



CITT

CENTER FOR INTERNATIONAL
TRADE AND TRANSPORTATION

LBSU

Empowering the New Mobility Workforce

May 21, 2019

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Center for International Trade and Transportation, LBSU

New Mobility Workforce Challenges

Empowering the New Mobility Workforce

Educating, Training, and Inspiring Future Transportation Professionals



Edited by Tyler Reeb, Ph.D.

- By 2022, transportation employers will need to hire 4.6 million workers—1.2 times the current transportation workforce.¹
- Transformational technologies are developing so quickly that current educational and training providers are struggling to keep pace.

¹ Transportation Learning Center (TLC) and Jobs for the Future (JFF) analysis based on EMSI 2014 Industry Report. Data retrieved from EMSI in June 2014.

New Mobility Workforce Challenges

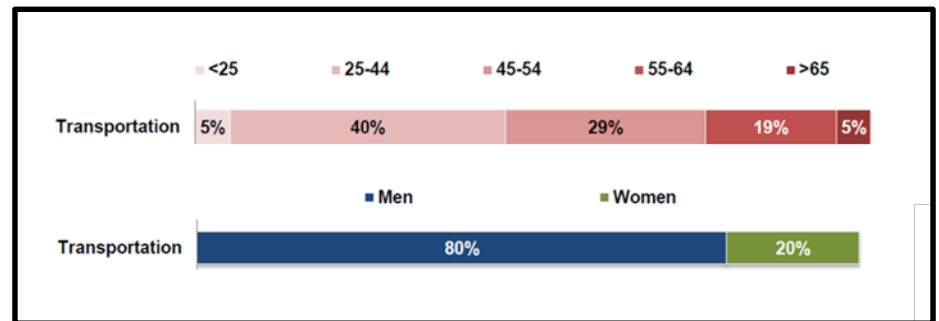
Empowering the New Mobility Workforce

Educating, Training, and Inspiring Future Transportation Professionals

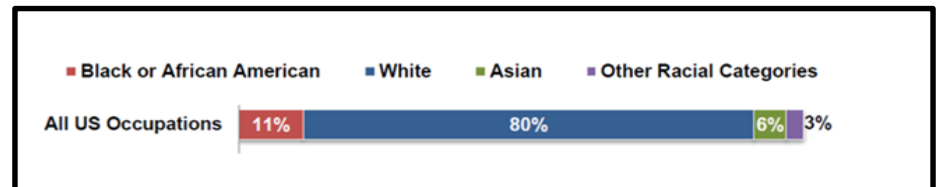


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- More than half of current transportation workers are 45 years or older. The need to replace retiring workers creates significant workforce challenges.



- The new workforce needs to reflect the current U.S. demographic.



Source: U.S. Department of Education, Office of Career, Technical, and Adult Education. (2015, August). Strengthening Skills Training and Career Pathways across the Transportation Industry. Washington, D.C.: Author.

Empowering the New Mobility Workforce

A few highlights from the book...

LA Metro: changing the mobility game—inspiring and training a new workforce, filling leadership voids, and creating farm teams for the future

Phillip A. Washington
Chief Executive Officer, LA Metro

Joanne Peterson
Chief, Human Capital and Development, LA Metro

Farm Teams for the Future



Source: LA Metro

- Introducing education opportunities to students aged 12 to 18, LA Metro initiated a Transportation School concept called E3: exposing, educating and employing youth in the transportation industry.
- In partnership with LA County, LA Metro has established a Transportation Academy boarding school which:
 - Targets and recruits at-risk youth
 - Fundraises to offer free tuition
 - Supports students' life needs
 - Hopes to build a qualified workforce

Inspiring the next generation mobility workforce through innovative industry-academia partnerships

Stephanie S. Ivey, PhD
Associate Dean for Research
Professor Herff College of Engineering

Inspiring the Next Generation



Students in the 2018, Girls Experiencing Engineering program at the University of Memphis attend a viewing of ASCE's 'Dream Big'.

- Dream Big is the first giant-screen film to answer the call of the STEM (Science, Technology, Engineering, Math) initiative, which aims to inspire kids of diverse backgrounds to become the innovators who will improve the lives of people across our entire planet as we head into the 21st Century and beyond.
- It is imperative that these programs begin in K-12 and continue to inspire the next generation towards their career in transportation.

Inspiring the Next Generation



Patrice Thomas (center) mentors Amanda and Kristen Haltom in the GEE program. Amanda and Kristen are now both engineering professionals

- While women account for 50% of the population and 46% of the total workforce in the United States, they make up only 4%-25% of the workforce in transportation-specific occupations.
- Women are underrepresented broadly at all levels in STEM – particularly in transportation – and the numbers get worse, the higher up the career ladder you look.

