



The Internet of Cars

Spawning New Business Models

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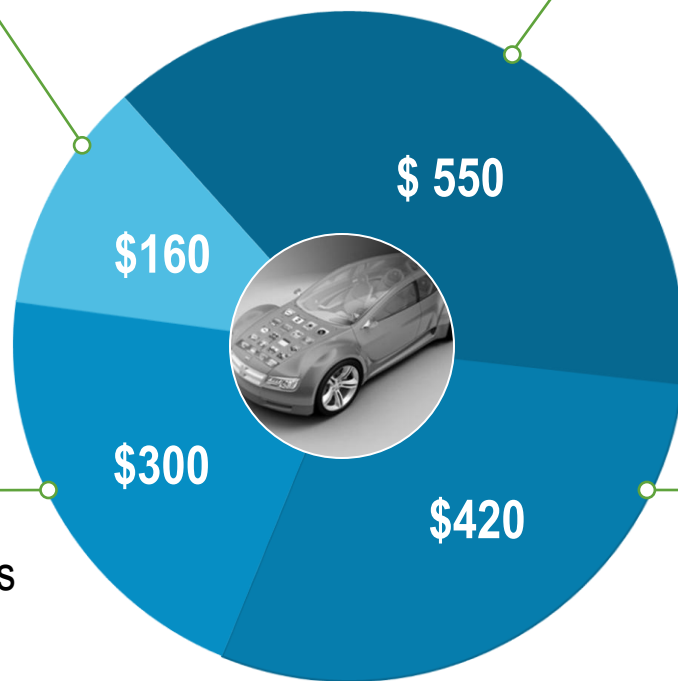
Internet of Cars: Unlocking \$1,400 in Benefits per Vehicle, per Year

Internet of Cars Service Providers

- Traffic guidance, navigation, emergency services
- “Google on wheels,” PAYD insurance, location-based services

Auto OEM/OES

- Lower service/warranty costs
- New profit pools
- Architectural savings



Benefits per vehicle, per year

Vehicle User

- Lower insurance
- Lower operation cost
- Less time stuck in traffic, more productivity

Society

- Fewer crashes
- Lower traffic/road/toll operation costs
- CO₂ reduction

Source: Cisco IBSG Automotive and Economics Practices, 2011

The Internet Takes to the Road...



