

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



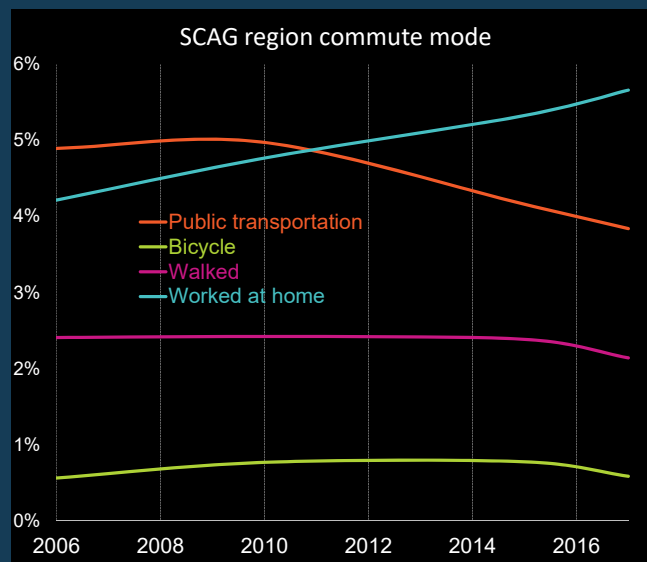
- Long history in regional planning
- Segmented into:
 - Telecommuters
 - Home workers
- Deep dive into data to support regional plan assumptions



Telework in the SCAG region

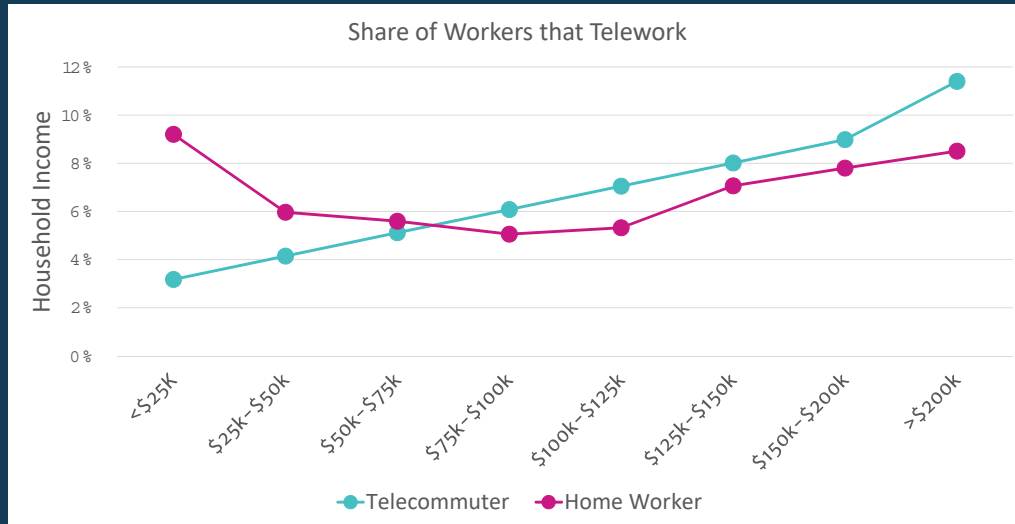


- Technology enables more working from home
- Increasingly promoted by employers
- Fastest growing commute mode



*Source: US Census Bureau's American Community Survey

Telework in the SCAG region

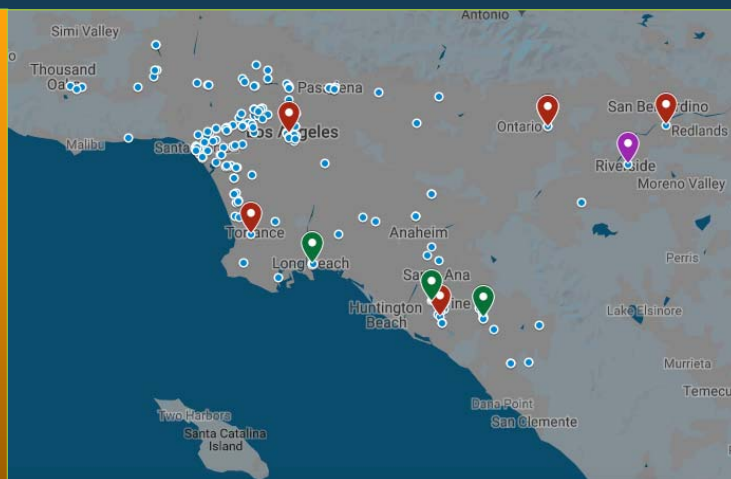


*Source: National Household Travel Survey (NHTS)

Co-working spaces in the SCAG region



4% of Americans have worked in a coworking site.



