



ADVANCED SERVICES AND TELEMATICS:

IMPROVING PERFORMANCE AND
PROFITABILITY ACROSS THE ROAD
TRANSPORT INDUSTRY



EXECUTIVE SUMMARY

Advanced services and telematics have the potential to transform the road transport industry. But to date the various benefits these innovations create are not widely captured across the industry. This report identifies the factors that hold back the transformative impact of advanced services and telematics and maps out concrete suggestions to extend their benefits to the wider road transport industry. The report draws on the expert insights from a wide range of industry stakeholders that were systematically integrated to create a balanced industry-level perspective.

The report finds that, while advanced services and telematics create clear and tangible value, a diverse range of factors are still standing in the way of capturing the full potential for the wider road transport industry. Aspects that were found to limit the wider benefit capture are linked to the industry culture, uncertainties of the return of investment, absence of technology standards and limited resources availability. The report makes detailed suggestions to help the industry to capture the full potential of advanced services and telematics. These include:

- A focus on recruiting and training the younger generation across all roles in the organisations to develop an integrated 'digital vision' for road transport
 - Identify and promote the best management practices to fully utilize the potential benefits advanced services and telematics create for the organisation
 - Determine the impact advanced service and telematics create for the environment, society and the economy to attract key governmental support in order to promote its further development
 - Work towards common standards for data and use of parameters to simplify integration and innovation across the industry.
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INTRODUCTION

For some time, new service-based business models and innovative telematics solutions have been adopted throughout the road transport industry. Several OEM's are now offering advanced services where their core products, such as trucks, are provided in combination with full service contracts. A large variety of telematics solutions have come on the market enabling OEM's to meet their service obligations and supporting operators in managing the performance of their fleets. Available data shows how these new service models and technology solutions create substantial cost-savings and performance implications. There is wide agreement that these innovations are key to enhancing the productivity and performance of the road transport industry.

But although we can see how these innovations help individual firms increase their performance and profitability, the overall rate of adoption of these innovations across the industry is still limited. The service model- and technology-innovations have the potential to transform the road transport industry but their full benefits have not yet been realized.

This report summarises the preliminary findings of a longitudinal investigation on the 'barriers to value creation from advanced services and telematics in the UK Road Haulage Industry' conducted by the Advanced Services Group at Aston University. For this report, the views of senior executives of operators, vehicle- and component-manufacturers, dealerships, fleet management companies, and technology providers operating in the UK road transport industry were systematically identified and collated.

The report identifies the factors that limit the value creation opportunities of advanced services and telematics for individual stakeholders and the wider road transport industry. The report also provides detailed recommendations for addressing these value creation barriers and identifies toolkits and initiatives to extend the value creation opportunities of these innovations across the wider industry. We invite all parties that form part of the road transport industry to work with us to develop and participate in further developing and promoting these critical tools and initiatives.

THE CHALLENGES OF THE ROAD TRANSPORT INDUSTRY

The road transport industry is widely recognized as the backbone of the UK economy. 68% of domestic freight goods are moved by the road transport industry¹ creating an annual turnover of more than 23 billion pounds². While the productivity of the UK road transport sector is largely in line with its European neighbours any efficiency increase would create a recognizable impact on the national GDP³. Nevertheless, the road transport industry faces a number of critical challenges. The low profitability across its stakeholders is a strong indicator of the industry difficulties. Profit margins of operators are at 3%⁴, dealerships are at 1-1.5% and leading manufacturers currently see an average 6% margin⁵⁶. The driver shortage is considered a looming time-bomb with alarming implications for the industry. Increasing congestion on UK roads threatens the reliable operation of the industry. But the challenges for the road transport industry are even more fundamental. Several commentators characterise the industry as highly fragmented with a lack of integrative initiatives and collaborations between industry partners.

It is clear that there is a critical need for the industry to engage in innovation and change. It is against this backdrop that this report focuses on advanced services and telematics and their potential to benefit the performance and profitability of the road transport industry.



ADVANCED SERVICES AND TELEMATICS: TWO LINKED INNOVATIONS

Advanced services and telematics offer far-reaching opportunities for advancing the road-transport industry and improving its overall performance and profitability.

SERVITIZATION AND ADVANCED SERVICES

Advanced services describe the emerging development among manufacturers to offer their product and the services that support the use of the product as a single solution⁷. This shift from being a manufacturer of products to becoming a service provider is specified as servitization. More and more examples from the road-transport industry show how manufacturers servitize and start to offer their product as a platform for delivering their expertise and capability as a business critical advanced service to their customers (e.g. trucks as a service, tires as a service).

