Session 2: Implementation Challenges

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"Mileage-Based User Fees Implementation Challenges"

Slide 2 – Implementation Challenges

Battelle is a technology R&D company. Yet, we see the biggest issue for MBUF as not whether the technology can be developed but why and how it is applied. Technology will clarify policy, but it will not directly change the public's perception of the need for MBUF. Technology can help overcome other concerns regarding MBUF, some of which we will discuss today:

- ease of enforcement and evasion,
- data security and integrity,
- assessment accuracy, reliability and consistency,
- technology interoperability,
- privacy,
- equity,
- flexibility and ubiquity,
- cost,
- ease of use, and
- disputability.

Slide 3 – What does the public want?

In general, the traveling public does not want a mileage tax or even a fuel tax; the public accepts the existing fuel tax because they generally unaware that they are paying it. If they are to accept MBUF, the Minnesota pilot showed that the public wants a system that is reliable, consistent, easy to use, ubiquitous, disputable and that protects privacy. Media tends to focus on privacy issues, but participants in the pilot generally accepted the technology once it was handed to them. This is because the perception of the technology is generally different from the reality of the technology.

Technology can help address the following challenges associated with mileage-based user fees:

Slide 4 – Reliability and Consistency

Reliability

The expected standard is that the technology in the vehicle works every time. The odometer is one readily available technology for metering road use that is reliable, but it can be tampered with. OBD-II technology is also reliable and easy to install, but it is also easy to remove. GPS is accurate but can be jammed and spoofed. There will need to be a variety of technologies supporting MBUF deployment, and the general rule is that the simpler the technology, the more likely it is to always work.

Consistency

The technology must charge consistently, meaning that a trip taken at the same time every day should cost the same every day. The London charging system uses boundary crossings to calculate fees and it is easy to predict what the charge will be. Fees could also be based on other travel aspects such as dwell time and engine run time, both of which can be influenced by congestion.

Slide 5 –Privacy

Privacy concerns need to be understood and addressed. In Minnesota, participants originally stated that they did not want to use any technology but opinions changed when they began using the smartphone technology that was selected for the study. Participants concerns about privacy were eased as they became familiar with the technology.

Slide 6 – Ease of Use

There are many ways that technology can make MBUF systems easier for the traveler to use. Technology can be imbedded in existing systems such as toll tags, smartphones, vehicle infotainment systems, or the OBD-II port. However, the perception of ease will vary from person to person.

Slide 7 – Disputability

Although technology can be quite accurate, the Minnesota pilot showed that people want to be able to dispute their fees, particularly when technology is involved. This desire to dispute technology is evidenced across the country in the case of red light cameras, in spite of the fact that the technology in use provides good evidence that a particular vehicle ran a red light.

Slide 8 – Ubiquity

The lesson from the tolling industry is that there is a need for non-proprietary communication protocols. The simpler the design, the more universal it will be.

Slide 9 – Highlights

In summary, technology can be used to mitigate many challenges, but the policy is currently the major barrier. No single technology can fit all situations. Policy makers and industry specialists need to establish system needs and public concerns, and then tailor technology solutions accordingly.