Applying a Hybrid Network Approach to Deployment of Self-Driving Mobility Services

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1908

Henry Ford begins Model-T production
1927

15 millionth Model-T produced
Price comparability by 1927:
Same price ($250) for 6x speed and range

HORSE & BUGGY

FORD MODEL T
CHALLENGES FACING DEPLOYMENT

BUILDING A HYBRID NETWORK
Consumers are excited about AV.
But operational challenges are significant

1. Expensive to build
2. Can’t go a lot of places
3. Can’t drive fast
4. Dead miles kill economics
Up to 90%+ of US passenger miles will be served by on-demand AV electric fleets.

$5,600 income gain per household - $1 trillion annually

Transportation as a Service will be up to 10x cheaper than today's individually owned vehicles.

**Consumer Expectations**

- 3-5 minute ETAs in most of the US
- Low price
- Interest in self-driving rides as novelty but most interested in getting from A to B
What will a successful AV deployment look like?
A Hybrid Network...
...with incremental deployment

1. LOW SPEED
   GOOD WEATHER

2. AUTONOMOUS
   < 45 MPH

3. AUTONOMOUS FULL

HUMAN RIDE SHARE DRIVERS
Keys to effective deployment

1. Know WHERE to drive
2. Keep COSTS LOW
3. FILL UP the cars
Where to drive: know the best routes

Lower speeds, limit complex situations & traffic restrictions

- Speeds $\leq 35$ MPH
- Avoid difficult intersections
- No bike lanes
- Well-marked roads
- Easy pick-up and drop-off
Remove Highways
Remove Bike Lanes
Remove Difficult Intersections
Remaining Routes:
“AV Eligible”
Overlay: AV Eligible Demand
Low-cost operations

Driver Service Centers for maintenance, cleaning, parking, & charging
Shared Rides

Filling the cars up is essential for cost and congestion

Shared is 35% of Lyft rides in major markets
Building Shared into AV from day one
Endgame: Subscription Service

$9,000 Annual Cost Per Vehicle

Multi-modal subscription that gets you where you need to go
New possibilities for cities