



H O R I Z O N

The Bay Area Future of Jobs

Horizon Perspective Paper #4

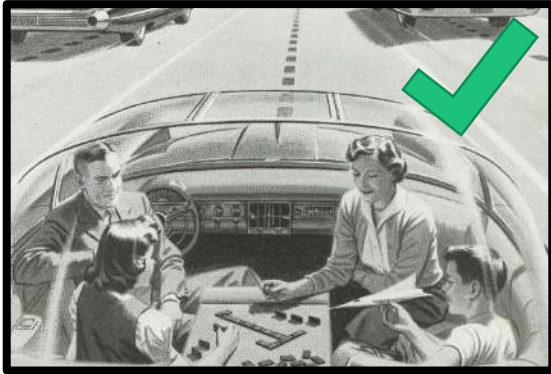
May 20, 2019, San Mateo Public Library

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ABAG / MTC

Perspective Papers Overview



1) Autonomous Vehicles



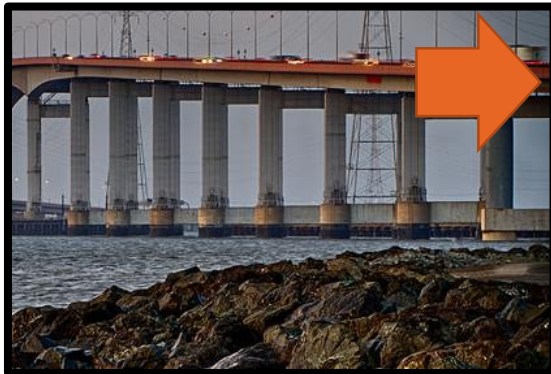
2) Toward a Shared Future



3) Growth Strategies



4) The Future of Jobs



5) Bay Crossings



6) Sea Level Rise

Priority strategies from Horizon will be considered for inclusion in Plan Bay Area 2050 - starting in September 2019.

Motivation

Regional Agencies ABAG and MTC

- Charged with 20+ year land use / transportation investment plans
- Last plan (2017) projected
 - Hollowing out of middle income households over by 2040
 - **Housing crisis** could be seen as **income crisis**
- Plan Short Term “Action Plan”
 - Housing (CASA)
 - Economic Development (CEDS)
- Question: did we think about the robots?



Perspective Paper 4: The Future of Jobs

Purpose

Review key trends affecting the regional labor market and job prospects of Bay Area residents

How will these trends affect the region and its diverse communities?

Identify priority strategies on the state, regional, and local levels to address planning challenges associated with a changing regional economy

Continue the conversation related to the emerging economic development role of the regional agencies in preparation for *Plan Bay Area 2050*

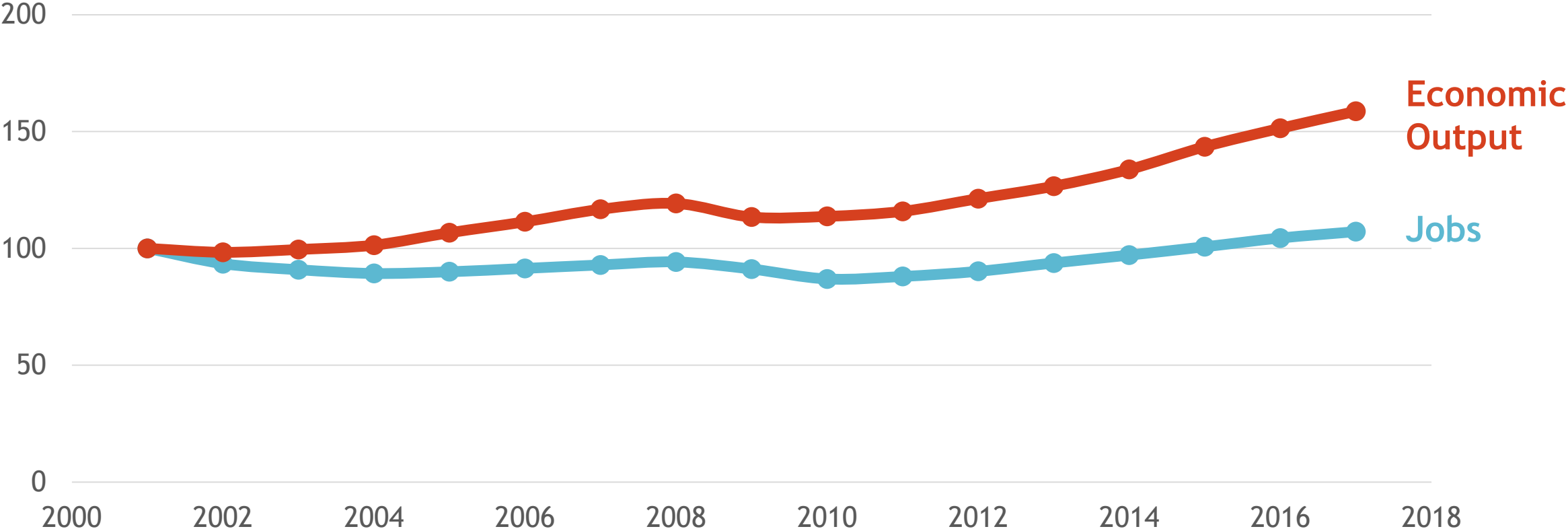
Background: Economic Foundations



<https://st.llnl.gov/?page=1>

Productivity Grows at Faster Rate than Jobs

Jobs and Economic Output Trends - Bay Area (compared to 2001 base year)

