



NORTH CAROLINA

Department of Transportation

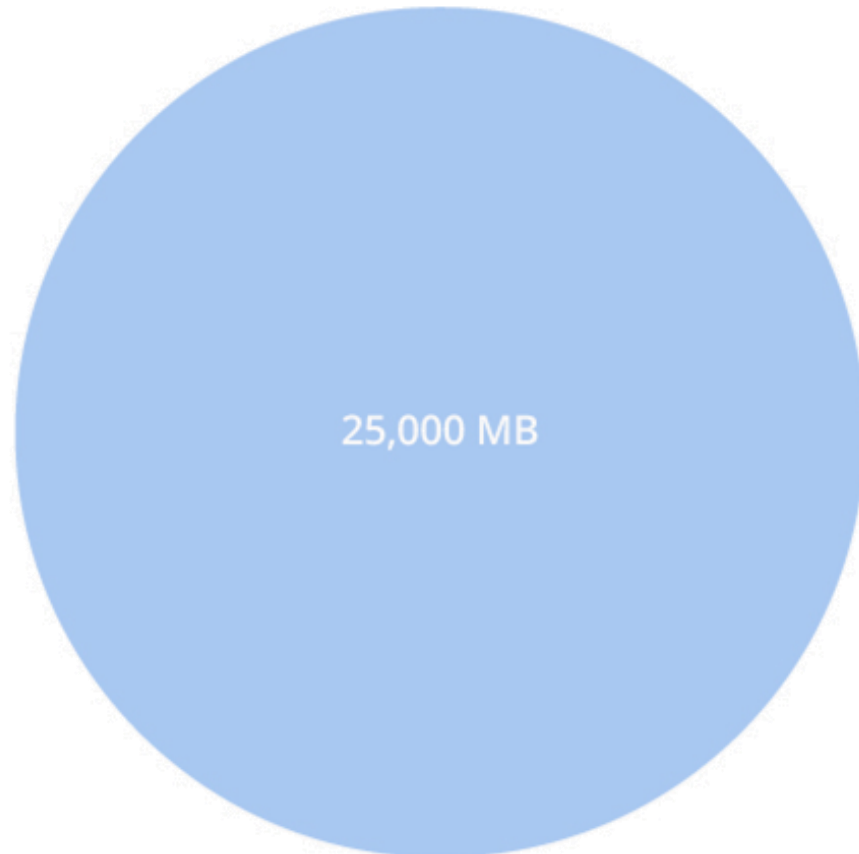


Taxing Data

