Congestion Pricing from the Industry Perspective
Why We Need Both

Policy vs. Technology
The Industry

- Not policy makers
- Solutions within a given framework
- Technology as a facilitator
- Focus on customer needs
- Focus on business case
- Preference for off-the-shelf solutions
The Role of Mobility

- One of the highest ranked topics in our society
- Transportation infrastructure is a cornerstone of our economy
- Mobility is an area of major concern
- Need for better understanding of the true state of transportation
Drivers of Mobility Challenges

Population Growth
Source: US Census Bureau

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>2.6B</td>
</tr>
<tr>
<td>2007</td>
<td>6.6B</td>
</tr>
<tr>
<td>2030</td>
<td>8.2B</td>
</tr>
</tbody>
</table>

Standard of Living
Per capita Income (1990 $)
Source: www.ggdc.net/Maddison

<table>
<thead>
<tr>
<th>Year</th>
<th>Income (1990 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>2.1K</td>
</tr>
<tr>
<td>2007</td>
<td>6.5K</td>
</tr>
<tr>
<td>2030</td>
<td>11.8K</td>
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</table>

Urbanization
Source: United Nations

<table>
<thead>
<tr>
<th>Year</th>
<th>Urbanization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>29%</td>
</tr>
<tr>
<td>2007</td>
<td>49%</td>
</tr>
<tr>
<td>2030</td>
<td>60%</td>
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</table>

Move more people ...
and more goods ...
in condensed space

Sustainable Mobility & Cities: Marrying Technology and Policy
Panel 2 Transportation Pricing
Siemens Axel Reissnecker
Transportation Imbalance

- More people and goods
- More VMT* per person/good
- Population concentration
- Maintenance burden
- Environmental impacts
- Reduced funding

- Larger transportation network
- Technological advancements

*1 VMT = Vehicle Miles Traveled
Levers to reduce transportation problems

**What**
- Reduce VMT
- Modal shift
- Spatial shift
- Time shift

**How**
- Enable
- Inform
- Control
- Charge
Goals of Transportation Pricing

- Revenue generation
- Congestion mitigation
- Emission control

Sustainable Mobility & Cities: Marrying Technology and Policy
Panel 2
Transportation Pricing
Siemens
Axel Reissnecker
Types of Transportation Pricing

- Flat taxes and fees
- Fuel taxes
- Fixed fees for usage of transportation infrastructure
- Variable usage fees tied to supply & demand or other parameters
Examples of State-of-the-art Road Pricing Solutions
Parking Fees based on supply and demand

- Traditional: fixed fees
- Future: variable fees tied to usage of parking infrastructure

Sensors provide usage data and enable dynamic pricing
Dynamic adaption of fees on HOT Lanes

Traffic quality and demand determine the price

Traffic demand

Travel time on HOT lane

Fee

Travel time on HOT lane

Time of day

Sustainable Mobility & Cities:
Marrying Technology and Policy

Panel 2
Transportation Pricing

Siemens
Axel Reissnecker
GPS-based Traffic Choices Study

Evaluation of Traveler Response to Variable Road Tolling

- Pilot Project with PSRC, Washington
- from July 2005 until February 2006:
- 8,000 road segments
- 400 OBUs
- 12 different tariffs depending on type of road and time of day
2007-2008 London
Significant improvement of traffic situation

2010 London
Significant improvement of air quality
GPS/GSM-based Truck Tolling System

- Nationwide system on German freeways
- Section-based tolling
- GPS technology proved to be highly reliable
Plug and Play OBU for GPS-based Tolling

2010 Slovakia
- Nationwide truck tolling system
- Implemented in less than a year
- Covers freeways and highways
- DSRC for enforcement
Questions?

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