intelligent mobility provider: development of new IoT based travel information platform, funded by CW Innovation Programme grant;
- Baro: design & trials of autonomous compact vehicle, funded though CW Innovation Programme grant and with MIRA & Warwickshire Council Inward Investment support.

ERDF has funded a variety of sectors in the UK, including transport. Because of Brexit, now the government is looking at the business support and funding streams landscapes after the end of the programming period 2014-20, however it is expected that the Covid pandemic will delay timing and change priorities. The challenges in the region are not new and most probably the government will provide funding around them, but – at the moment – both the level of funding and the priorities set are not clear, in this ever-evolving Covid recovery scenario. Currently, the situation remains very uncertain.

The Region benefited also from national R&D Funds. For example, UK Research & Innovation is a national funding body that brings together Research Councils & Innovate UK and promotes collaborative R&D and innovation though national competitions. There are R&D competitions targeting all sectors and delivering Smart Grants and Innovation Loans. Some competitions are sector specific like the Industrial Strategy Challenge Fund (driverless cars, batteries) and the Automotive Transformation Fund.

There are also UK Government Capital Funds like for example the programmes delivered by the Department for Transport (DfT), the West Midlands Combined Authority and the Local Enterprise Partnerships (LEPs).

The second session was delivered by Sunil Budhdeo, Transport Innovation Manager at Coventry City Council and was dedicated to **Urban Development for Intelligent Mobility and Innovation** with particular focus on the City of Coventry. The City benefited of a £16.6m investment for improvement of the city centre in preparation for Olympics 2012 (including ERDF, LEP, Innovate UK and DfT funds), during which a Restricted Parking Zone combined with a 20mph Zone has been introduced and high quality and innovative schemes have been used to design out speed (instead of traditional traffic calming techniques).

Coventry City Council – our Local Authority – has specific targets aimed at:

- Reducing congestion and pollution via effective traffic management;
- Creating a global centre for testbeds, pilots and trials of new technologies;
- Developing operational demonstration of CAVs ahead of the 2022 Commonwealth Games;
- Introducing attractive automated ridesharing service;
- Meeting new demands for responsive transport which will link seamlessly to public transport;
- Creating a reliable, safe and value for money alternative to private car ownership;
- Developing a cluster of top universities attracting talent in manufacturing, engineering, science and tech.

In general, the Council's objective is to avoid Coventry to look like a "concrete jungle". Hence, specific objectives include:

- Improving the urban environment
- Increasing the effectiveness of traffic management in Coventry, leading to reduced congestion, pollution and associated economic / social benefits
- Encouraging behavioural change
- Improving experience for citizens and tourists (e.g., Wayfinding Totems)
- Providing an enhanced test bed environment for future development of vehicle technologies and transport systems

The results achieved by the City were presented, together with some specific projects such as:

- Modum (Prototype to implement an optimisation approach to traffic management)
- Hope (Trip planning, fare calculation, Smart Ticketing)
- UK Autodrive (test autonomous vehicles and light speed pods in a live environment in various conditions)
- Appyparking (Kerbside Management)
- Hozah (automated parking payment system)
- Electric Vehicle Charging Points
- Coventry Very Light Rail

All these projects represent some of the reasons behind Coventry and the West Midlands being recognised as a LIVING LAB, open for business and innovative R&D.

The last session was delivered by Andrew Page, Future Mobility Lead at Transport for West Midlands and was dedicated to **Transport innovation projects in the West Midlands**. Transport for West Midlands, part of the West Midlands Combined Authority, is responsible for making transport 'happen'. They drive inclusive economic growth in the region and enable a healthier, happier, better connected region through improving transport.

Despite the longest urban bus network in Europe, 63% of the journeys are made by car; also, car occupancy in the region is low, while utilisation is high. The pandemic however had an impact on people behaviour related to travel as well as on the economy of the region as it relies on automotive, aerospace and construction sectors which will be hit in the short-term.