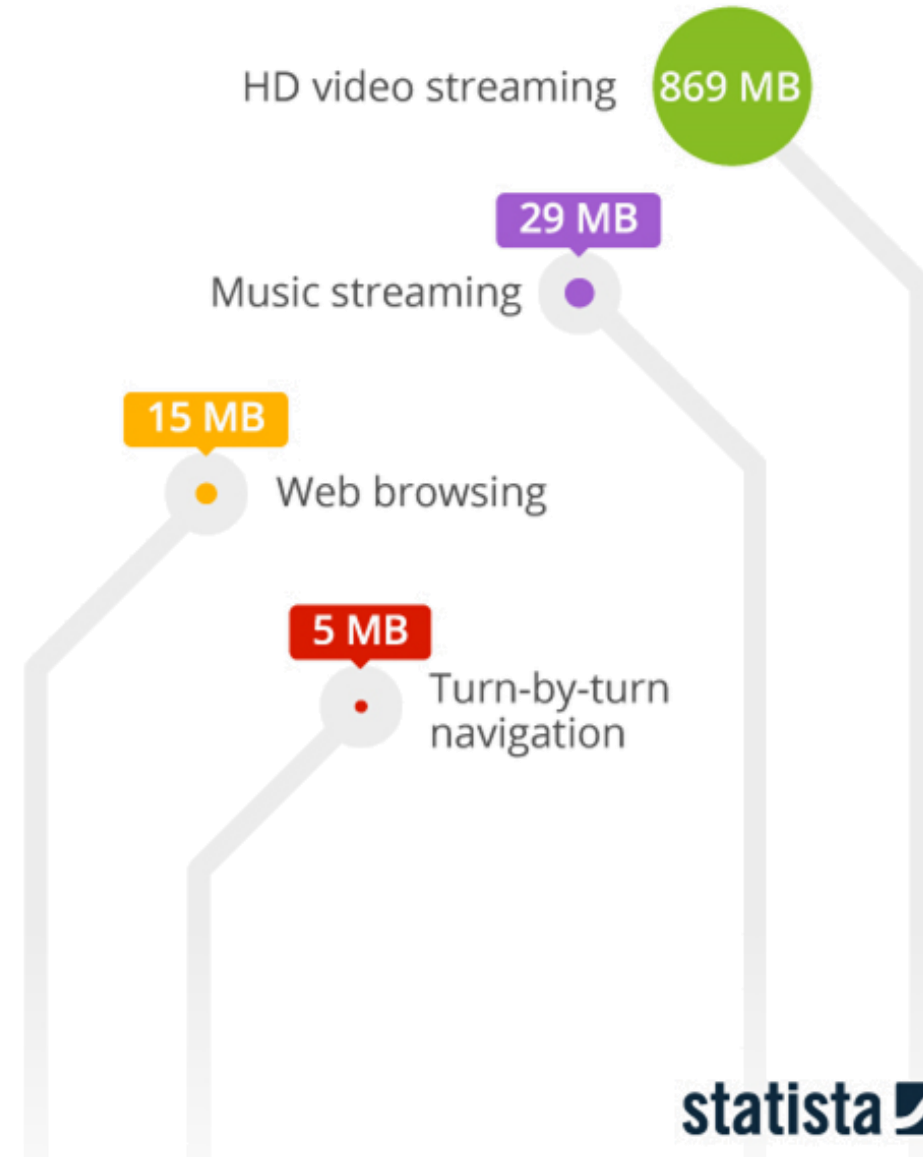
H. Tasaico

April 24, 2020

Examples and Amount of Data



Vehicle data generated