Transportation Services Delivered by Technology

Safety and Security

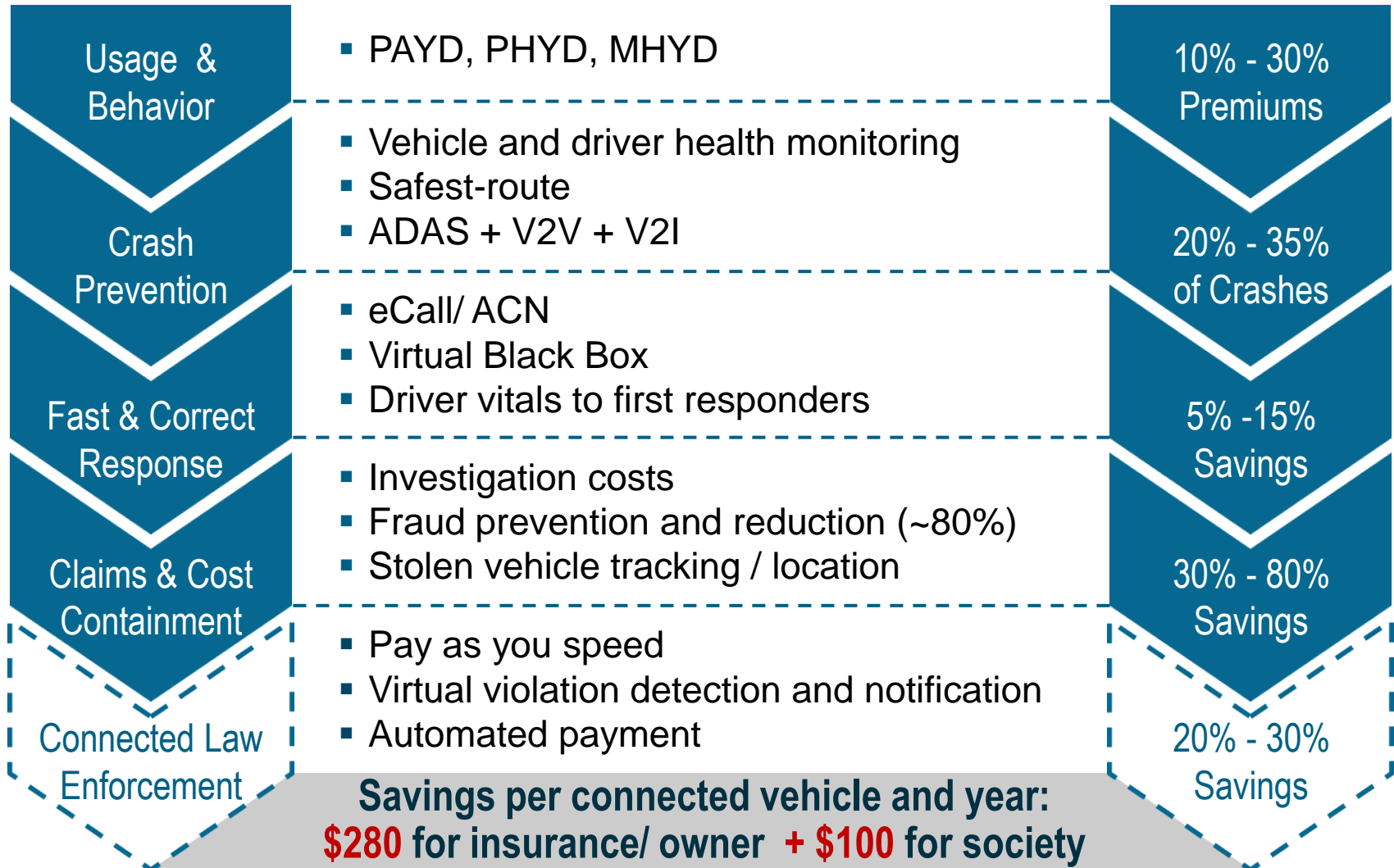
Operational Efficiency

Travel Experience

Revenue Generation

Source: Cisco IBSG Automotive, 2011

THE “Savior-App”: Strategic Asset for the Entire Car Insurance Value Chain



Source: OctoTelematics, Cisco IBSG Automotive 2010

U.S. Roads and Highways Are Congested, Deficient, Lack Desirable Safety Features



25%

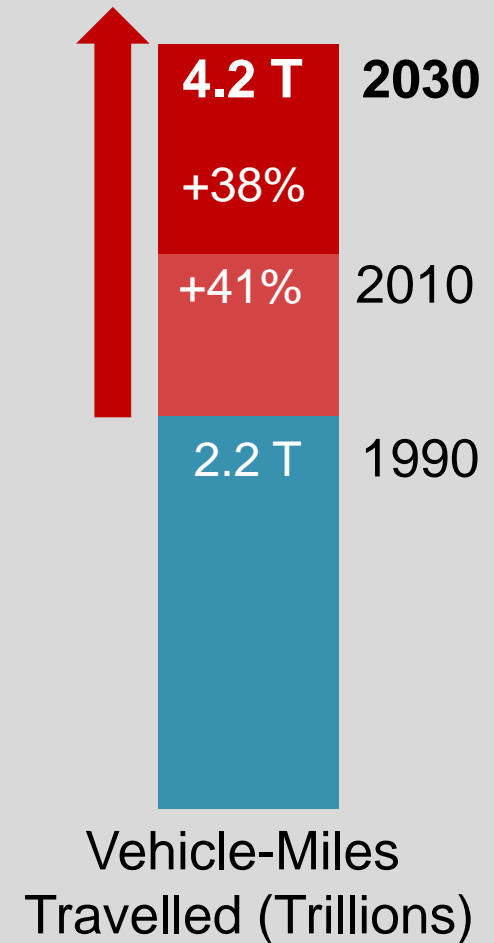


**\$270 B
Needed**



Cost
+ 55%

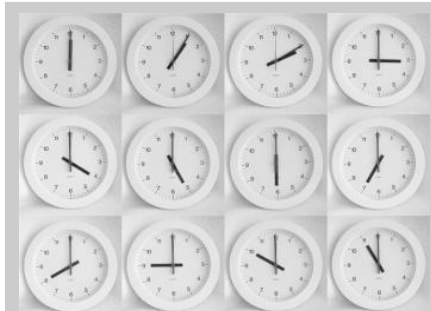
Budget:
\$100 B



Source: America's Top Five Transportation Headaches, AASHTO, Victoria Transportation Policy Institute, 2009