*Source: Pew Research Center.

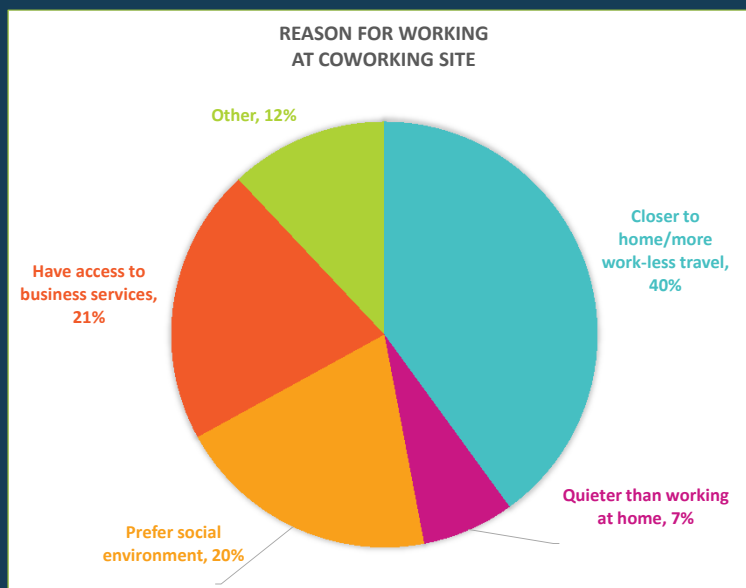
SCAG Co-working space survey



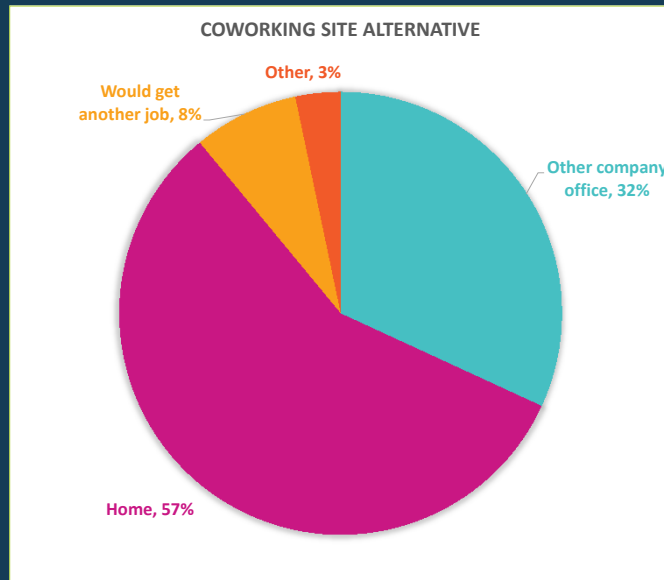
- 273 co-working space users at 10 sites across the region
- Sites:
 - WeWork (3)
 - Regus (6)
 - Mind & Mill (1)
- Asked about travel patterns and employment characteristics
- *Focus: trip-reduction potential*



SCAG Co-working space survey



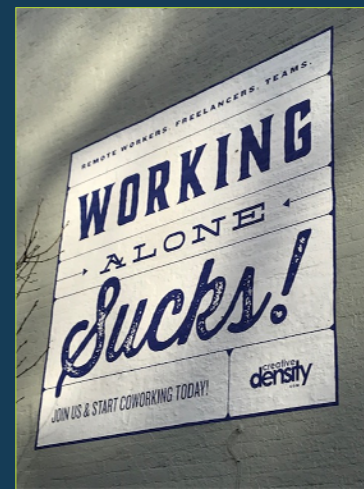
SCAG Co-working space survey



Surveyed co-working space users also tend to:



