

Abstract of master thesis

Name: Lijia Zhu

Topic: Methods for Impact Assessment of Intelligent Transportation Systems (ITS)

Adviser: Prof. Dr.-Ing. Manfred Boltze

Dr.-Ing. Philip Krüger

Intelligent transportation systems (often referred to as ITS) comprises all the systems which create a connection among infrastructure, vehicles, and passengers' wireless devices by providing

timely, accurate road condition information and real-time relevant traveler information.

Intelligent transportation systems are an essential instrument for traffic management.

Germany is developing more intelligent transportation systems, such as line control systems with

variable message signs for speed control and routing advisories, and parking guidance systems.

However, the impacts of intelligent transportation systems are not evaluated or are vaguely evaluated after their applications in the real world. This is due to the lack of government requirements, support from organizations, and general instructions for conducting ITS impact evaluations in Germany. Because the evaluations are not being done or are vaguely being done,

the impacts of ITS are not being documented properly. As a consequence, a shortage of systematic

knowledge of the impacts of deployed intelligent transportation systems would impede the effectiveness of deployment in the future.

Generally speaking, it is important to know how the various ITS systems and applications perform

and what impacts they might produce if implemented locally. Therefore, it can be concluded that

the comprehensive and systematic impact evaluation of the intelligent transportation systems in

Germany is very necessary, since it offers significant evidence for achieving political and individual objectives and goals. Impact evaluations of ITS deployments appear to be absolutely

necessary for sustainable development and deployment of intelligent transportation systems in

Germany.

In order to support the impact evaluation of the intelligent transportation systems in Germany,

this thesis looks into some supporting measures that facilitate the development of impact evaluations, including government requirements, support from organizations, and existing Sources including general documents, which serve to conduct the impact evaluation through examining literature reviews in the United States, Finland, and the European Union. The evaluation areas of the impacts of the intelligent transportation systems in three study areas are

also discussed.

This paper produces a comparison of selected criteria that play the significant roles in the development process for impact evaluation among the US, Finland and the EU. Finally, this thesis

makes nine recommendations for Germany, which could contribute to a successful implementation of ITS impact evaluation.

Lijia Zhu

2. 2015