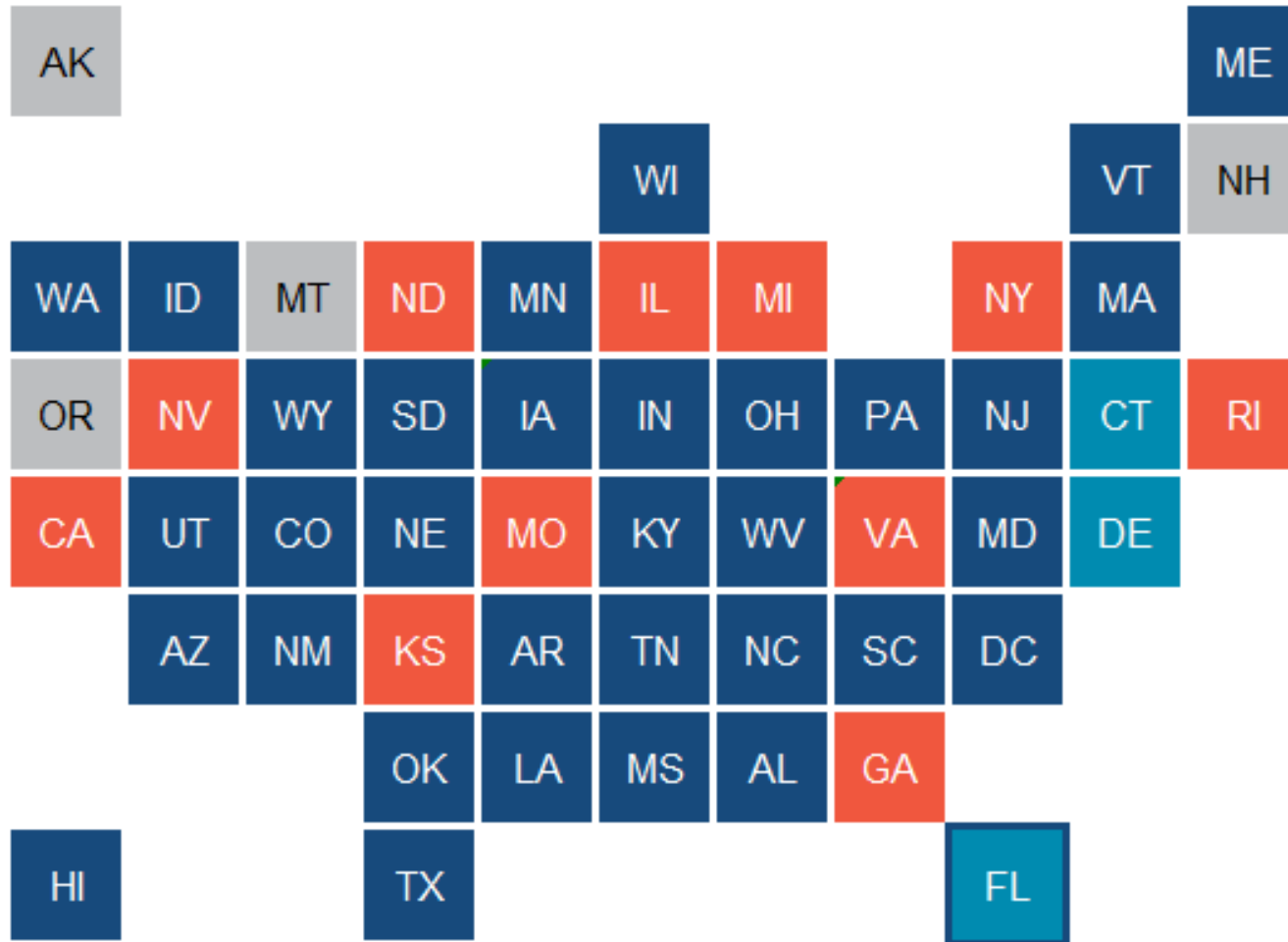
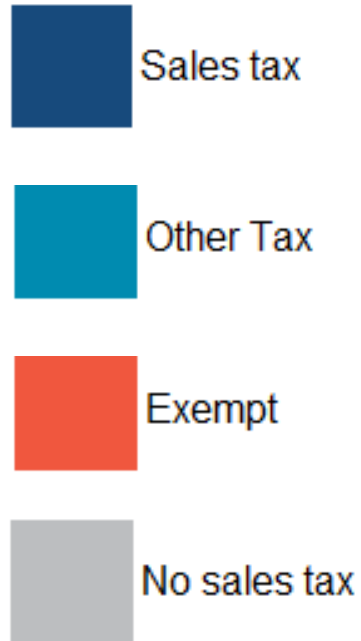
Example of Current Data/Service Tax