THE Future “Finance-Application”: Connecting for Smart Road Pricing

Smart Road Pricing / Vehicle-Miles-Traveled Tax



Time of Day



Occupancy



Congestion



Speed

Weight



Road Type



Fuel Economy

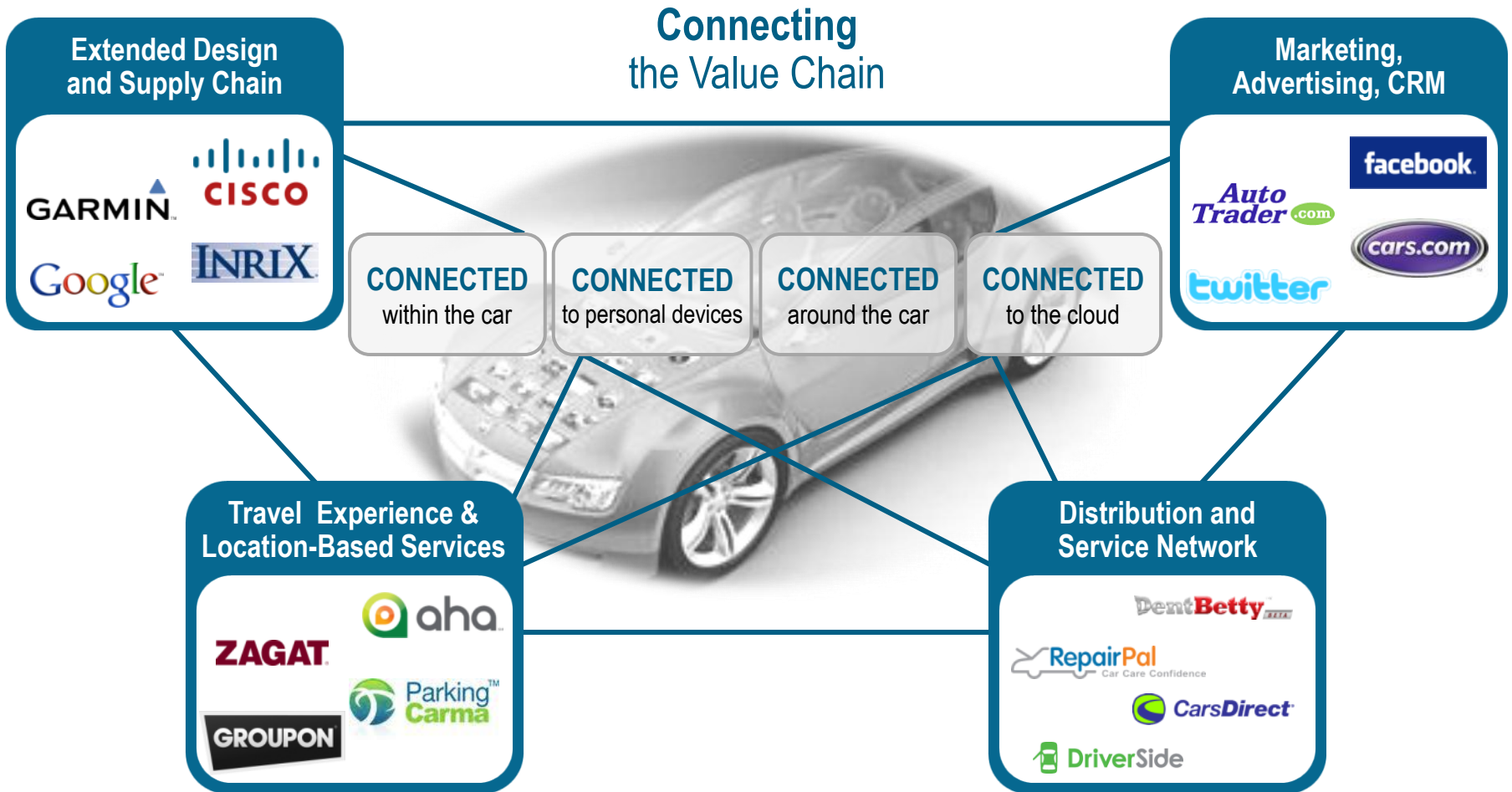


Emissions



Source: Cisco IBSG Automotive 2011

New Battleground: From Building Cars to Selling Travel Time Well Spent