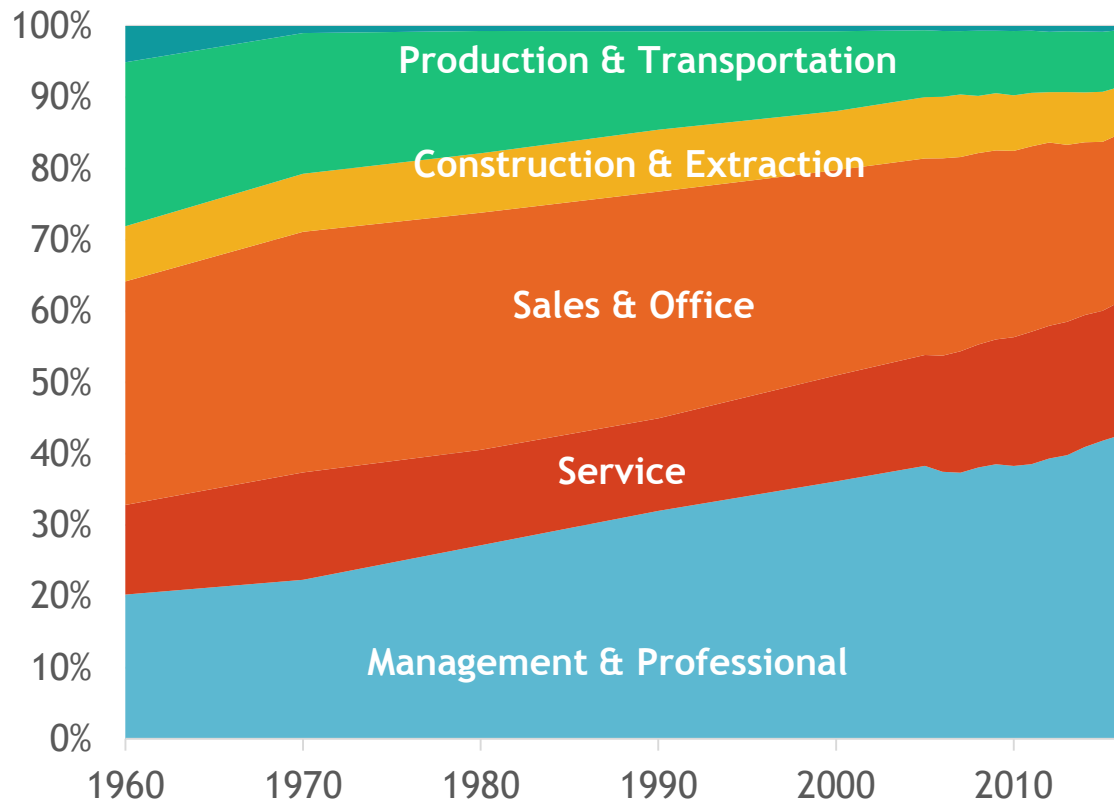


Sources: Bureau of Economic Analysis, 2001 to 2017



Knowledge-Sector Jobs Continue to Grow, Particularly in the Tech Sector...

