
Abstract

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Topic: Development of a national quality report for road traffic and transport

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The quality of road transport plays an important role not only for road safety and road users mobility, but also affects the life quality of the population because of the negative effects on the environment. Furthermore, it also impacts the development of economy of a region. So the development of sustainable mobility is the key goal of the road administration. At present, the road infrastructure shows many problems, that are clearly perceived by road users. Therefore, a large amount of financial resources should be invested for maintenance of the road infrastructure, while the funding is always shortcoming. In this case, the use of the financial resources should be more efficient and transparent.

Road management needs an instrument, which can check continuous by the quality of task delivery and the achievement of goals. According to the “quality improvement of road transportation” the “*Wissenschaftliche Beirat*” recommended in 2013 to the “*Bundesministerium für Verkehr und digitale Infrastruktur*” to use the “national quality report road” as a key instrument. The “national quality report road” should contain clear and brief indicators.

The target of this paper is to develop a concept of the “national quality report road” with comprehensible and descriptive indicators.

First of all, the road is analyzed as the subject of the “national quality report road”. The road transportation includes many products such as streets, street infrastructure etc. and services for example street cleaning, winter service, which quality will be evaluated in the quality report. After that, the different levels of road administration and their tasks are introduced, because they will be responsible for drawing up the “quality report road”. In addition, the conditions of road infrastructure are presented for example road surface conditions and road infrastructure funding. These are the existing conditions, that are used for the development of the “national quality report road”.

In order to cover all the relevant dimensions of the road transport, four dimensions are defined in this work:

- quality dimension: road safety, transport quality, environmental compatibility and economy
- participant-dimension: road users and transport authorities, society, etc.
- spatial dimension: the federal government, federal states and metropolitan region, etc.
- time dimension: data on monthly or annual basis

These dimensions cover all quality goals, requirement of participants and data resolutions. They will be used as the framework for the “national quality report road”.

In practice, business management is using indicators to measure the outcomes essentially. In Transportation there are also many indicator systems available. This work presents some of these indicator systems from global research organizations, such as the Transportation Research Board (TRB).

Indicators for evaluating road transportation are numerous, so it will be necessary to define some evaluation criteria and to make rules for the selection of appropriate indicators.

There are many examples of Performance Measurements with indicator systems in the national and international examples. But in German Transportation the system of performance measurement is not in use. There are some institutes or organizations, that publish the indicator reports, to evaluate quality of life or quality of traffic, for example “Sustainable Development in Germany – indicator report” and “States Index mobility”. There are international examples (e.g. in the USA and Japan) with a lot of experience in Performance Measurement. Besides monitoring and performance measures the results are associated with decision making and budget allocation. Their experiences can be used to develop the “national quality report road”.

Through these basic researches the concept “national quality report road” is developed. It is suitable not only on national level, but also the state and local level. The different levels of road administration are responsible for publishing their “quality report road”. The quality report should contain the four dimensions, that are previously defined. The spatial dimension separates highways, rural roads, country roads and urban or city streets. The participate-dimension is considered by defining indicators, especially the different road users, for example motorized traffic, cyclists or pedestrians.

Without data the indicators cannot be quantified. The summary of the existing data is therefore a part of this work. The existing database in the Transportation has been researched, for example from the Federal Statistical Office. The existing data as well as the data format e.g. PDF or HTML are presented in this work.

Finally, three examples have been presented, “national quality report road Germany”, “quality report highway State Hessen” and “quality report road Frankfurt am Main”. The three examples represent three road administrative levels, which are Bund, State and local Road Administration. These examples show some problems, which will appear while the “quality report road” is implemented. The general problems are unclear goals for the quality target fields and the missing data.

The data not available should be collected on the one hand. Although the money and time cost of the data collection must be considered. On the other hand, a common database should be built for the “quality report road”. So the different data sources can be allocated in a database, which will be convenient for the research and report. A workshop or department in BMVI or local road Administration should be built, which can manage the database and be responsible for the “quality report road”.