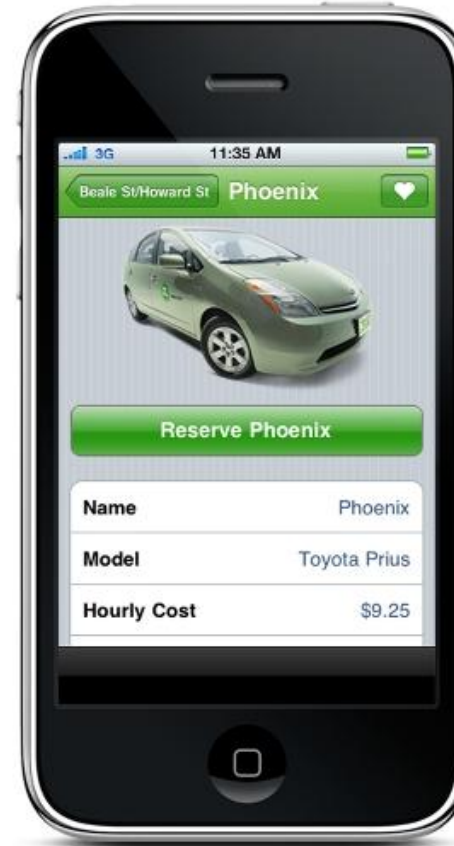


Source: Cisco IBSG Automotive, 2011

Emergence of New Business Models

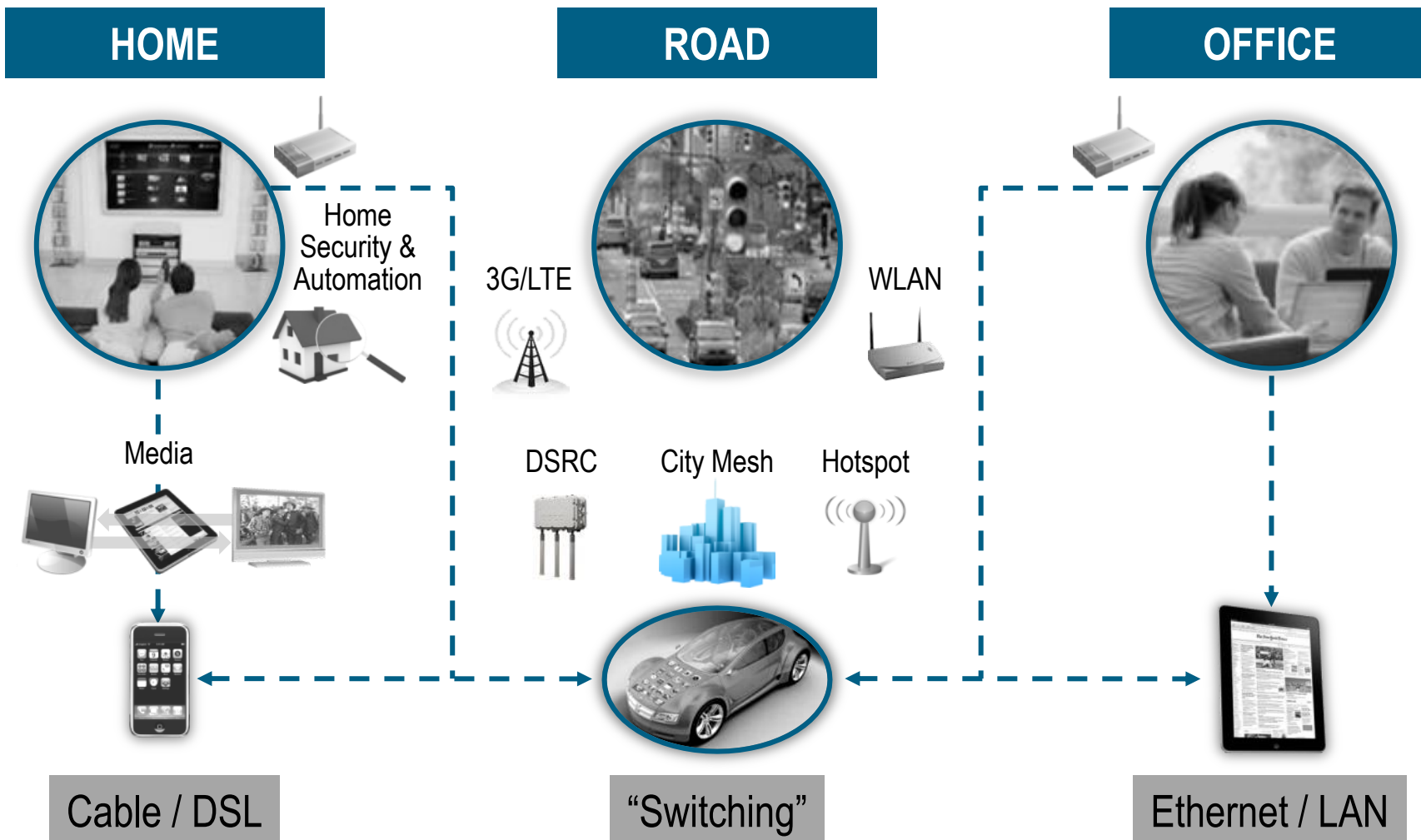
Smart Parking

Mobility On-Demand



Source: Web Research, 2011

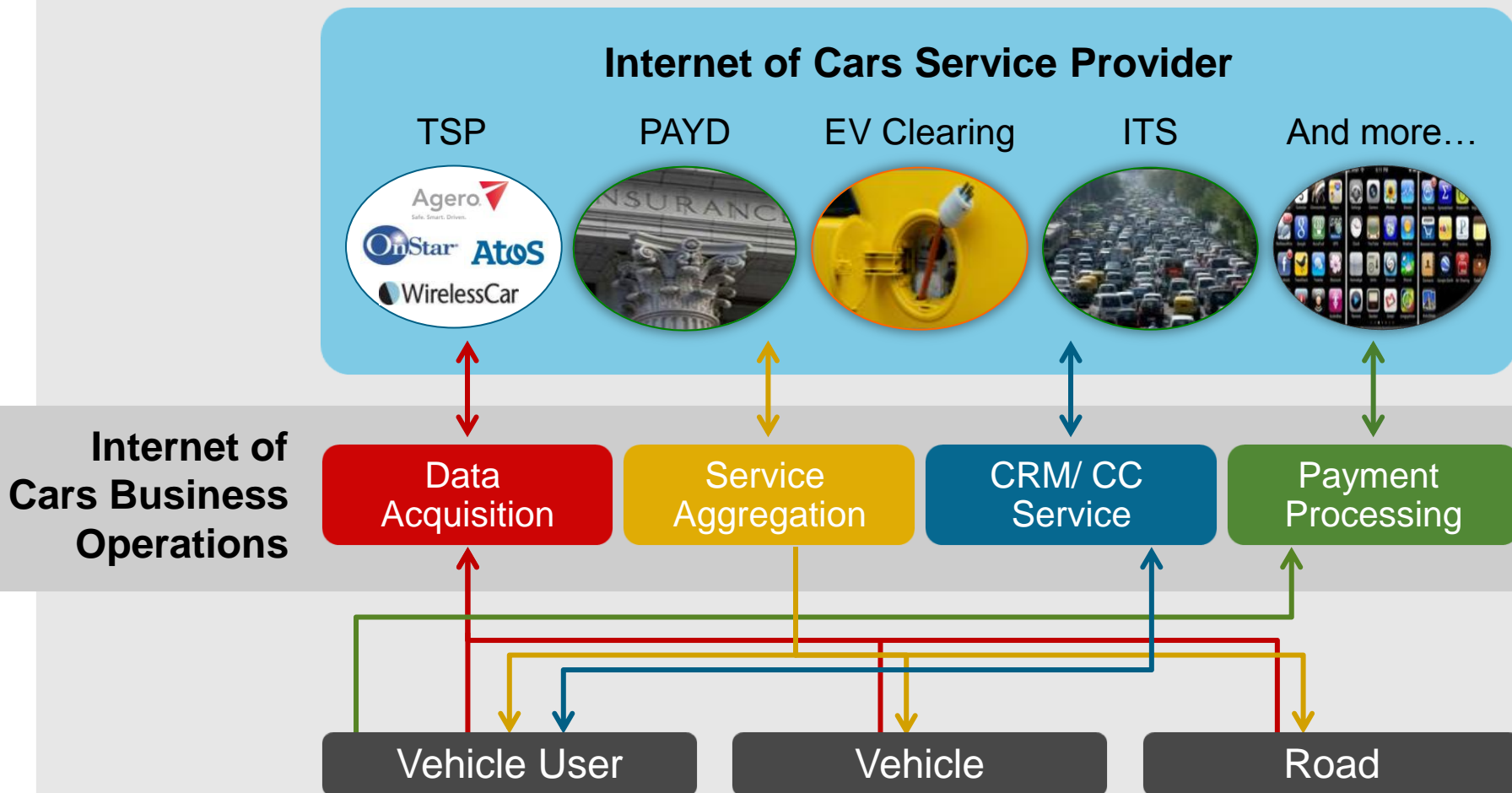
Off-Loading Data and Switching Is Key to Improve Experience and Contain Cost