Creating Communities of Practice for the New Mobility Workforce: Lessons from the National Transportation Career Pathway Initiative

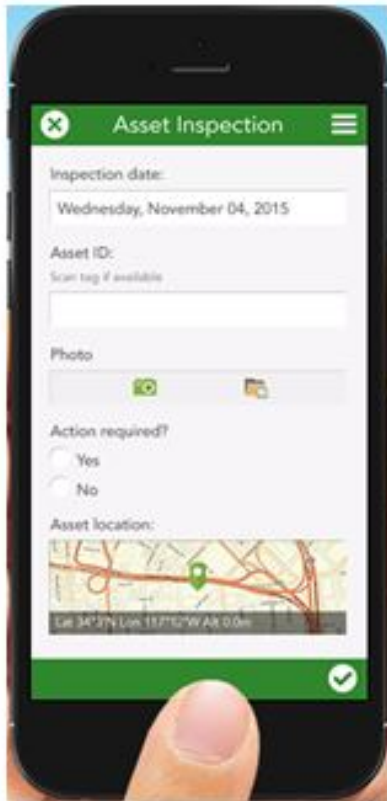
Thomas O'Brien, Ph.D.

Executive Director, Center for International Trade and Transportation

Scott Jakovich

Project Coordinator, National Transportation Career Pathways Initiative

Addressing Transformational Technology in the Classroom



- The Southwest Transportation Workforce Center (SWTWC), in partnership with the Los Angeles Trade Technical College (LATTC), formally launched “ARC 341” on February 24, 2018; a pilot class in metropolitan GIS planning systems with a transportation focus.
- The program aims to provide new technological competencies to students who are interested in transportation and urban planning professions.

Addressing Transformational Technology in the Classroom



- Members of the National Network for the Transportation Workforce developed a national career pathway program to inspire, recruit, and prepare future professionals for transportation disciplines in planning, engineering, environment, safety, and operations.

Addressing Transformational Technology in the Classroom



ARC 342 Students and Virginia Tsu, Director of FHWA's Center for Transportation Workforce Development, on the final day of the pilot course.

CALIFORNIA STATE UNIVERSITY, LONG BEACH
COLLEGE OF CONTINUING AND PROFESSIONAL EDUCATION

Alberto Semadeni

Has successfully completed

ARC 341: GIS Metropolitan Access Planning Systems

A course developed in partnership with the Southwest Transportation Workforce Center at CSULB and the Los Angeles Trade Technical College with support from the USDOT Federal Highway Administration.