The adoption of advanced services blurs the boundary between manufacturers and service providers in the road-transport industry. Advanced services often involve long-term contracts and pay-per-use models, as well as a sharing of risk and reward between service user and provider. Service users benefit from guaranteed availability levels of the product and a commitment to helping reduce the customer's operating costs. As an example, MAN's service packages have helped operators reduce their fuel cost on average by 10% and guarantees service costs for 1 million kilometres.

TELEMATICS

Telematics systems have become a core feature among many leading operators. Telematics provides operators with access to core operational and performance data and hereby facilitates the digital integration of the truck into the operator's business processes. Telematics data is used to target the driver education and creates the basis for reward programs that incentivise cost-effective vehicle operations. Operators who effectively use telematics can obtain fuel-savings of 10% and overall cost-savings of 4-5000£ per annum⁸. For the operators the access to telematics data and the ability to use this data effectively creates substantial opportunities for cost-savings and business innovation.

The benefits of telematics are not limited to the individual operator but create industry-wide implications. It enables an exchange of data between operators, technology providers and manufacturers which will soon involve other industry-stakeholders including customers, DVSA and insurance providers. A high rate of telematics adoption is critical for enhancing the profitability and performance of the road-transport industry and is essential for the necessary integration of the industry stakeholders.

The adoption of telematics and the shift towards advanced services go hand-in-hand. Real-time insights into the product performance is essential for advanced service providers to achieve their service commitment. The detailed operational insights help the OEM's leverage their expertise and help the operators to analyse their performance data and advice on improvement strategies. The future development of advanced services in the road transport industry is dependent on advances in telematics and the better understanding of the benefits telematics creates. But we are concerned that the rate of adoption of these business innovations does not seem to grow as quickly as expected⁹ and that the potential value these innovations create is not as widely captured.

THE STUDY

In order to support the road transport industry in capturing the profitability and performance opportunities of advanced services and telematics we have carried out a two-stage research process:

- The **first stage** focused on identifying the barriers to creating benefits from telematics and advanced services.
- The **second stage** focused on developing concrete recommendations to overcome these barriers.

STAGE 1: THE BARRIERS

To identify the factors that limit the benefits from advanced services and telematics we held a workshop involving 17 representatives from across the road-transport industry. A systematic guided process was used to capture and integrate the diverse insights on the barriers for value creation and identify their perceived importance and urgency for the road-transport industry.

1. ORGANISATIONAL AND INDUSTRY CULTURE AS BARRIER TO VALUE CREATION

Aspects of the organisational and industry culture were identified as the most commonly stated barrier to using the advanced services and telematics opportunities.

- A large number of organisations within the industry are **not sufficiently open to the changes** these new business innovations create. An operationally driven management culture with the focus on ‘the next load’ overshadows the strategic long-term opportunities telematics and advanced services create
- The **lack of young talent** entering the industry impedes the development of a vision that maps out the emerging digital opportunities
- Within the industry there is a huge variation in the **available digital skills** and digital expectations which makes it difficult to effectively promote telematics and its service opportunities
- Organisations within the road-transport have **engrained perceptions** of each other which are difficult to change. It is challenging for a company to extend its service portfolio and become recognized as a service provider within the industry.

2. LIMITED RESOURCE AVAILABILITY AS BARRIER TO VALUE CREATION

A shortage of the required resources was identified as another widely discussed barrier to fully utilizing the advanced services and telematics opportunities.

- The **competing financial resource demands** from other business areas restrict the necessary information technology investments required
- A **limited core analytical and information technology expertise** limits the value capture of the telematics data. The large diversity of processes used exceeds the detailed support that can be provided to satisfy the demand for expertise.

A large number of comments focused on the limited availability of expertise and financial resources but this limited resource availability was not ranked as a critical barrier that undermines the telematics and advanced services benefits. Although the limited resource availability is often mentioned it does not seem to be a barrier that is irresolvable.



3. UNCERTAINTY AS BARRIER TO VALUE CREATION

The uncertainty about the amount of benefits that can be captured from telematics and advanced services was identified as a factor that limits the adoption of these innovations.

- Organisations find it **difficult to assess the return** from investing in telematics. Operators have considerable experience and more detailed information about other investment opportunities which are therefore considered less risky
- Uncertainty about the return of investments and the **required operational implications** create a reluctance to a full engagement with the opportunities these innovations create.