Source: Cisco IBSG Automotive 2011

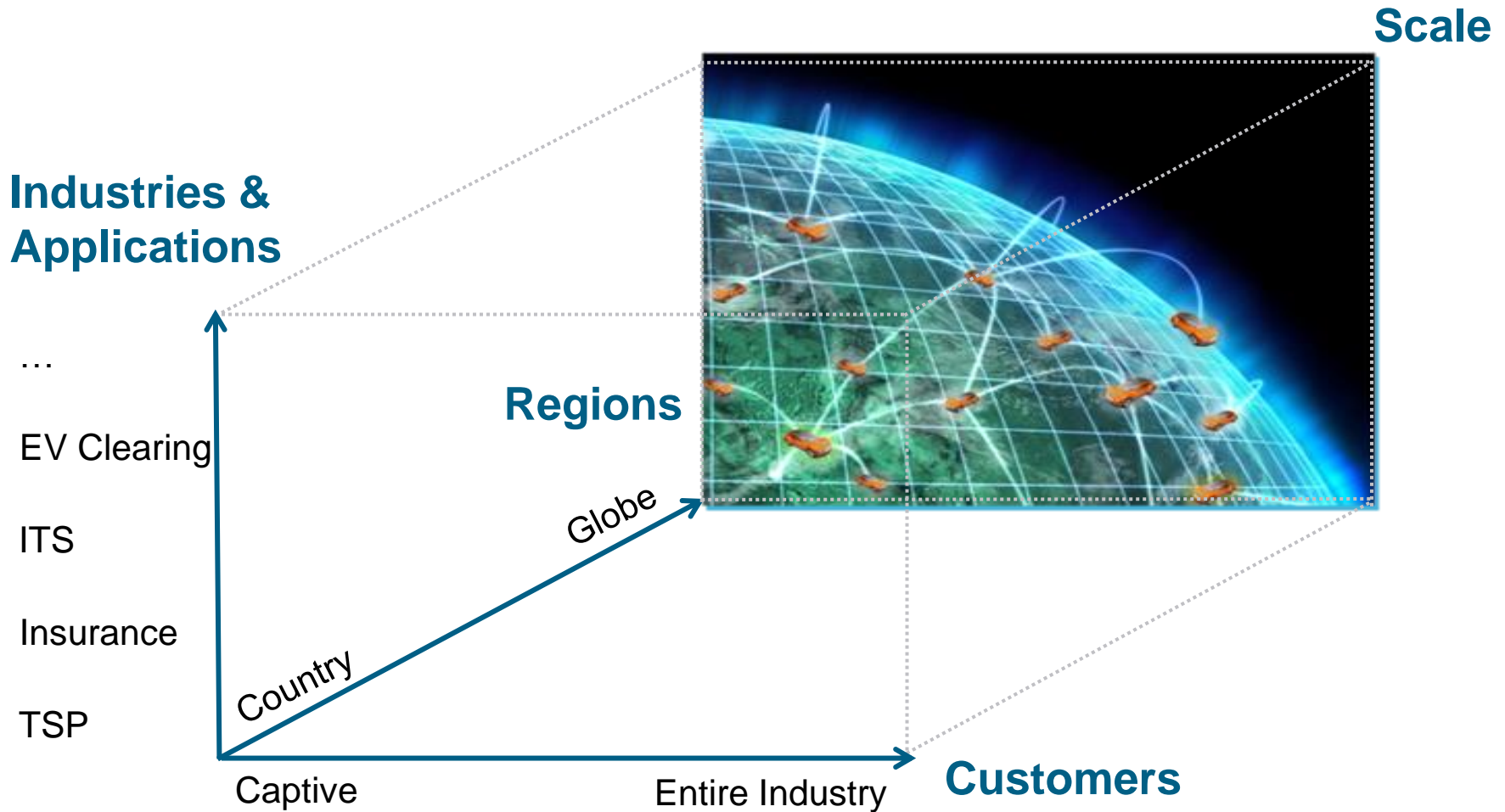
Service Providers Are Well Positioned to Enable Key Business Operations