May 26, 2018


Janet Anderson, Dean
College of Continuing & Professional Education



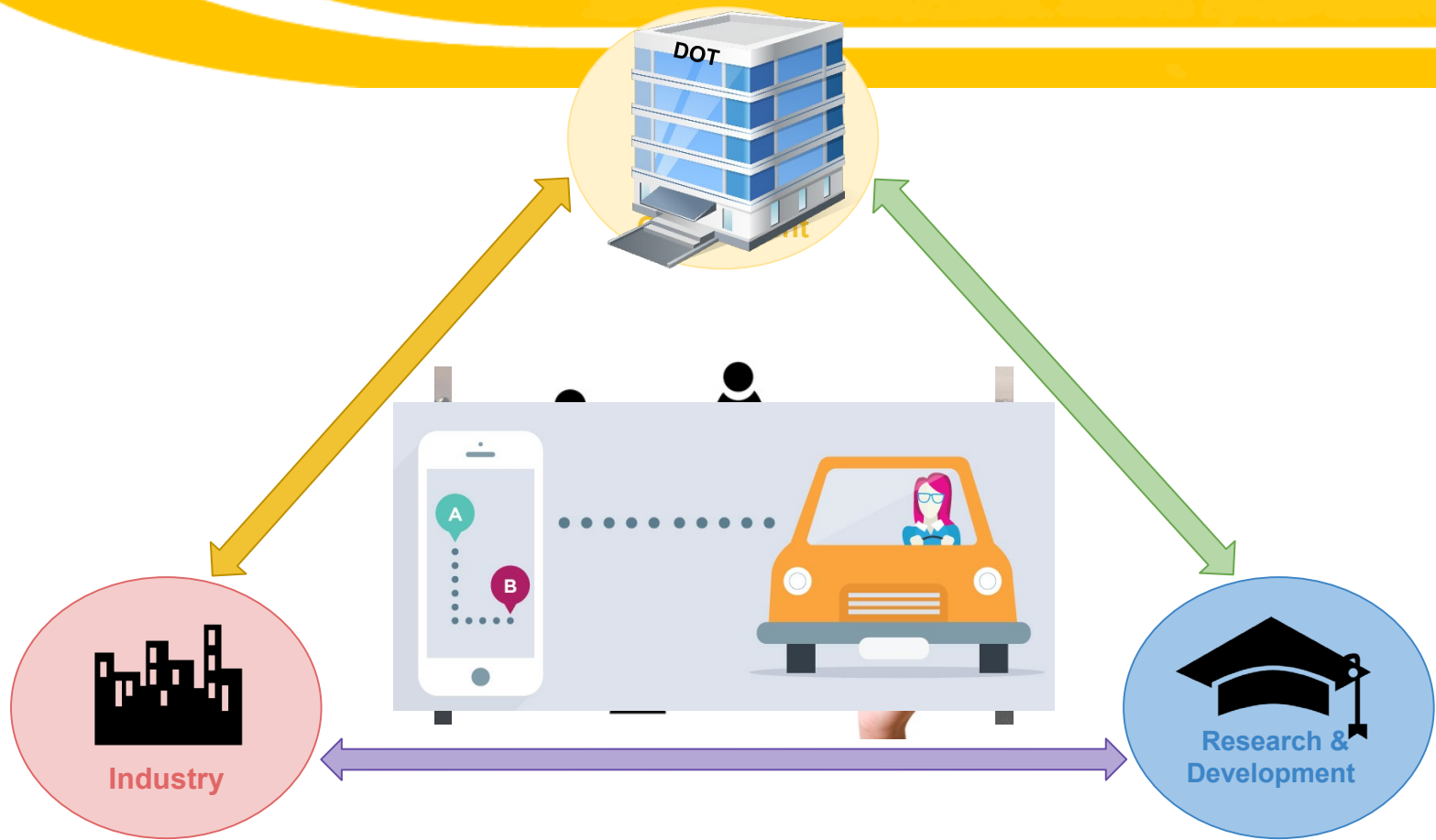

Thomas O'Brien, Executive Director
Center for International Trade & Transportation

The Uniting Principle for the book:

**This book is a network of
communities of practice writ large.**

- Leaders in education, industry, and government need to create workforce development ecosystems that facilitate learning and upskilling for emerging and incumbent transportation workers.





Empowering the
New Mobility Workforce

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Edited by Tyler Reeb, Ph.D.

Thank you!

<https://www.elsevier.com/books/empowering-the-new-mobility-workforce/reeb/978-0-12-816088-6>

Tyler Reeb, Ph.D.

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The Center for International Trade and Transportation (CITT)

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Leveraging university expertise to inform better policy

Austin Brown

Executive Director

Empowering the New Mobility Workforce

A Historical Perspective on Technology and
Work

May 21st, 2019

Key Question

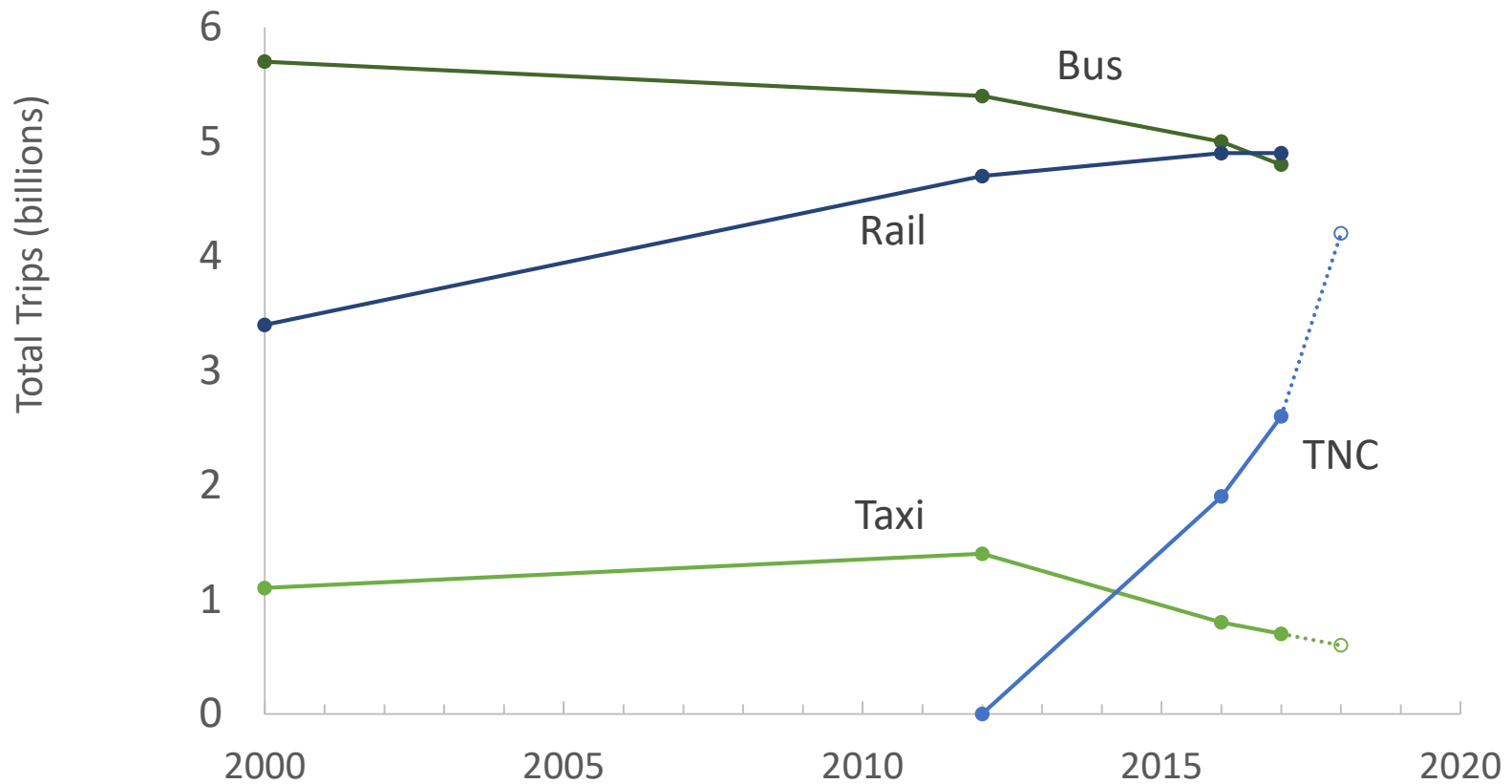


- What can past technological transformations from other industries teach us?
- Selected figures from:

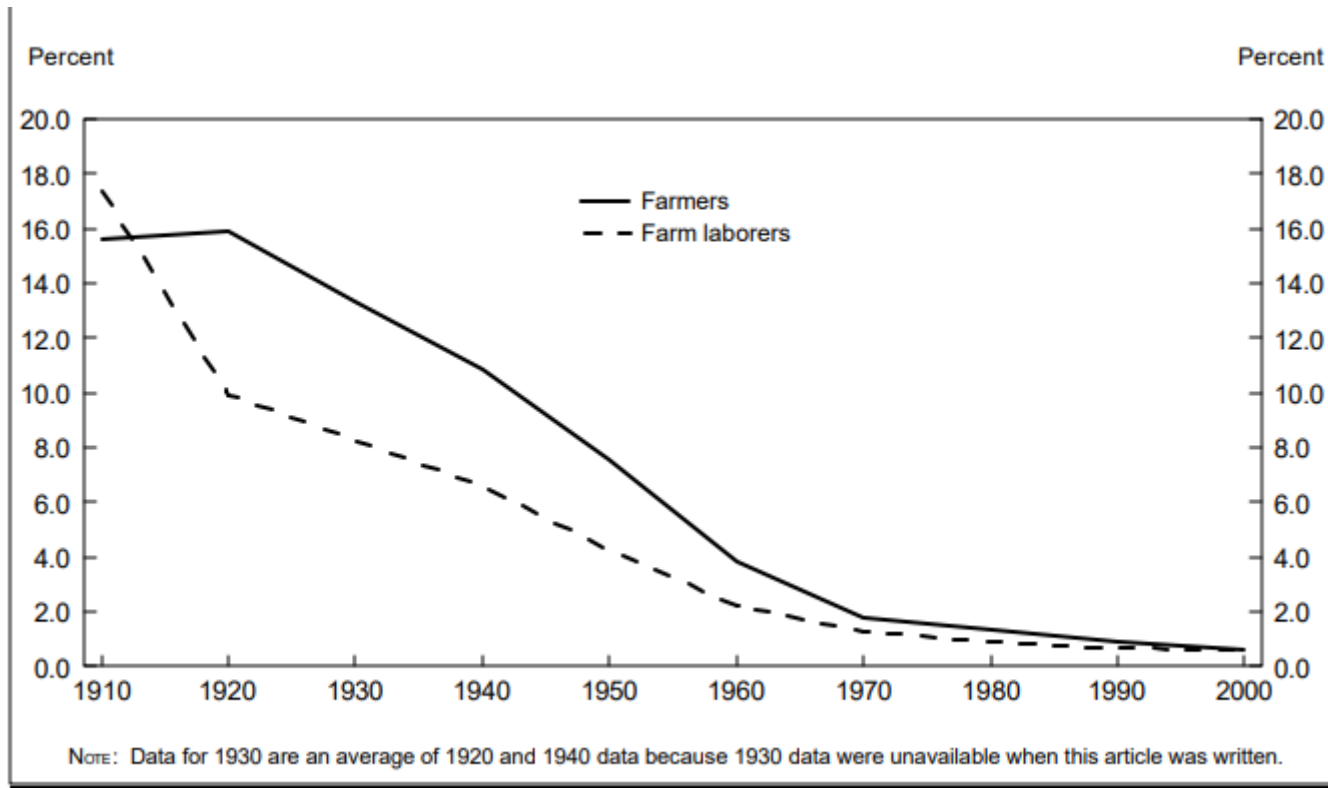
Historical perspectives on managing automation and other disruptions in transportation