Some important local projects were shown, such as:

- ConVEx, a UK project involving central government, academia, private sector and local authority to create a data exchange facility focused on mobility;
- Connected and Automated Mobility (CAM) that has access to a uniquely diverse, public physical test environment with smart monitoring, the latest wireless connectivity and a complete support network;
- West Midlands 5G that will manage a number of projects to speed up the launch of 5G networks and test, prove and scale up new 5G services – for local people, public services and businesses;
- Alternative Fuel Initiatives (Park and Charge, Bus on Route Charging, Charge on the go, Hydrogen Rail).

3. Study Visit – Day 2

On 21st September a Study Visit took place to see Good Practices in the local area through online presentations.

The first Good Practice was **Horiba Mira** (www.horiba-mira.com), a global provider of pioneering engineering, research and test services to the automotive, defence, aerospace and rail sectors. They provide comprehensive support by working in close collaboration with vehicle manufacturers and suppliers around the world. Their services range from individual product tests to turnkey engineering design, development and build programmes. They are very flexible and can adapt to the needs of the company: they work with companies of all sizes that might need their facilities for a day or a year, in UK or abroad.

They have been established in 1946, they have over 600 people working for them globally and partnerships with several universities, including Coventry University. They are also keen to engage with the public sector, but it is not the current strategy. They are linked to some H2020 projects, UKTI projects, etc and they are open to ideas and suggestions. They are also linked to initiatives that test autonomous vehicles mainly in UK; regarding European projects, they need to have some form of funding, but they are keen to get involved.

They have 39 major test engineering facilities and over 35 companies on site. In 2018, they opened the Mira Technology Institute, centre of excellence for transport skills development with 15 training rooms and 3 workshops. They had initial funding for £9.5m.

It followed a presentation about the **National Transport Design Centre** (www.coventry.ac.uk/research/areas-of-research/institute-for-future-transport-and-cities/our-facilities/national-transport-design-centre/), a state-of-the-art facility, operating within Coventry University and designed to explore new areas of transport design research and find new ways to use existing equipment, as well as creating new technologies.

The Centre was established in May 2017 and operates in a cross-disciplinary manner, bringing together designers, Human Factors specialists, psychologists and technologists, to support research into a variety of fields: Human Factors in Future Transport, Design Ergonomics, Accessibility, Passenger Experience and Design, Driver, Bicycle and Pedestrian Simulation, Virtual and Mixed Reality, Inclusive design, Biomechanics and Comfort. It benefits from the university's access to experts across these disciplines through both doctoral research students and academic staff members.

Access to funds is a key factor. In the region, they had lot of support from Coventry City Council and projects with Innovate UK or Interreg programme.

Another important Good Practice is the **Technology Park** (www.coventry.ac.uk/business/facilities/technology-park/), a 20-acre site comprising 14 unique dedicated business facilities in the heart of Coventry, that encourages and supports the start-up and development of innovation-led, high-growth, knowledge-based businesses. Based within the Park, there's the **Simulation Centre** (www.thesimulationcentre.co.uk/), a leading edge, purpose built training facility, that can be used into many different training environments, including Business Continuity, Customer Services, Leadership and Management, Situational awareness, Negotiation, Assessment Centres, Environmental Impact Assessment, Oil and Gas, Humanitarian response, Community resilience, Health and safety, Auditing.

The final presentation was delivered by **Conigital** (<https://conigital.com>), the Connected Digital company. This is a deep tech, Artificial Intelligence driverless vehicle company with the mission of digitally connecting autonomous vehicles to empower mobility for all, working with major OEMs, private businesses, academic institutions and governmental organisations, both domestic and internationally.

4. Financing Innovation in Transport in the other RECREATE Regions

The UK Thematic Workshop was organised online, therefore it was difficult to include group discussions between the RECREATE partners and the stakeholders to compare how innovation is funded in the other Regions and Countries involved in the project. Therefore, a questionnaire was distributed to the attendees after the event to capture their views. The following questions were asked:

- Could any of the West Midlands Good Practices presented (HORIBA MIRA, NTDC, Simulation Centre, Techno Park, Conigital) be relevant/transferable to your Region/Country and why?
- Barriers: What are the obstacles that Small and Medium Enterprises face to obtain public and private funding in your Region/Country?