Service Providers / Network as the Platform



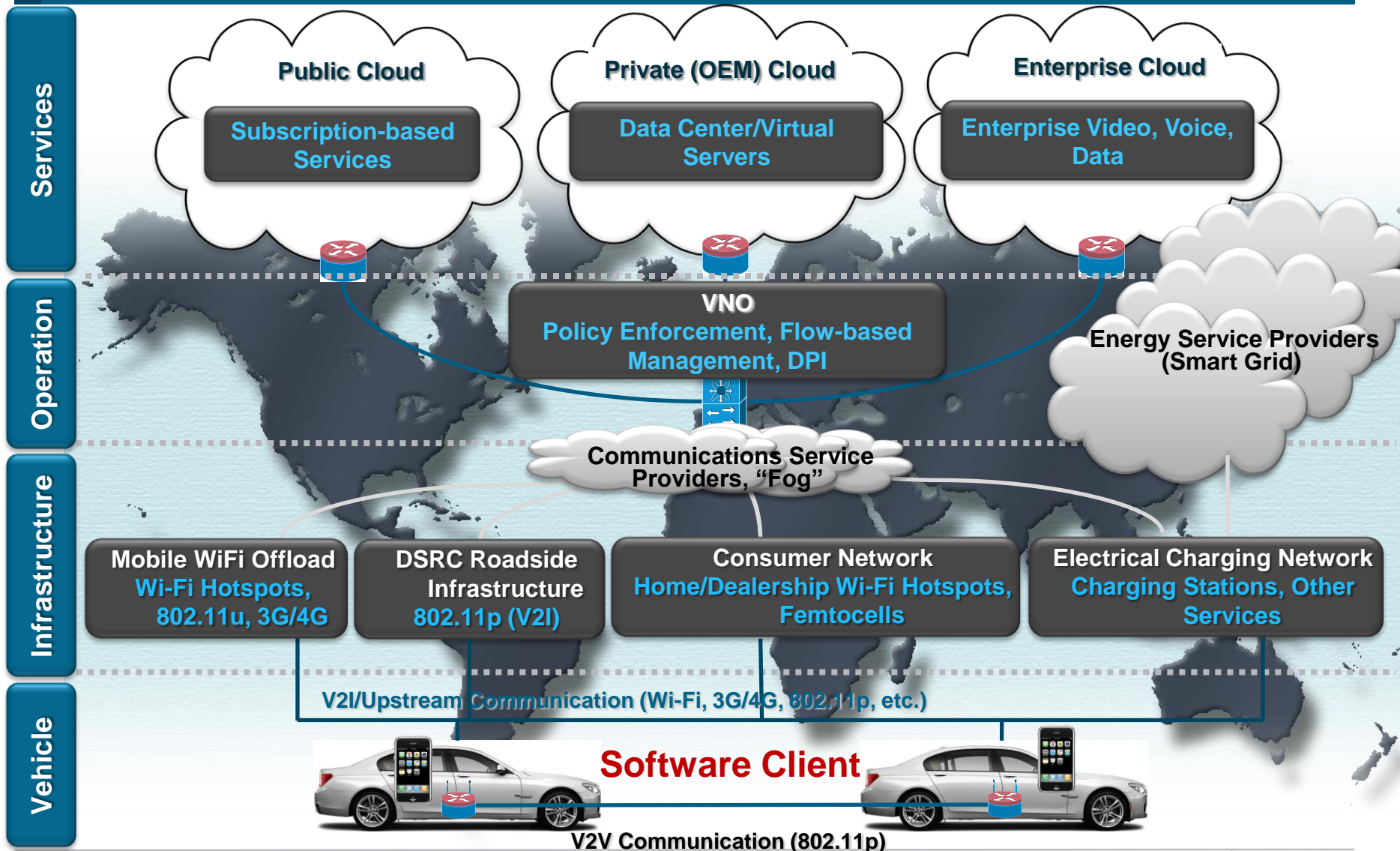
Source: Cisco IBSG Automotive 2011

Internet of Cars is a Scale Business

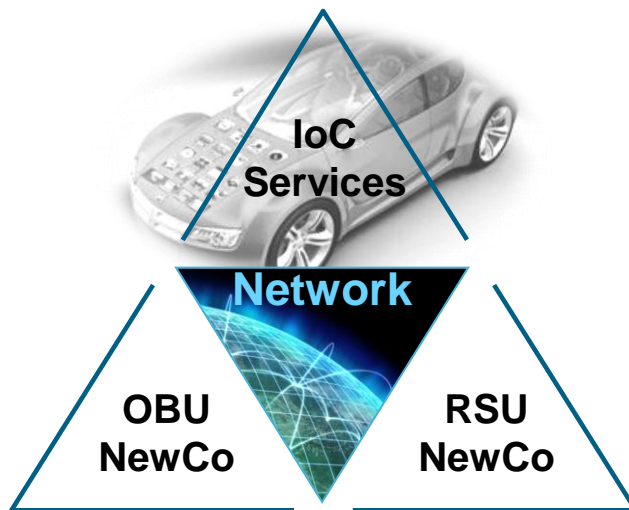


Source: Cisco Smart Connected Vehicles Team, 2012

End-to-End Architecture is Essential – Especially for Scaling Globally



New OBU and RSU Business Models: Enabling Internet of Cars Services



Subsidize OBU Upgrade
For Right to Monetize
Data & CV Services

Build & Operate
WiFi + DSRC Network
to Monetize Off-Load and
ITS & LBS Services

Source: Cisco Smart Connected Vehicles Team, 2012

The Connectivity Infrastructure Could be a Profitable Business at 1/10th ¢ / VMT

U.S. Roadside Equipment (RSE) PPP Revenue Model [US\$ Million]

	CapEx	P&L
Initial Total 5 Year RSE Investment (10 Depr.)	6,261	626
Repair/ Replacement	616	62
Operating Expenses		440
Subtotal RSE Cost		1,128
Hypothetical Margin	100%	1,128
Revenue Required to Fund "RSE Business"		2,256



