Society & Self-Driving Vehicles: A Framework for Understanding Transitions

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Self-Driving Cars Are Coming ...

Futurist Speaker - Thomas Frey
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Self-driving cars are the future and it's turning into a massive race to see who can build the best autonomous car first and capture the largest market share.

Companies are racing to build self-driving cars | Impact Lab

There's no question that self-driving cars are coming — the real debate at this point is who will get there first. We rounded up a whopping 20 co
The Future of America is Driverless
By 2021, we will see autonomous vehicles in operation across the country in ways that we [only] imagine today... Families will be able to walk out of their homes and call a vehicle, and that vehicle will take them to work or to school.

We're going to see transit systems sharing services with some of these companies. It's not just autonomy in the vehicles. You're going to see trucks running more closely together, resulting in fuel savings and positive climate impact.
You’ll see companies that will start to use unmanned aircraft to deliver products to us.

My daughter, who will be 16 in 2021, won’t have her driver’s license. She will be using a service.
A Potentially Revolutionary Technology

“This is going to revolutionize the way we travel”
Science seeks to improve and informs technology, which is the use or application of scientific knowledge for a specific goal or purpose. Technology demands more and makes life easier. Society benefits from this relationship.
‘Wow!’

Major innovation (the pioneer - liked and respected)
e.g., iPhone
Affective Evaluation

High

“Cool!”
Moderate innovation (loved but not awed)
e.g., Wii

Low

“Wow!”
Major innovation (the pioneer - liked and respected)
e.g., iPhone

Cognitive Evaluation

Low

High

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High

“Cool!”
Moderate innovation (loved but not awed)
  e.g., Wii

“Humdrum” (dull)
Minor innovation, or not an innovation (e.g., me-too follower)
  e.g., Coca-Cola Cherry

Low

Cognitive Evaluation

Low

“Wow!”
Major innovation (the pioneer - liked and respected)
  e.g., iPhone

High
Affective Evaluation vs. Cognitive Evaluation categorizes innovations into four categories:

- **“Cool!”**
  - Moderate innovation (loved but not awed)
  - e.g., Wii
- **“Wow!”**
  - Major innovation (the pioneer - liked and respected)
  - e.g., iPhone
- **“Humdrum” (dull)**
  - Minor innovation, or not an innovation (e.g., me-too follower)
  - e.g., Coca-Cola Cherry
- **“Nice work”**
  - Moderate innovation (respected but not loved)
  - e.g., Segway Transporter
How should government (at all scales) regulate emerging transportation technology?
How will the public learn to interact with self-driving cars?
How willing are people to give up control of their vehicle to machines?
How will any transition to shared ownership of self-driving vehicles affect automobile ownership levels, and ultimately the auto industry?
Big Questions

- Will auto-autos change how much driving is done on US roads and hence GHG emissions?
- How will self-driving vehicles affect employment in the transportation sector?
- What are the implications of auto-autos for jobs?
- How equitable will the impacts be?
- Are auto-autos feasible in every location?
Interstate Highway System
DAVID F. NOBLE

PROGRESS WITHOUT PEOPLE

NEW TECHNOLOGY, UNEMPLOYMENT, AND THE MESSAGE OF RESISTANCE
This emerging technology needs to be thoughtfully implemented into society in a way that maximizes the positive impacts and minimizes any unavoidable costs.
Science, Technology & Society

Science

- Seeks to improve
- Informs

Technology

- Technology is the use or application of scientific knowledge for a specific goal or purpose
- Demands more

Society

- Benefits from
- Makes life easier

Technology

- Demands more