Austin Brown, Hannah Safford, Daniel Sperling

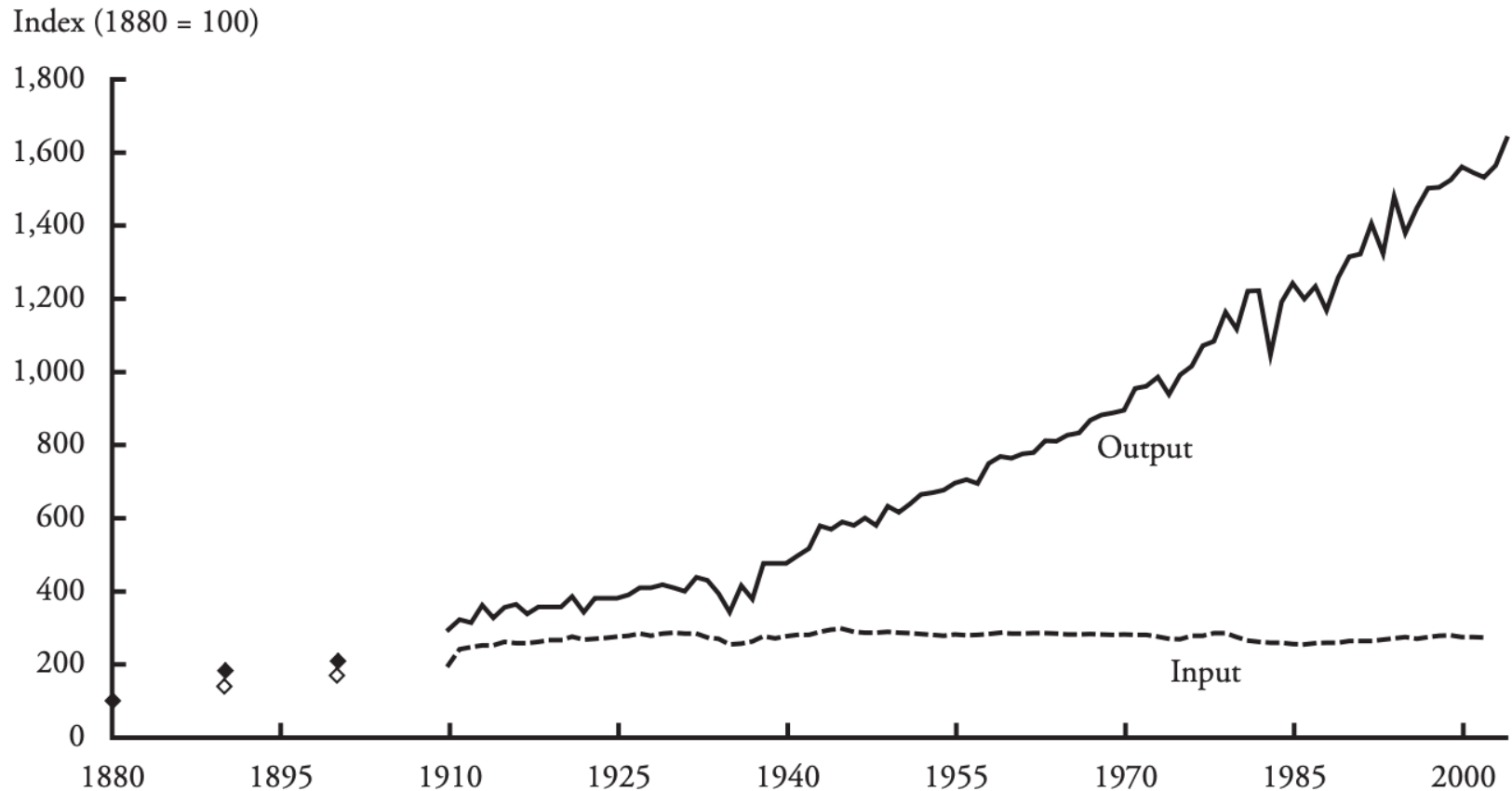
Disruption is Already Here



Farm Labor Disrupted



Farm Productivity Increase

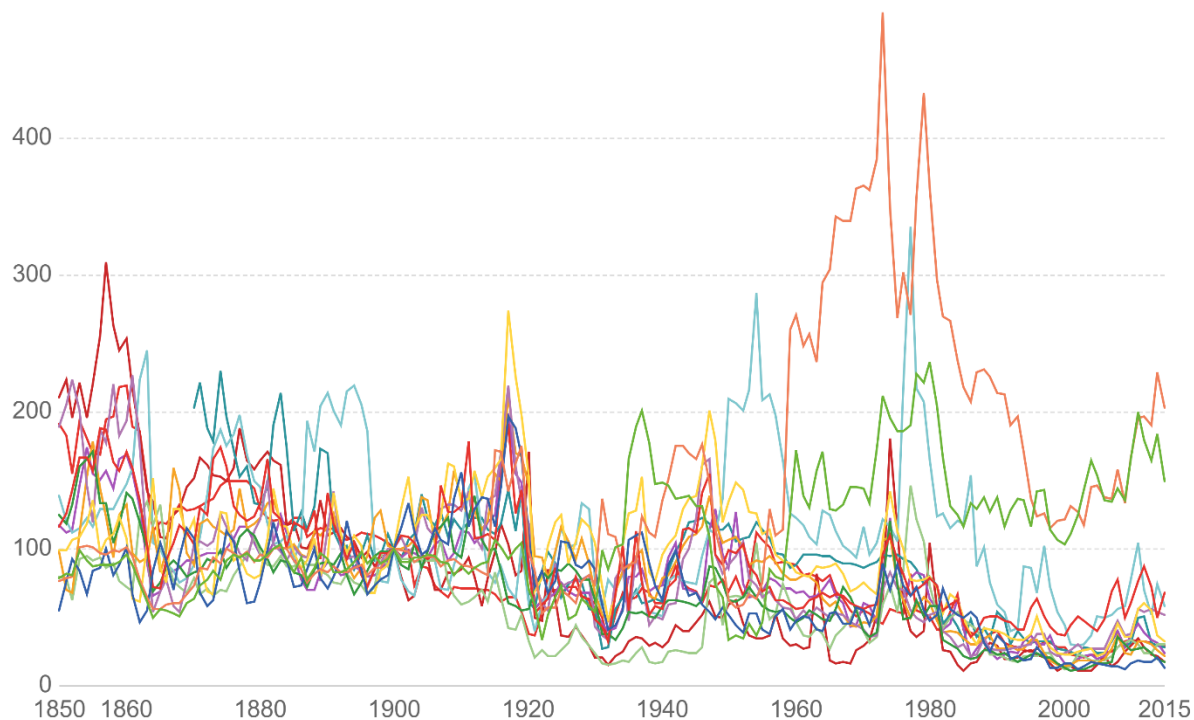


Food Prices Generally Declined

Long-term price index in food commodities, 1850-2015, World