- Priorities & opportunities: What do you believe the priorities should be for the funding mechanisms in the Transport sector?
- Developing the right scheme: In your view, what are the key elements that a Small and Medium Enterprise support scheme should include?

Five of the attendees replied (two from Greece, two from Romania and one from Lithuania).

According to the ones from **Greece**, Coventry/UK is, in general, very advanced in transport innovation compared to South Aegean Region. All good practices presented were really interesting and, in many cases, impressive as they are innovative and modern ideas that promote sustainability and growth. On the other hand, they were all supported and funded from a mix of state, regional and private funds, at the moment not described in the available policy instruments. The Techno Park and Simulation Centre could be a transferrable practice if the government allows it.

The obstacles that Small and Medium Enterprises face to obtain public and private funding in Greece are:

- Great competition for limited available resources;
- Lack of expertise in detecting and utilizing all available financing schemes/mechanisms;
- Economic environment: after a long period of economic recession, private funds start to flow in investments related to innovative and sustainable projects such as electromobility, mobility as a service, etc., but bureaucracy is still a problem as well the lack of information for the available funds.

The priorities for the funding mechanisms in the Transport sector should be:

- Infrastructure that can support the new technologies;
- Targeting local SMEs as well as public sector;
- Encouraging networking among academia / business / local stakeholders;
- Maintaining the pillars of zero accidents / zero pollution / zero congestion as backbone of the schemes;
- Targeting awareness raising and behavioural change of community.

The key elements that a Small and Medium Enterprise support scheme should include are:

- Sustainable Innovation in the difficult economic environment of the region;
- Innovative services to tourism, main economic sector of the region;
- Support to economic and efficient transport of goods and people in an insular environment;
- Enhancement of innovation, cooperation, networking and flexibility.

According to the attendees from **Romania** who answered the questionnaire, all the Good Practices presented are relevant/transferrable to their Region/Country as they need such solutions like research and testing Centres, Technology parks for SMEs and start-ups. They need Centres for services and technologies development.

In particular, Conigital is a possible relevant example that could be transferable to the South-West Oltenia Region. The company business profile is a good example for the SMEs in the region to follow-up / guideline, having in view that more than 300 SMEs in the region are major players in the Transport-related sectors. The SMEs in the region will have opportunities to

adopt new business ideas/concepts from the example of Conigital in order to obtain grants for digitization for a competitive digital economy. This includes the following areas:

- Adopting digital technologies and tools that lead to business model innovation;
- Receiving support for electronic economic activities and networked economic processes;
- Setting-up digital innovation hubs, live labs, web entrepreneurs and start-ups in the field of ICT and B2B;
- Adopting digital technologies and tools that lead to business model innovation.

The Covid-19 pandemic determined the need of Transport-SMEs in the South-West Oltenia region to digitize the business, with all that this transformation involves (Internet of Things, 5G, Big data, artificial intelligence, strengthening teleworking and automation capabilities).

The obstacles that Small and Medium Enterprises face to obtain public and private funding in Romania are the following:

- In many cases the SMEs are not prepared (on TRL schemes) for the calls.
- The private funding infrastructure in the Region/Country is not well developed.
- Lack of financial resources: from the commercial point of view most investments in transport SMEs sector are part of a broader category known as project financing. A project's viability is therefore closely connected with the valorisation of the future cash flow generated by the business project. There are some features specific to project financing in transport-related sectors that make the availability of resources more difficult. These are: Long Life-Cycle, Relatively Low Operating Costs, Need for Large Capacity Resources, Long Construction Period (2–7 Years). Finance resources for transport infrastructure projects can be divided as follows: Public Resources (State budget that are State transport infrastructure fund and Other government subsidies and grants; Non-budget public resources that are External subsidy funds and programmes, e.g., Regional Operational Programme etc.; Other alternative resources like loans from domestic banks, foreign commercial banks, export credit institutions, from international financial institutions). The transport SMEs have insufficient capacity to deliver the best products and services, in a time and cost-efficient manner, in order to preserve leadership and create new jobs, under the environmental and mobility restrictions. Transport SMEs have a critical role to overcome these obstacles as they are key players in the supply chains. SMEs are pivotal for delivering the innovations needed for greater sustainable and smarter mobility, better accessibility and logistics serving business and citizens, and thus higher economic growth, in a context where the majority of population lives in urban and urbanised areas. Transport SMEs have to develop new services, products, processes, technologies, systems and combinations thereof to contribute to transport sector progress.
- Gaps in Transport SMEs financing: the usual option for Transport SMEs entrepreneurs was to borrow money from their local banks. As the loans become too expensive, Transport SMEs tend to put their investment plans on hold until better economic times. This is detrimental to the economic growth and innovation. Transport SMEs need to broaden their horizon for financing and use new tools like crowdfunding and microfinance. Compared to larger companies, they are much more vulnerable to funding shortages due to the lack of capital buffers and resources, and the lack of internal diversification. Transport SMEs' loan applications are often rejected by their banks, leaving them more dependent on their own means or even causing financial distress. This financing difficulty reaches its peak during

financial crisis, as banks apply more restrictive credit requirements. Transport SMEs entrepreneurs should have strong commitment to improving financing situation. Business support associations, trade federations etc. should create a better entrepreneurial environment through education. Entrepreneurs should be engaged in learning and attending lecture series that are providing up-to-date information on financing sources and ways for entrepreneurs to access them. They should access platforms for crowdfunding, or attract angel investments (especially tailored to the Transport SMEs sector).

- Lack of qualified personnel: many Transport SMEs are reporting difficulty in recruiting their staff in general, and they are having more trouble finding skilled workers. The main reasons for having difficulty filling open jobs are: low number of applicants, lack of needed work experience, competition from other employers, shortage of technical skills, shortage of qualified candidates in local markets.
- Difficult collaboration with Public Authorities: in many occasions, the collaboration between Transport SMEs and public authorities is really difficult. Public authorities should be proactive in supporting the Transport SMEs by enabling them doing business in a free and stimulating ecosystem. Excessive bureaucracy imposes a disproportionate bureaucratic burden on Transport SMEs, creating both incentives and opportunities for bribery and corruption. This can manifest itself in the form of excessive or overly rigid administrative procedures, requirements for unnecessary licences, protracted decision-making processes involving multiple people or committees and a myriad of specific rules that slow down business operations. There is evidence of linkages between corruption and bureaucracy. Bureaucracy is a term for “excessive regulation or rigid conformity to formal rules that is considered redundant or bureaucratic and hinders or prevents action or decision-making”. Red tape generally involves the filling out of seemingly unnecessary paperwork, obtaining unnecessary licences, having multiple people or committees approve a decision and various low-level rules that make conducting SMEs’ business slower and more difficult. Bureaucracy in excess can lead to corruption. SMEs are more susceptible to bureaucratic corruption than larger companies due to their structure. Reduction of bureaucratic corruption of public authority officials is a major aim, and there is further potential to reduce corruption chances by further decreasing the interaction between public officials and businesses. The authorities should respect transparency and accountability.