The difficulties of judging the value creation potential becomes an important barrier to fully engage with these innovations.

4. MISSING STANDARDS AS BARRIER TO VALUE CREATION

The absence of widely accepted standards for the data and parameters used in telematics was identified as a barrier to capturing the full value from the telematics and advanced service opportunities.

- The lack of data standards **limits the use of telematics data across different applications** and the integration requires excessive 'manual' involvement
- Inconsistencies in the way certain **vehicle parameters or operations are measured** further restricts the flexibility in using the data and the ability to reliably interpret it
- The **level of access to vehicle data** across different makes and models creates difficulties for fully utilizing the data from mixed fleets.

The absence of standards for data and measurement was ranked as the second biggest barrier to fully capturing the value opportunities from telematics and advanced services. The missing standards create substantial difficulties in the day-to-day operations and constrain the innovative use of the data.

5. FURTHER BARRIERS TO VALUE CREATION

A range of further barriers to value creation were identified in this research.

- **Operational variety.** Organisations across the road-transport industry operate in very idiosyncratic ways. The large range of individual requirements limits the ability for effective integration and support provision
- **Range of available systems.** The range of available telematics platforms is overwhelming. An increasing confusion over system features and the difficulty of integrating these platforms delays the adoption and utilization of the technology
- **Lack of joined-up offering.** The range of organisations that offer service contracts and provide digital integration opportunities is very diverse (e.g. OEM, telematics provider, tyre manufacturer, insurance). The amount of touch-points and the lack of joined-up offerings limits the opportunities for benefiting from the service offerings available
- **Limited integration with road-transport customers.** While the road-transport industry itself is increasingly integrated, the integration with the customer is still very limited (e.g. smart billing). The effective integration of the service and telematics innovations with the customer would extend the value proposition.

Telematics and advanced services offer substantial opportunities for the road-transport industry. However, different factors limit the extent to which these opportunities are used across the wider industry. Ensuring that these opportunities are widely utilized is critical to improving the profitability and performance of the road transport industry as a whole.

STAGE 2: OVERCOMING THE VALUE CREATION BARRIERS

The second part of the study was focused on developing recommendations for important initiatives and critical research to better capture the opportunities advanced services and telematics offer. We followed a Delphie method where we iteratively consulted with 7 road transport industry experts and consolidated their recommendations for overcoming the main value creation barriers. The following recommendations have emerged.

1. ADDRESSING THE CULTURAL BARRIER

In order to capture the full opportunities advanced services and telematics create an organisational and industry culture is required that is open to digital innovation and experimentation. The following recommendations target the development of this culture change.

Attract younger generations into the road transport industry. The road transport industry is already focusing on the younger generations to address the imminent driver shortage. This effort needs to be extended to also get the young generation into the management roles where culture-change is initiated. The culture-change that is required to fully utilize the telematics and advanced service opportunities is tightly linked to the integration of the young generation across the different roles within the organisations.

Integrate telematics training across different roles. Formal training on the use as well as the business potential of telematics is required to grow the skills and expertise that is available across the industry. To develop these training resources the following questions need to be addressed:

- What aspects of telematics should form part of the specific training programmes?
- How to maintain forward looking training programmes in such a fast-moving field?
- Should the training be provided by technology providers (which are at the forefront of innovation) or the road transport associations (which provide a platform-independent perspective)?

Innovative management practices. The value creation opportunities of advanced services and telematics are dependent on the management practices operators use. As an example, sophisticated driver incentive systems and policies are required to ensure that driver performance data leads to fuel-saving driving practices. Several critical questions emerge:

- Which incentive systems create the most organizational value from telematics data?
How to introduce and adjust these incentive systems over time?
- Which management practices help to increase the acceptance and support of these innovations?
- How to create a fit between an organization's particular culture and the new management practices that are required?

Leadership role of the industry-representatives. Several comments call for the trade associations to lead and guide the industry through the necessary cultural change. But what are the specific initiatives the trade-associations should engage in to help the industry benefit from the advanced services and telematics opportunities as a whole?

- Which initiatives should the transport associations specifically focus on?
- What are the key leadership opportunities in this fast-moving space?



2. ADDRESSING THE RESOURCE CHALLENGE

In order to capture the full value creation opportunities of advanced services and telematics different investments in information technology and analytical skills are required. The following recommendations are focused on getting access to these required resources.