Commodity price index in food items dating 1850-2015, measured relative to real prices in 1900 (i.e. 1900 = 100).

OurWorld
in Data



Source: Commodity Prices since 1850 - Jacks (2016)

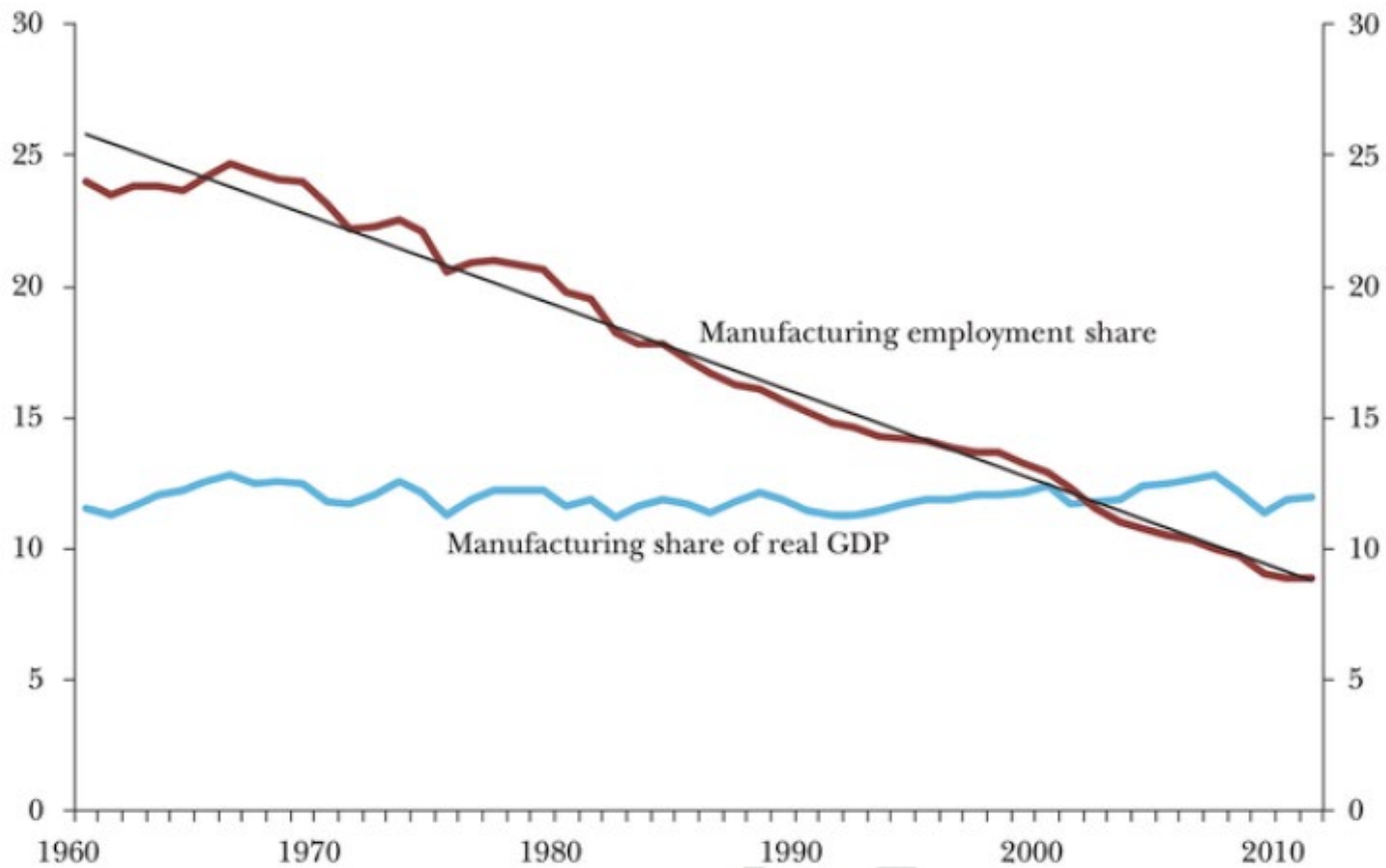
OurWorldInData.org/food-prices/ • CC BY-SA

