Presented to the
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by
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Putting Technology Into Practice – The Surface Transportation Perspective
The Technology Adoption Story

• How are we doing?
  • Some anecdotes from the past
  • Dissemination and support
• The existing climate for new technology
  • Within the agencies
  • Among the workforce
  • Through the research community
• Managing climate change
  • Some recipes for change
  • Conclusions
## Technology Adoption Anecdotes

<table>
<thead>
<tr>
<th>Project</th>
<th>Funding Source</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced traffic signal control</td>
<td>FHWA (UTCS, OPAC, ACS-Lite)</td>
<td>Most agencies continue to use 50 year old technology</td>
</tr>
<tr>
<td>Mobility Performance Measurement</td>
<td>NCHRP 20-7</td>
<td>Little awareness of the 12 measures defined and vetted</td>
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<tr>
<td>ITS Procurement</td>
<td>NCHRP 3-7</td>
<td>Interactive website no longer supported</td>
</tr>
<tr>
<td>Transportation Operations Framework</td>
<td>NCHRP 20-7</td>
<td>Database of available training unsupported</td>
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</tbody>
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There Are Also Some Successes

- Improved incident management
- Transit vehicle tracking and information systems
- LED signal heads
- Bluetooth traffic monitoring

Many successes are the result of industry initiatives rather than federally funded research.
The Overall Picture is Bleak

Widespread Adoption of New Technology (yrs)

Lead Organization Type

- Highway Agencies (operations, construction, pavements)
- CVO-Government Infrastructure
- CVO-On-board Equip.
- Automotive Telematics
- Toll Authorities
- Transit Agencies

Connected Vehicle
The Climate for New Technology – within Transportation Agencies

- Risk aversion due to fear of bad publicity
- Short attention span – maximum acceptable project life typically 2 to 4 years
- Absence of performance measurement precludes evaluation of success
The Climate for New Technology – Within the Workforce

- Few rewards for innovation
- Limited opportunities to learn about new technology (conferences, training, etc.)
- Champions are internally motivated (What happens to the program when the champion moves on?)
The Climate for New Technology – Within the Research Community

- Outreach has low priority and limited funding
- Research community is internally focused
- Reports rarely reach intended audience
- Limited support for research products (websites, databases, tools)
- Research tends to be conducted in the absence of overarching plans (result of a bottoms-up program)
Six Suggestions

1) Fund outreach at equivalent levels to research
   • Support for databases and websites
   • Support for training and peer-to-peer activities
2) Encourage private industry collaboration
3) Require implementation plans for all research
4) Develop the workforce (educate & support)
5) Change the DOT culture
6) Don’t fund research unless the audience is defined
Conclusion

We’re currently

“driving 21st-century cars on 20th-century roads with 19th century thinking”\(^1\)

TRB should assume responsibility for advancing the state-of-the-practice.

\(^1\) Tarnoff, Philip J., *The Road Ahead*, The Strategic Book Group, Durham, CT, August 2011 ISBN 978-1-61204-532-0