Taxes levied in around half the U.S. states on streaming of

- Netflix
- Spotify
- Hulu
- HBO Now
- Amazon Prime Video
- Disney Plus

Netflix Subscriptions Taxing

Netflix Subscriptions



Source: Urban-Brookings Tax Policy Center

Evolution of Streaming Services

- In the beginning, there were movies and television
 - Consumers didn't have much of a choice
- Fast forward to today
 - Streaming services - anywhere, anytime
- As a result, the market has expanded exponentially
 - New players in the value chain
 - Disrupted the film, television, and cable industries
- Old business models have been permanently disrupted
 - New digital platform models will continue to be developed
- Digital platforms will enable interaction of social media and e-commerce

Taxes on Vehicle Purchase and Ownership



Passenger Vehicle

Purchase

- Highway Use Tax
- Title Certificate



Ownership

- Inspection
- Annual Registration
- Property Tax*



Consumption

- Motor Fuel Tax
- Electricity **



Infrastructure Usage

- Road User Charge**

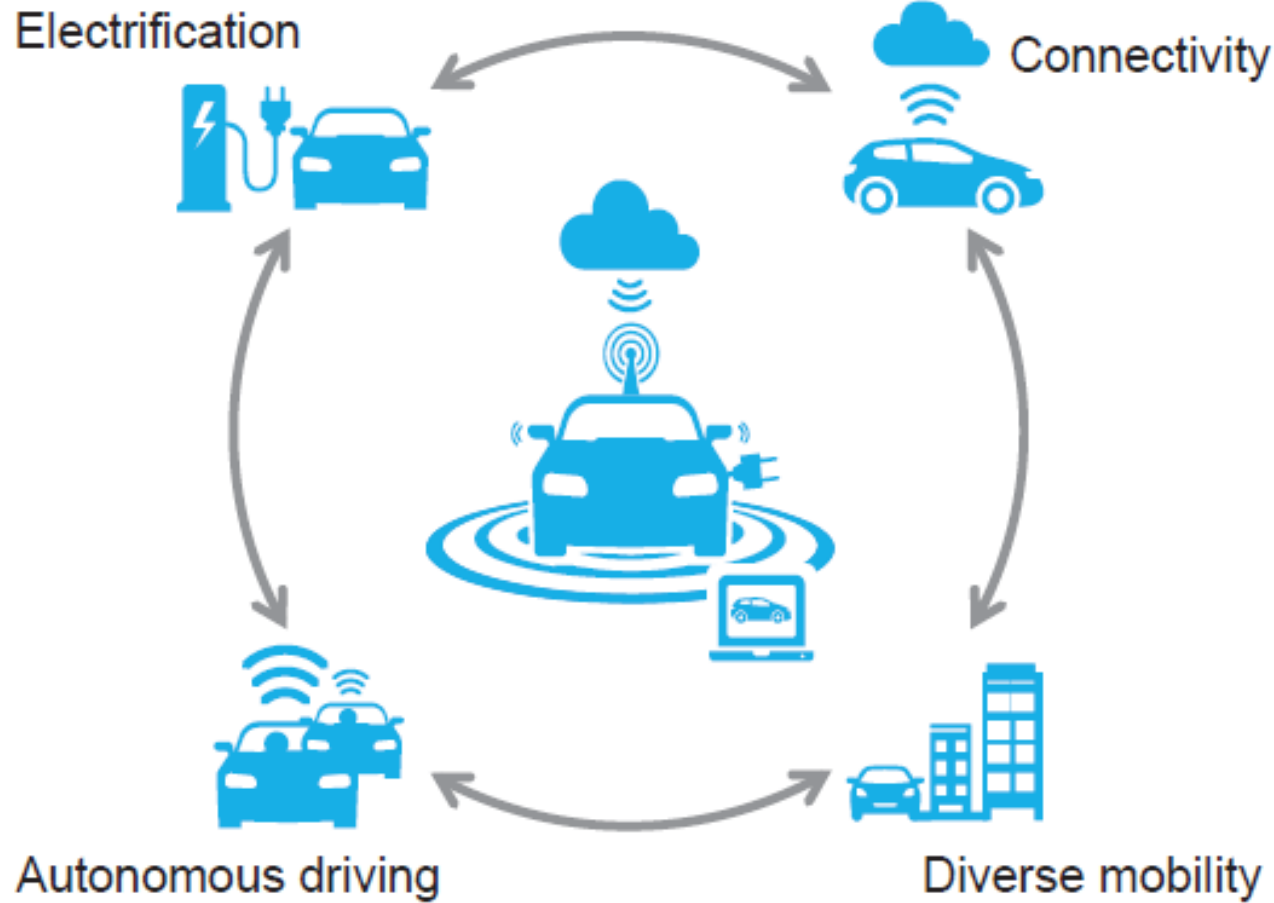


Data Usage Recovery

- Sharing of data collected

10101

Global Megatrends in the Automotive Industry



- ✓ Shifting Revenue Pools
- ✓ Changes in Mobility Behavior
- ✓ Diffusion of Advance Technology
- ✓ New Partnerships

Data Macrocategories and Privacy Sensitive

Perceived
privacy
sensitivity

Low

Macrocategory

Car-related use case examples

Today

2020 - 25



External road and environmental conditions (e.g., ice warning on the road from ESP, fog from camera/sensors' feed)



- Real-time maps

- Preventive safety car adaptation
- Live road conditions reports



Technical status of the vehicle (e.g., oil temperature, airbag deployment, technical malfunctions report)



- Car repair diagnostics
- Automatic emergency call (e-call)

- Predictive, remote service booking



Vehicle usage (e.g., speed, location, average load weight in the trunk)



- PAYD insurance
- Toll/road tax payment

- Reduced engineering costs
- Trunk delivery



Personal data and preferences (e.g., driver/passengers' identity, preferred radio station, use patterns of applications)



- Vehicle settings "memory" based on key presence at entry

- E-commerce in the car
- Targeted advertisements



Direct communications from the vehicle (e.g., calendar, telephone, SMS, e-mail)



- Speech control of messaging and e-mail

- Proactive navigation and services
- Virtual assistant/ concierge services

High

Future

Vehicle Generated Data

Monetizing Data

New Business Opportunity

Potential global market of \$450 to 750 Billion by 2030*

Issues

Data Ownership

Privacy