~3,000,000,000,000



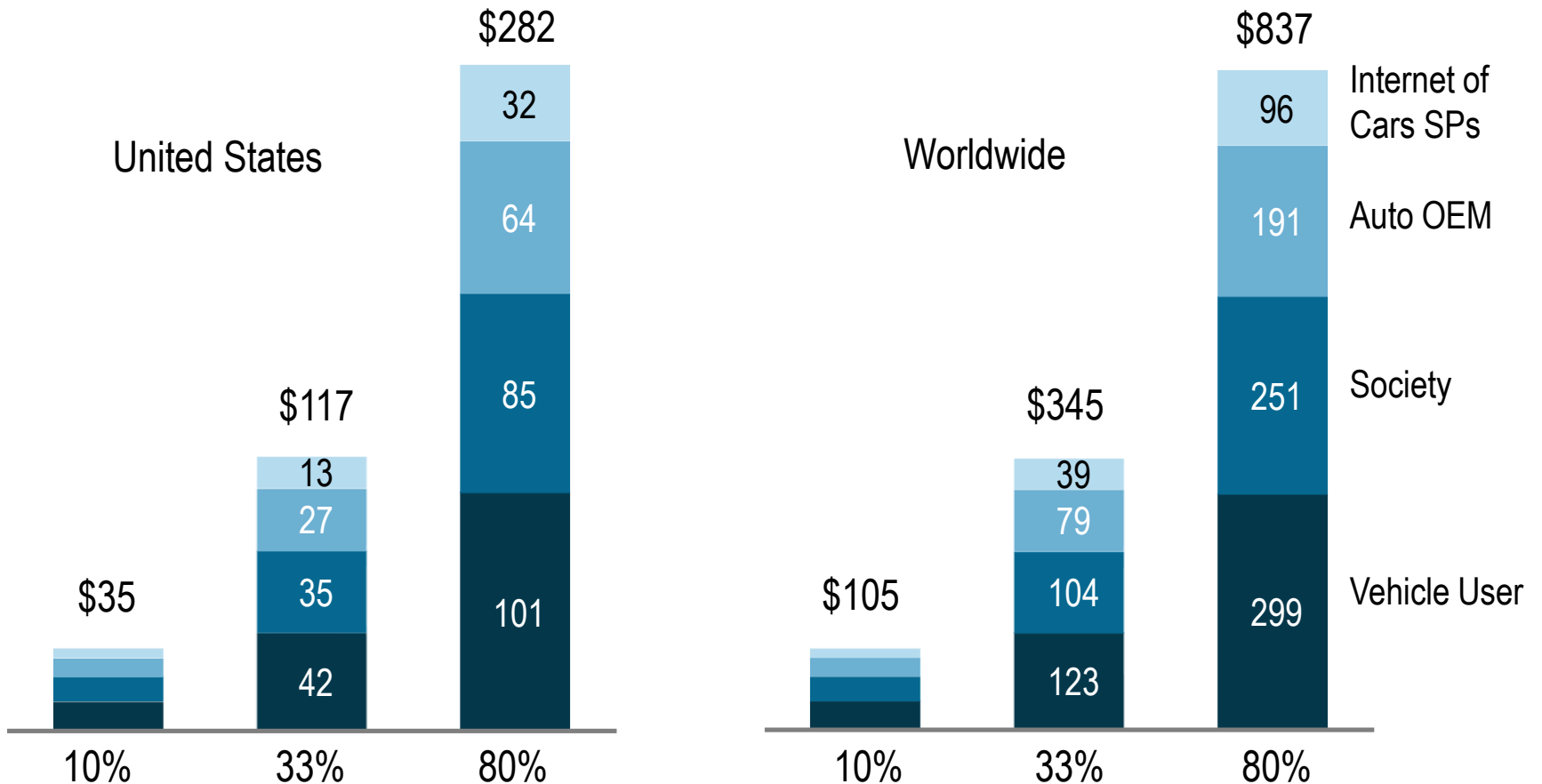
Per Month



Source: Vehicle-Infrastructure Integration (VII) Initiative, Benefit-Cost Analysis, Version 2.3, US-DOT, 2008
Cisco IBSG Automotive, 2011

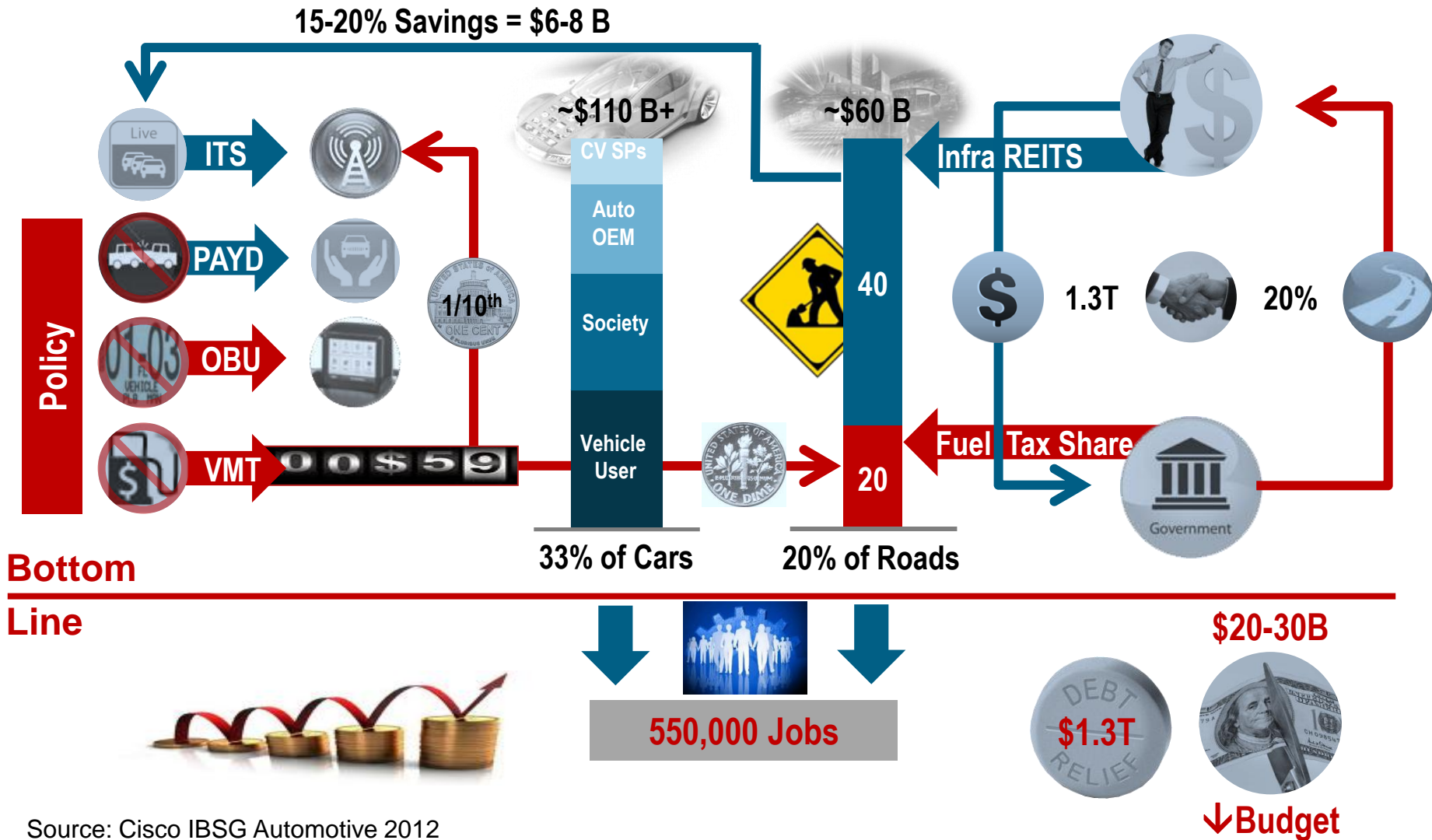
Connecting 1/3 of All Vehicles = \$116 Billion in U.S. and \$345 Billion Globally