Reducing the investment requirements. A range of options are available to benefit from telematics. Some options require limited upfront investment. Advanced services contracts for example will regularly include the provision of telematics infrastructure and analytic advice. The wider adoption of advanced services will lead to an expansion of the telematics benefits across the industry. Also, telematics provided as a standard feature in the sale of new trucks will limit the additional investment requirements.

Attracting government support. The wide adoption of advanced services and telematics not only creates benefits for the individual organisation and the industry but the economy and society as a whole (e.g. reduced pollution, safer driving, and reduced congestion). The government should actively support the adoption of advanced services and telematics with targeted incentive schemes. However, more detailed evidence on the link between telematics and its societal benefits are required:

- How much does telematics reduce the environmental footprint of the road-transport industry?
- What is the empirical link between telematics and road-safety or congestion?

3. ADDRESSING THE ‘UNCERTAINTY’ BARRIER

Despite a wide range of clear value creation opportunities there is also uncertainty about the factors that limit the ability to fully utilize the opportunities. The following recommendations are focused on reducing the uncertainty of capturing the value:

Reducing the uncertainty. The range of benefits the users of advanced services and telematics can capture is dependent on the management processes and initiatives these users put in place. There should be a clear understanding of the management processes that are necessary to capture the range of potential benefits. To better guide the decision about using advanced services and telematics more detailed insights need to be established:

- What are the critical success factors and best practices for using telematics?
- What is the return of investment for telematics? And what factors determine the return of investment that can be achieved?
- How do different management strategies impact on the range of benefits that can be achieved with telematics?

The transfer of risk. The adoption of advanced services implies a transfer of operational risk from the operator to the OEM. There needs to be a clear understanding of the extent of risk that is being transferred and how the different contracts and their configurations impact on the risk transfer.

4. ADDRESSING THE ‘STANDARDS’ BARRIER

The lack of standards for data and measurements creates a barrier for the effective utilization of the data advanced services and telematics provide. Different recommendations have emerged for addressing the ‘standards’ barrier:

Standardization through government involvement. The government has a strong impact on the emergence of standards by acting as a stakeholder in the telematics field. The opportunity to directly integrate operational data with the DVSA to compile the OCRS already creates a clear incentive for the adoption of related data standards. Further integration opportunities with the government that create direct benefits for the road-transport-industry would encourage a further adoption of standards.

Standardization through a consortium. Other experts emphasised how a telematics consortium should serve as an effective platform for developing the necessary standards for the industry. Such a consortium should include manufacturers, operators, telematics providers and the relevant government agencies to balance out the diverse interests and integrate the different perspectives.

Flexibility over standards. Another view emphasises the need for flexibility as a critical source for value-creation. As organisations operate in very different ways and use telematics data for different purposes a focus on single standards could limit the innovation opportunities. Instead, telematics providers should offer more flexibility to allow users to maximize the benefits from the solutions they adopt. While the lack of standards clearly is a barrier to value creation there is little agreement on the direction the industry should take.

NEXT STEPS AND ABOUT THE AUTHORS

This report identifies the need for targeted initiatives and research to further expand the adoption of advanced services and telematics and support its value creation opportunities for the UK road transport industry. It is in the interest of all industry stakeholders to fully utilize the opportunities of advanced services and telematics to improve the performance and profitability across the road-transport industry.

The *Advanced Services Group* at Aston University is involved in researching how innovative service models and digital integration create substantial business opportunities. We have a standing research involvement with the road transport industry to explore the changes in the industry and determine the opportunities these changes create. We are very interested in further exploring the opportunities with the different members and stakeholders of the road transport industry.

ACCELERATING CHANGE

The *Advanced Services Group* at Aston University is developing a holistic approach to enable the road transport industry to capture the full value from advanced services and telematics. This is delivered through a formalised research and practice community, which focuses on:

- ⇒ identifying and analysing the best practices within and outside this industry
- ⇒ developing business performance measurement indexes specifically related to the use of advanced services and telematics
- ⇒ exploring the management practices required to capture the business value opportunities of advanced services and telematics.

THE RESEARCH TEAM

Situated at the heart of the West Midlands region, the *Advanced Services Group* at Aston University is the world's first and only centre dedicated entirely to the understanding and promotion of advanced services. It incorporates researchers, practitioners and industry leaders with a unique depth of knowledge and experience of the models, frameworks and practical requirements of this transformation process within organisations and industry. Its aims are to:

- ⇒ Undertake world-class, industry-based research
- ⇒ Spread awareness of advanced services throughout industry and develop the tools and techniques for its adoption
- ⇒ Develop leaders and practitioners across the globe with the skills to drive and implement business model transformation.



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