The priorities for the funding mechanisms in the Transport sector should be:

- Partnerships between SMEs and R&D entities based on real TRL schemes and funding calls.
- Focusing on real needs.
- Innovative approach – SMEs have to think big: small businesses play a key role in ensuring economic growth, job creation and social integration. Under the difficulties of the pandemic, SMEs have to be more ambitious in order to survive and grow. One way to foster this is to explicitly identify ambition as a key criterion for SME support in all EU countries, thereby enabling the most promising companies to reach their potential.
- SMEs’ staff talent and diversity focus: in today’s challenging times, building SME resilience through capacity development is vital. This could be done through (digital) talent matching platforms that connect businesses with specific sets of skills in EU countries.
- SMEs should mind the innovation gap: not all SMEs are equally innovative and instruments for innovation support should acknowledge this. In modest innovator regions, the focus

should be on stimulating the development of new innovative firms. The selection mechanism for public funding should enable an optimal level of competition.

- SMEs focus on the ecosystem: the power of large firms to help SMEs to scale up must not be overlooked. Innovation support organisations should promote this ecosystem dimension in their innovation support models and create opportunities for knowledge-sharing and cross-pollination of ideas.
- Bring in private sector funding: in order to overcome the funding gap, new instruments and cooperation structures for raising matched funding from support actors from the public and private sector should be launched to increase investment capacities.
- Keep the SMEs' predictable plan for development: certainty and predictability are key in helping SMEs to build economies of scale, innovate and limit risks. A stable funding mechanism will play a key role in ensuring SME access to the long-term funding for innovation investments.
- Skill up the support ecosystem: SMEs have to identify their needs as well as develop training with the help of innovation support organisations. There seems to be now an unprecedented opportunity to create a better, stronger system, which will support SMEs to innovate their way out of this crisis.

The key elements that a Small and Medium Enterprise support scheme should include are:

- The call to be address when necessary.
- The implementation period to be a support for the SMEs.
- To be innovative and support Research, Development and Innovation (RD&I) in SMEs as an engine for development: RD&I is essential for SMEs to keep the proper standard and maximise their growth potential through the development of innovative products and solutions. The scheme has to support various actions falling under the Region's Smart Specialisation Strategy and Areas in the following areas: Transport systems, Industrial engineering, Materials engineering, Agro-food, Health and wellness, ITC and Digitalization, Green economy / circular economy (cross-cutting areas).
- To support digitalisation of SMEs: from digital start packs to business grants, to subsidised digital project management services, and even digital plans for various industries, there are sufficient resources to assist SMEs to be more robust digitally.
- To support technical training programme for SMEs in order to improve the skills of SMEs workforce to allow companies to adapt to the changing environment amidst CoVid-19.
- To support SMEs in becoming leaders on the market / in the ecosystem through specific training courses in leadership and winning strategies in their business sector/value chain.
- To support SMEs in marketing, publicity and internationalisation: the aim is to make the SMEs highly visible and remarkable in their business sector and value chain / market segment, also preparing the SMEs entering the international value chains and production systems.

According to the attendee from **Lithuania** who replied to the questionnaire, most of the Good Practices have potential to be interesting for their Country as they do not have any Technology parks or other research infrastructure which would be directly dedicated to transport sector. In Lithuania, there is a presence of mostly research infrastructure and support measures dedicated to SMEs in general, and transport related companies have to compete with other sectors.

Regarding the obstacles that Small and Medium Enterprises face to obtain public and private funding in Lithuania, even though transport sector is one of the priorities of Lithuanian Smart specialization strategy, S3 priorities are defined very broadly and transport related companies find it difficult to compete for the finances with other sectors. In addition, companies applying for R&D funding find it difficult to describe why their project is related to R&D activities. Last but not least, businesses also note that there is too much paper work in order to get financing while financing intensity in some instances is too low.

In terms of the priorities for the funding mechanisms, the Transport sector is influenced by mega trends, including sustainability, digitisation, autonomous vehicles, electrification, MaaS, transport safety and others. As a result, in order to be competitive and keep up with future trends, financial instruments should be focused on the activities which would allow transport related companies to develop and implement new products related to these trends.

The key elements that a Small and Medium Enterprise support scheme should include are:

- Be easy to apply, with little bureaucracy (one stop-shop principle);
- Funding intensity of at least 75%;
- The whole innovation cycle should be funded (all TRL levels).