Benefits of Connecting All Road Vehicles Per Year By Penetration [\$ Billion]



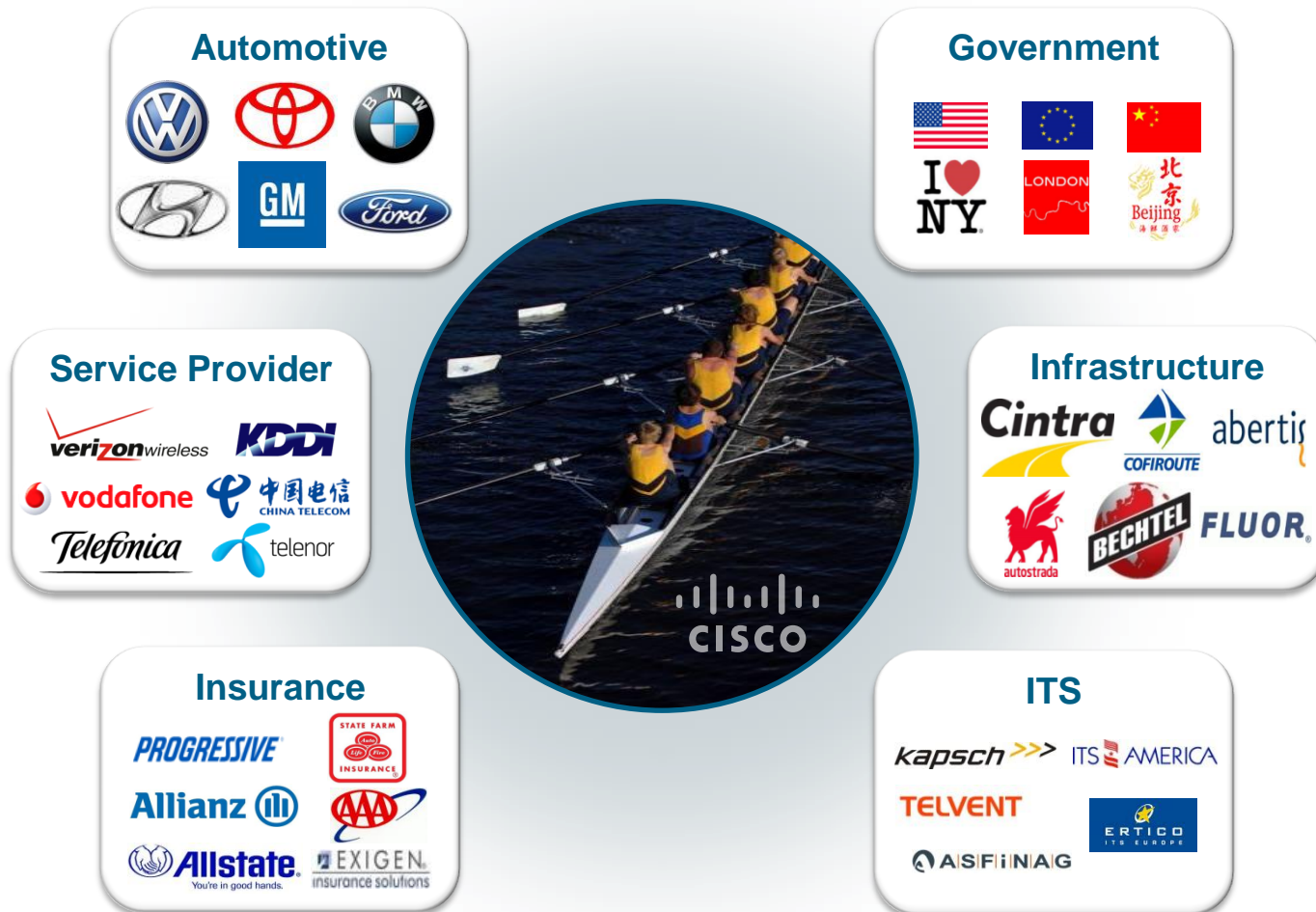
Source: Cisco IBSG Automotive and Economics Practices, 2011 Note: Core Regions NA, EU, AP, Excl. 22% RoW

Resolving the “Chicken & Egg” Dilemma



Making the Internet of Cars a Business

Together We Can...



Source: Cisco Smart Connected Vehicle Team 2012



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More Food for Thought on the “Internet of Cars”

- **Executive Summary:** A Business Case For Connecting Vehicles
- **Government:** A Catalyst to Unlock Societal Benefits of Transportation
- **Carriers:** Service Providers at a Crossroads
- **Automotive:** From Building Cars to Selling Travel Time Well-Spent
- **Insurance:** The Business of Preventing Crashes



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