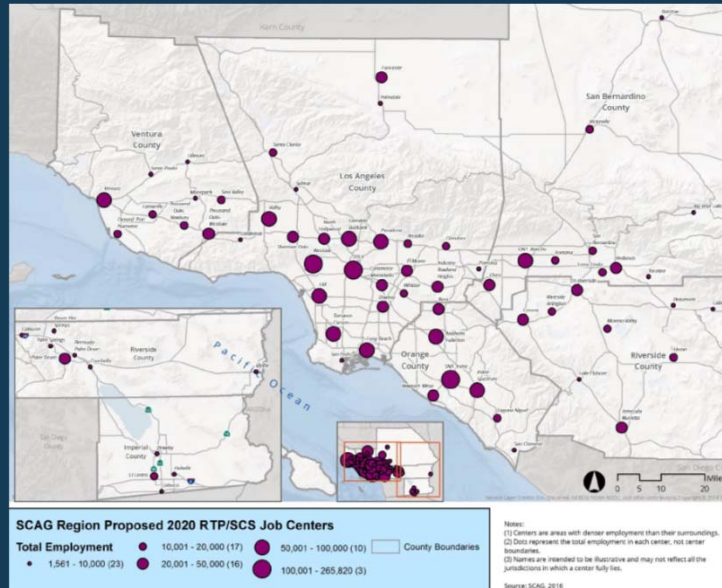
- Younger
- ~ 40% make over \$100,000/yr.
- Overrepresented in IT and consulting
- Generally work full-time
- Over ¾ are *not* freelancers or entrepreneurs



How can SCAG promote co-working?



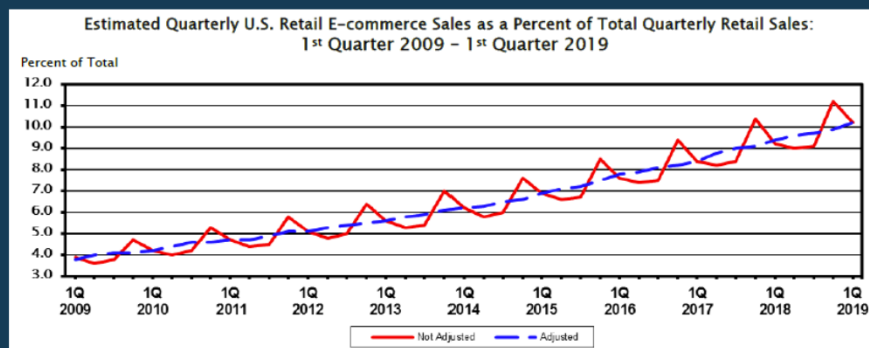
- Developing potential strategy for Connect SoCal
- VMT/GHG benefits limited to long-distance commuters in key industries
- Focus likely on promoting co-working in job centers



E-commerce and infill development potential



- E-commerce is transformational:
 - Shopping trips
 - Delivery trips
 - **Impact on retail land use**
 - *Likely decrease in taxable sales*



The Quarterly Retail E-Commerce sales estimate for the second quarter of 2019 is scheduled for release on August 19, 2019 at 10:00 A.M. EDT.

For information, including estimates from 4th quarter 1999 forward, visit the Census Bureau's Web site at <http://www.census.gov/retail>. For additional information about Census Bureau e-business measurement programs and plans visit <https://www.census.gov/programs-surveys/e-stats.html>.

* The 90% confidence interval includes zero. The Census Bureau does not have sufficient statistical evidence to conclude that the actual change is different from zero.

