Emerging Technology and the Future of the Workplace

An overview of recent SCAG initiatives and research findings

Kevin Kane, PhD
Senior Regional Planner
Research & Analysis
July 24, 2019

Today’s discussion

- Link emerging technology discussion more closely with:
  - Aspects of SCAG’s 2020 RTP/SCS (Connect SoCal)
  - Trip replacement potential
  - Changing nature of the workplace
  - Not comprehensive – touches on some of these

- Outline
  - Telecommuting
  - Co-working spaces
  - E-commerce & infill potential
  - Replacing other types of trips
  - Automation potential and the gig economy

- This comes from:
  - Research & Analysis in-house work
  - SCAG Future of the Workplace consultant project
Telework in the SCAG region

- Long history in regional planning
- Segmented into:
  - Telecommuters
  - Home workers
- Deep dive into data to support regional plan assumptions

**Telework in the SCAG region**

- Technology enables more working from home
- Increasingly promoted by employers
- Fastest growing commute mode

*Source: US Census Bureau's American Community Survey*
Telework in the SCAG region

- Share of Workers that Telework

*Source: National Household Travel Survey (NHTS)*

Co-working spaces in the SCAG region

- 4% of Americans have worked in a coworking site.

*Source: Pew Research Center.*
SCAG Co-working space survey

• 273 co-working space users at 10 sites across the region
• Sites:
  • WeWork (3)
  • Regus (6)
  • Mind & Mill (1)
• Asked about travel patterns and employment characteristics
• Focus: trip-reduction potential

SCAG Co-working space survey

- Closer to home/more work-less travel, 40%
- Quieter than working at home, 7%
- Prefer social environment, 20%
- Have access to business services, 21%
- Other, 12%
SCAG Co-working space survey

Surveyed co-working space users also tend to:

- Younger
- ~ 40% make over $100,000/yr.
- Overrepresented in IT and consulting
- Generally work full-time
- Over ¾ are not freelancers or entrepreneurs
How can SCAG promote co-working?

- Developing potential strategy for Connect SoCal
- VMT/GHG benefits limited to long-distance commuters in key industries
- Focus likely on promoting co-working in job centers

E-commerce and infill development potential

- E-commerce is transformational:
  - Shopping trips
  - Delivery trips
  - Impact on retail land use
  - Likely decrease in taxable sales
Additional Trip Replacement through Technology

- **Telemedicine**
  - Dramatic recent growth due to:
    - Enabling legislation +
    - Technological advancement +
    - Patient satisfaction

- **Distance Learning**
    - Completely online programs grew from 12.5% to 15.4%
    - Students with at least one online course grew from 13.3% to 17.6%

Automation Potential

Automation will vary heavily by occupation and industry.

How might this impact a forecast of jobs in 2045?

Growth
Healthcare, social assistance, education
High skill, creativity, social intelligence

Decline
Administrative, manufacturing, driving tasks

Will robots really steal our jobs?
An international analysis of the potential long term impact of automation

Compare SCAG region jobs forecast to 3 automation estimates by industry

Defining the Gig Economy

Traditional Work Arrangements
- Full or part-time wage and salary workers
- Self-employed or non-Employers in own incorporated business

Non-Traditional Work Arrangements (Gig Workers)
- Independent contractors
- Seasonal workers
- Temporary agency workers
- On-call or contract workers
- Contingent workers

Independent Work Arrangements (Independent Workers)
- Online platform workers
- Informal arrangements

Workplace changes: How does this impact travel?

Drivers of Change
- Technology
  - Automation
  - ICT
- Demand
  - Consumer preferences
  - Demographics

Economic Changes
- Job displacement
- Job creation
- Work arrangement
- Self-employment / Freelancing

Job Changes
- Change in jobs by industry and occupation
- Change in Commute
  - Teleworking
  - Co-working

Travel Changes
- Trip Frequency & VMT by Location and Time of Day
- Other Trip Types
  - Telemedicine
  - Distance learning
• **Data Science Federation**
  - SCAG + City of LA partnership
  - Links cities/agencies with local university partners to complete 6-12 month “shovel ready” data science projects
  - [http://dsf.lacity.org](http://dsf.lacity.org)
  - *Contact* [kane@scag.ca.gov](mailto:kane@scag.ca.gov) *ASAP if your city has a project idea for 2019-2020*

• **SCAG Data Science Fellows**
  - Collaboration with *Partners for Better Health*
  - SCAG recruits *and helps fund* graduate student fellows with a data science specialization
  - 2019: LA County Public Works, City of Santa Ana, & SCAG
  - Open application link for cities and prospective fellows: [http://p4bhealth.org/get-involved/](http://p4bhealth.org/get-involved/)

---

**Thank you**

Kevin Kane, PhD

kane@scag.ca.gov

213-236-1828