AUTONOMOUS VEHICLES

Discussion on workforce impact

K S Venkatraman
March 2019
DISCUSSION OUTLINE

Historical perspective and the AI revolution

Technology potential

Workforce Impact, Risks and Opportunities

Preparing for the transition

Q&A
HISTORICAL PERSPECTIVE

- Technological revolutions
  - Printing press, Automobiles, Computers, Internet, Smartphones, Farm and factory automation
  - Led to workforce changes
- Examples of job displacements
  - Agriculture
    - 1870: 50% of the US workforce employed in agriculture. Now: less than 2%
  - 1955: 500,000 elevator operators in the US
  - Bank tellers grew from 485,000 in 1985 to 527,000 in 2002, offering various financial services
- Technology will continue to advance
  - Creates new opportunities for us to understand and embrace
AV TECHNOLOGY AND ITS POTENTIAL

- Rapid advancement in Artificial Intelligence makes AVs possible
- Most significant transportation industry innovation
  - Since the invention and introduction of the automobile
- Potential to influence:
  - Safer transportation for passengers, pedestrians and bicyclists
    - Needs security, extensive testing and regulatory oversight
  - Climate change by reducing car ownership and pollution
    - Increasing rideshares, mass-transit, Autonomous EVs
  - Access to transportation, particularly the disadvantaged
    - Providing access regardless of age and ability
  - Reduced congestion and increased productivity
    - Replacing parking spaces with ‘useful’ real-estate
    - Reduce time spent in congestion with productive work
WORKFORCE IMPACT DUE TO AUTOMATION

Share of tasks that are susceptible to automation
- High (70%–100%)
- Medium (30%–70%)
- Low (0%–50%)
PERCEIVED WORKFORCE IMPACT

- 3.8 million americans operate motor vehicles (trucks, delivery vans, buses and taxis)
  - Most common occupation in 29 states.
  - ~1 million people drive for ridesharing services

- Potential to affect related industries
  - Insurance, Truck stops, Motels, Body shops, garages etc.
  - US dealerships employed 1.3 million people in 2016
WORKFORCE IMPACT: OPPORTUNITIES

- Large scale development and deployment of autonomous vehicles
  - 250% increase in job listings year over year (2017-18)
    - AV service technicians
    - Safety, security, mechanical, electrical and computer engineers
  - Construction: smart highways and AV infrastructure
  - Dealerships for AV sensors and parts

- Shift in driver responsibilities
  - Order processing
  - Inventory management
  - Sales and customer service

- Future Opportunities
  - Remote vehicle operators, monitoring for AV fleets
  - New “passenger economy”
    - Goods and service provided to passengers during their ride
      - Health and personal care
      - Meetings and entertainment services
PREPARING FOR THE TRANSITION

- Identify labor force training needs
  - Transportation and related industry sectors

- Worker-centric policy
  - Influence public and private training programs, apprenticeships
  - Identify modifications to existing programs
  - Focus on sector specific, career-connected training