SCAG/Orange County Business Council Collaborative Research

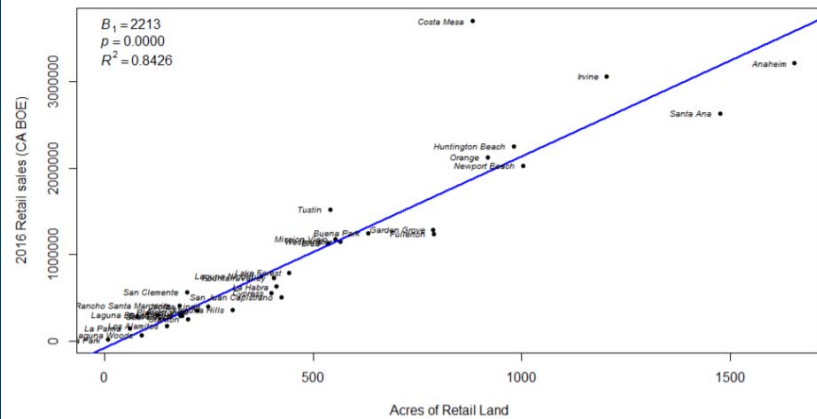


RETAIL LAND USE IN ORANGE COUNTY:

An Examination of Future Potential
A joint SCAG-OCBC white paper
APRIL 2018



FIGURE 12: A MEASURE OF RETAIL LAND USE EFFICIENCY: SALES VS. ACRES (2016)



<http://scag.ca.gov/Documents/RetailLandUseReportInOC.pdf>

Additional Trip Replacement through Technology



• Telemedicine

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




• Distance Learning

- US Department of Education higher education data (2012-2017):
 - Completely online programs grew from 12.5% to 15.4%
 - Students with at least one online course grew from 13.3% to 17.6%



See, e.g. Barnett, Ray, Souza, and Mehrotra 2018. Trends in telemedicine use in a large commercially insured population, 2005-2017. *Journal of the American Medical Association* 320 (20).

Automation Potential



Automation will vary heavily by occupation and industry.

How might this impact a forecast of jobs in 2045?

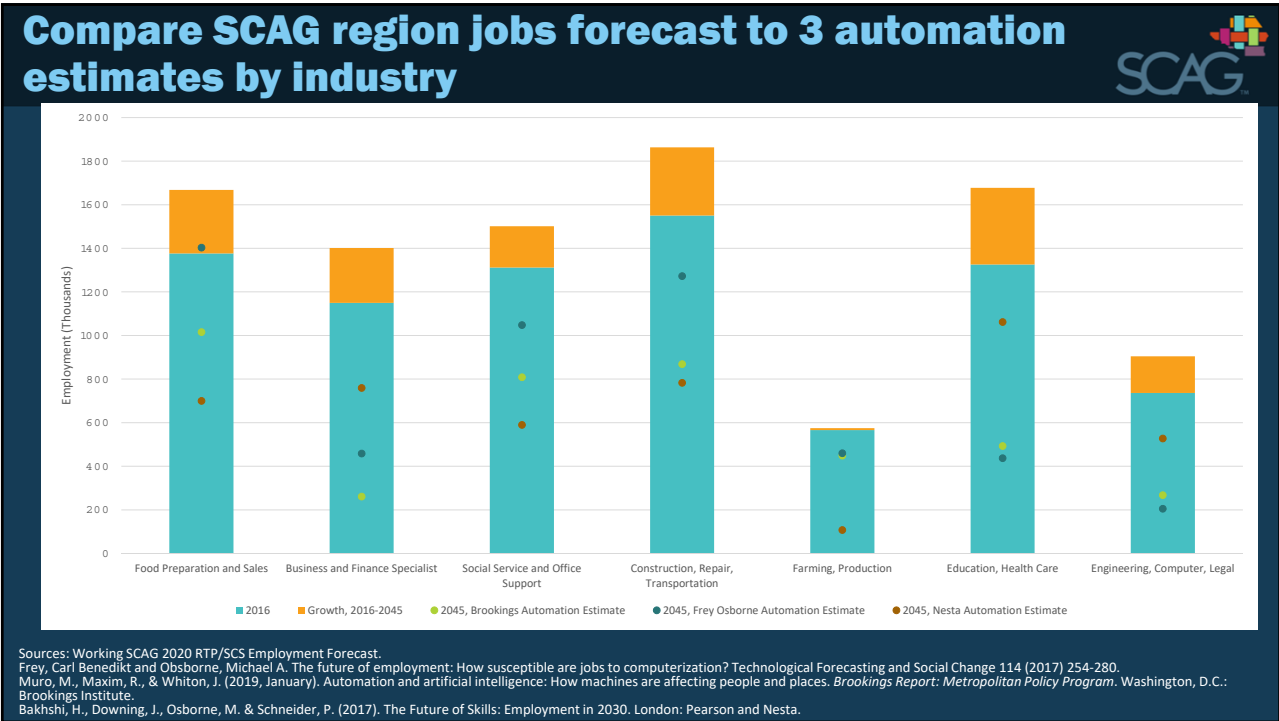
Growth Healthcare, social assistance, education
High skill, creativity, social intelligence