UC DAVIS

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Leveraging university expertise to inform better policy

Manufacturing

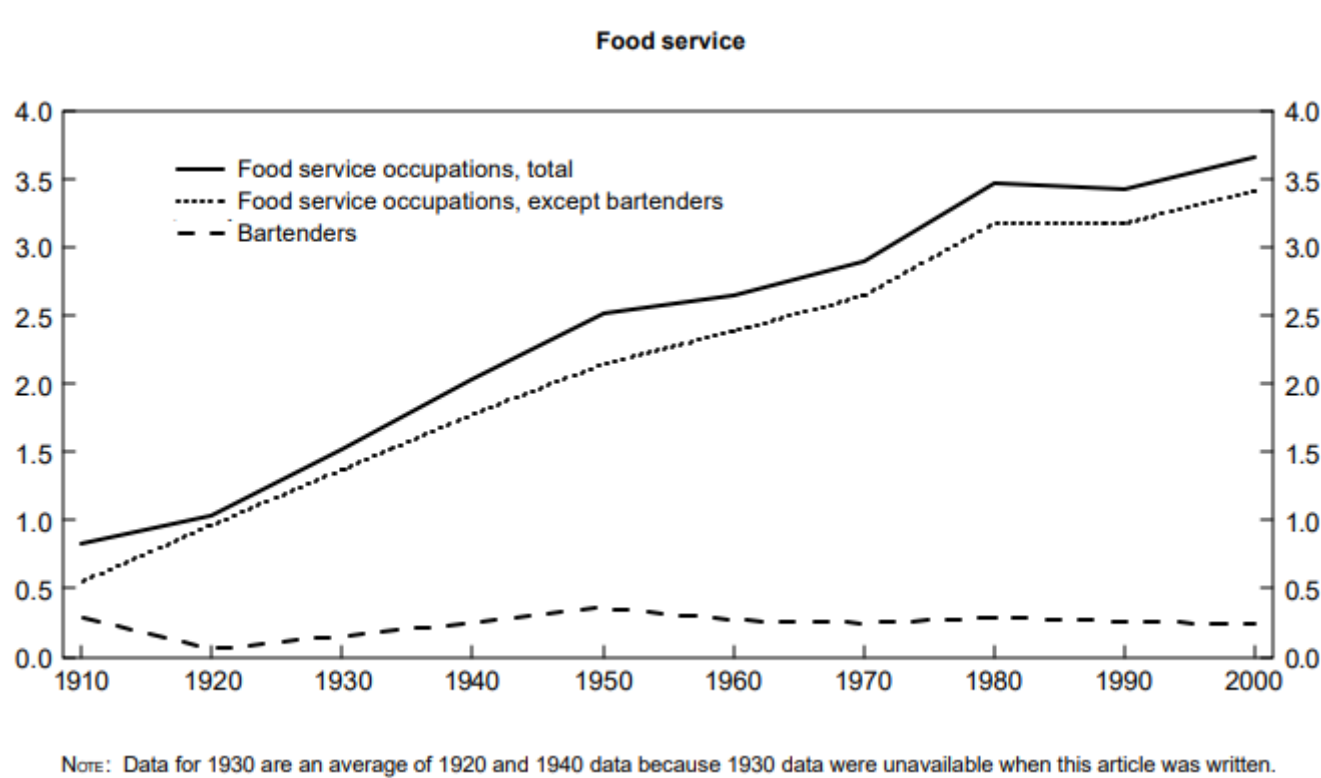


Other Examples



- Marine and intermodal shipping
- Private household service workers

Not all Disruption is Destructive



Hypothesis



- Labor intensity of transportation will go down
- Productivity of transportation will go up and costs will go down
- Employment in transportation will be disrupted (some destruction, some creation)
- Productivity overall will increase with significant net benefits to the economy overall
- Policy will be necessary to mitigate disruption but should not try to prevent the transition

Could We Be Wrong?