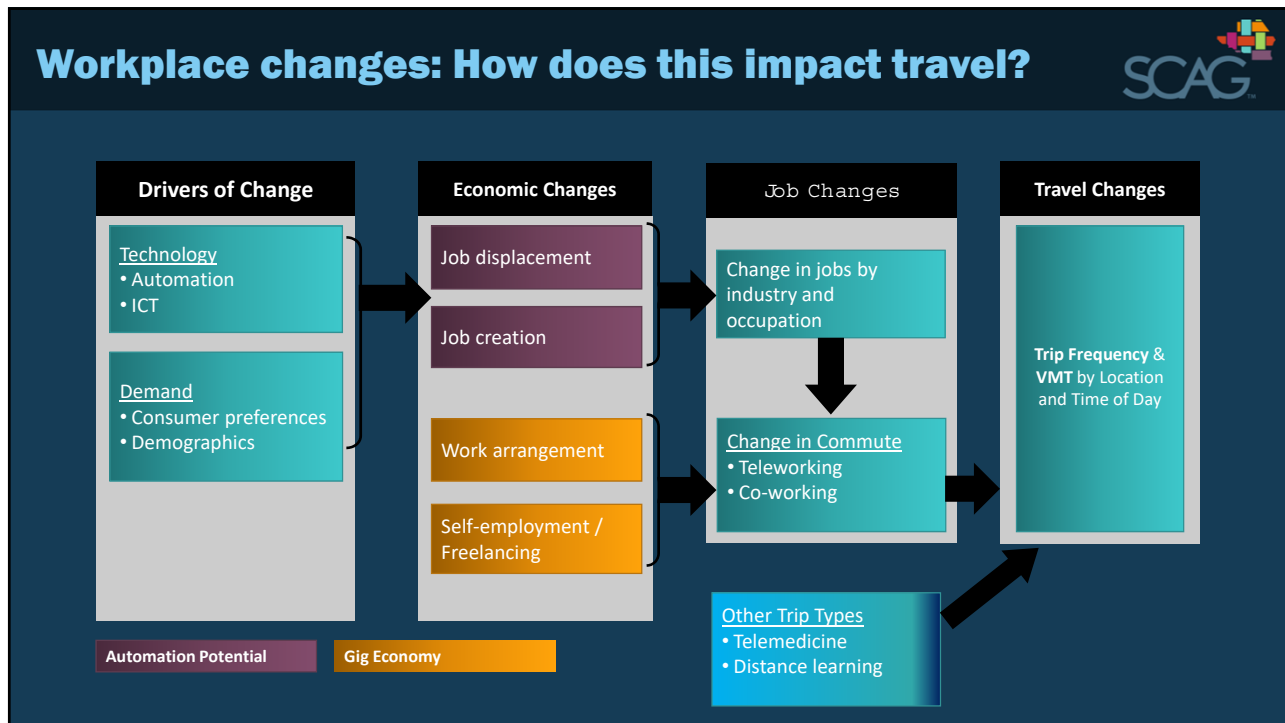
Decline Administrative, manufacturing, driving tasks

MCKINSEY GLOBAL INSTITUTE
JOBS LOST, JOBS GAINED: WORKFORCE TRANSITIONS IN A TIME OF AUTOMATION
DECEMBER 2017

www.pwt.co.uk/economics
Will robots really steal our jobs?
An international analysis of the potential long term impact of automation

AUTOMATION and ARTIFICIAL INTELLIGENCE
How machines are affecting people and places





SCAG Future Communities – Related Opportunities



- **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>
- Contact kane@scaq.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/>

Thank you

Kevin Kane, PhD

kane@scag.ca.gov

213-236-1828