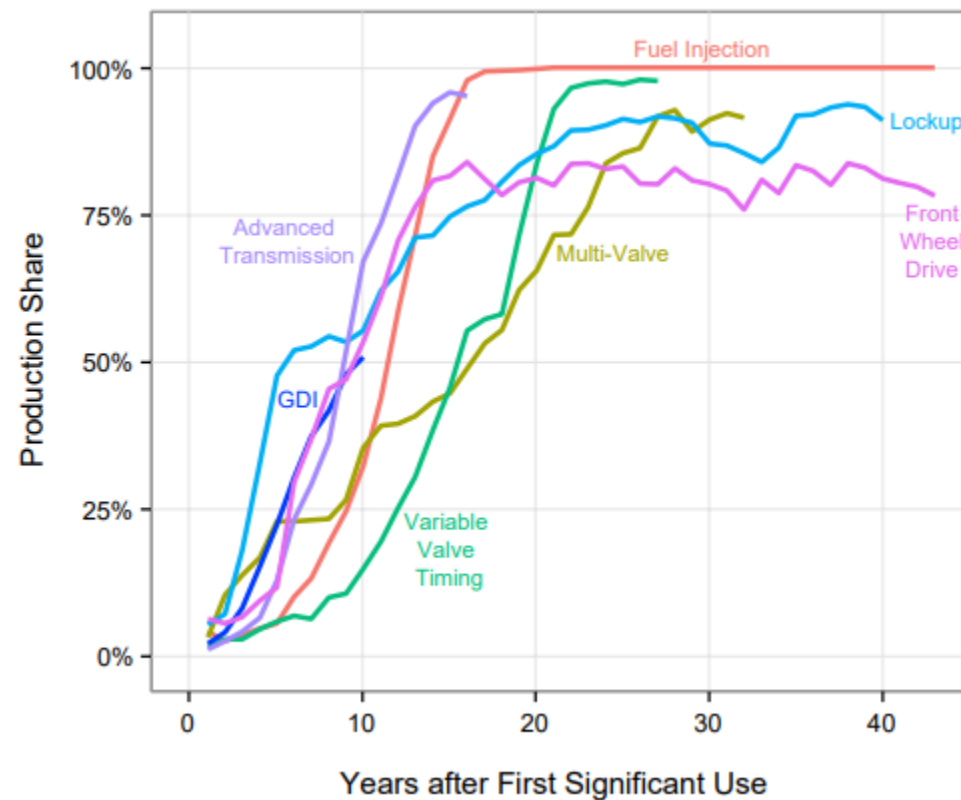


Of course we could

- This time could be faster
- This time could be different

Transportation Technology Usually Takes Decades

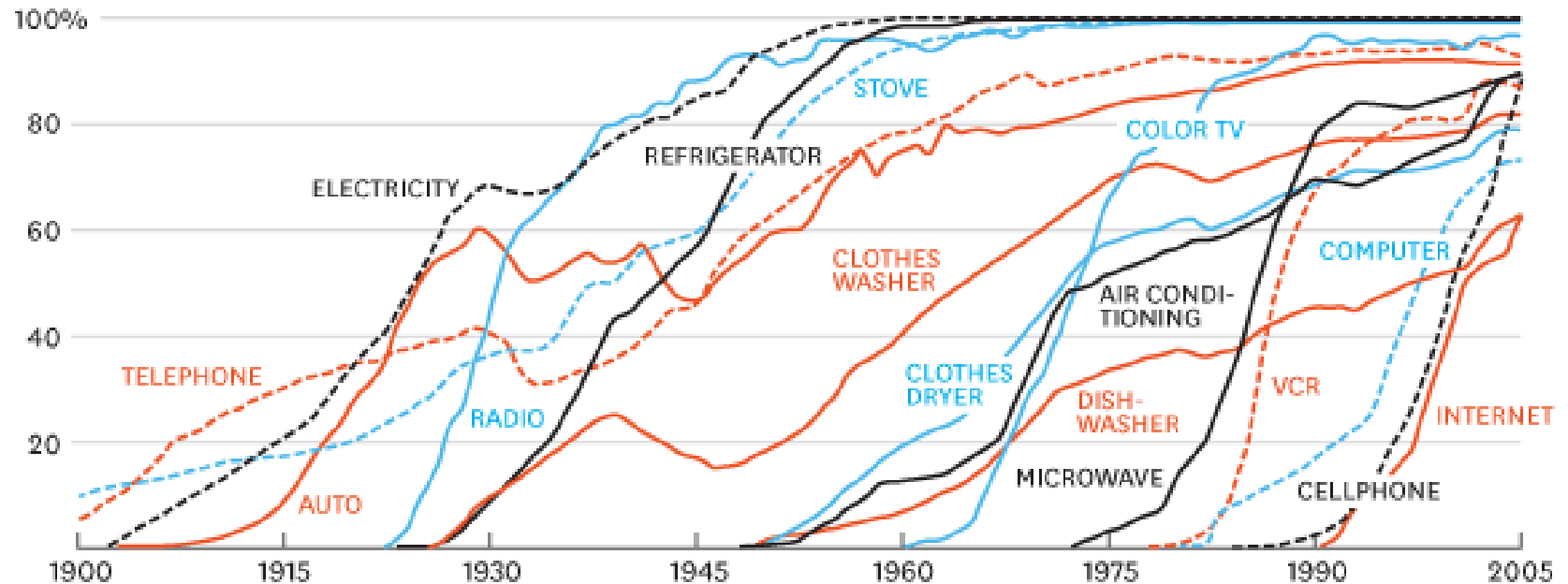
Industry-Wide Car Technology Penetration after First Significant Use



Information Technology Doesn't

CONSUMPTION SPREADS FASTER TODAY

PERCENT OF U.S. HOUSEHOLDS



SOURCE MICHAEL FELTON, THE NEW YORK TIMES

HBR.ORG

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Conclusions



- Work with the hypothesis of:
 - Concentrated disruption
 - Diffuse, large benefits
 - New jobs will become available
- Focus policy on:
 - Skills needed for new jobs (training and retraining)
 - Supporting the most disrupted jobs
- Be ready if:
 - The change is fast
 - This time is different