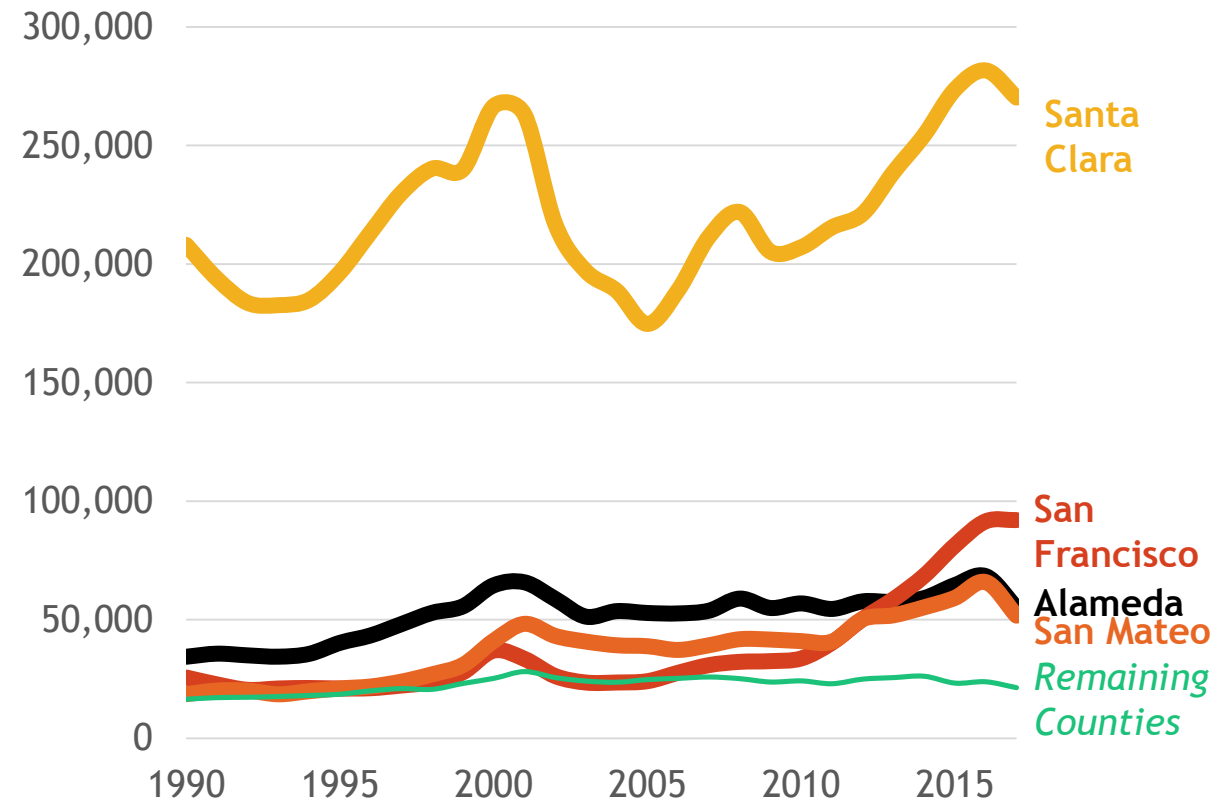
Share of Jobs by Occupation - Bay Area



Source: PUMS, 1960 to 2016

[Overview](#)

Technology Job Trends - by County



Source: QCEW, 1990 to 2017

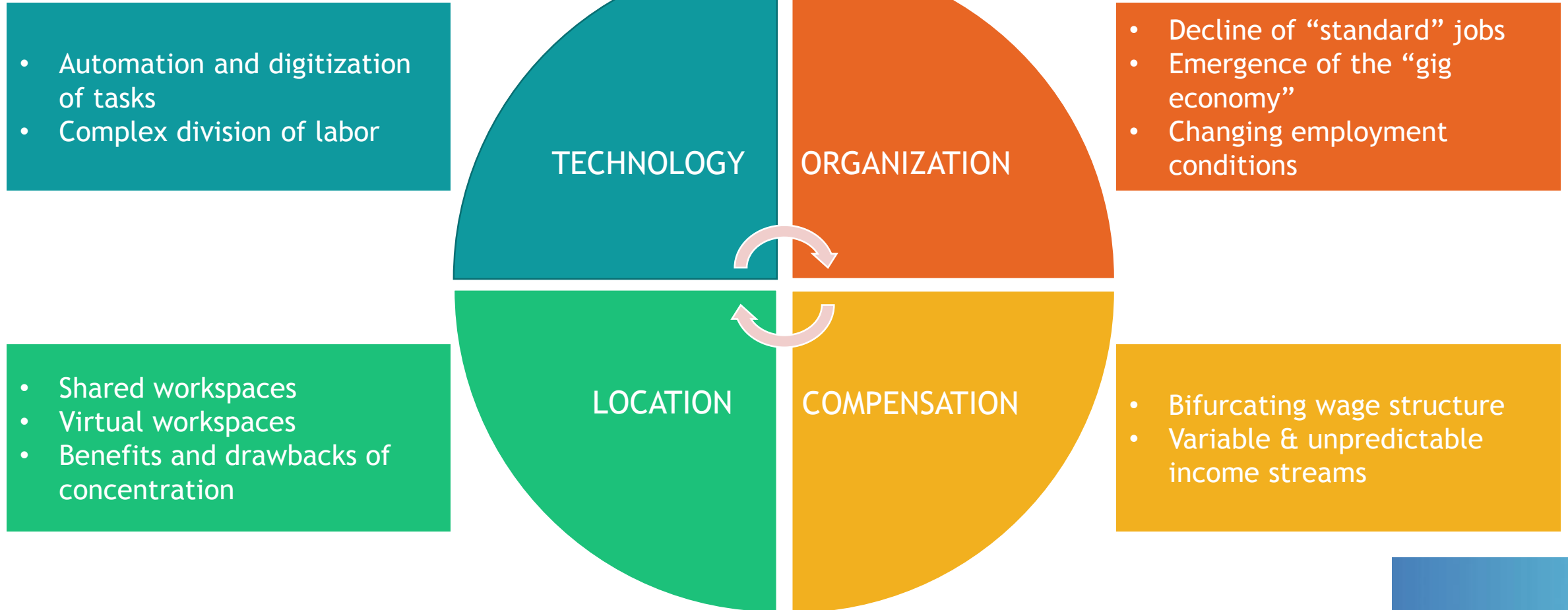
... While Industrial and Manufacturing Jobs Continue to Decline.

- **Jobs requiring physical labor have declined** in recent years, including industrial and construction jobs.
- **Service-sector jobs have grown** both knowledge-sector jobs as well as personal and food services.
- **Missing middle hollowing out** in action?

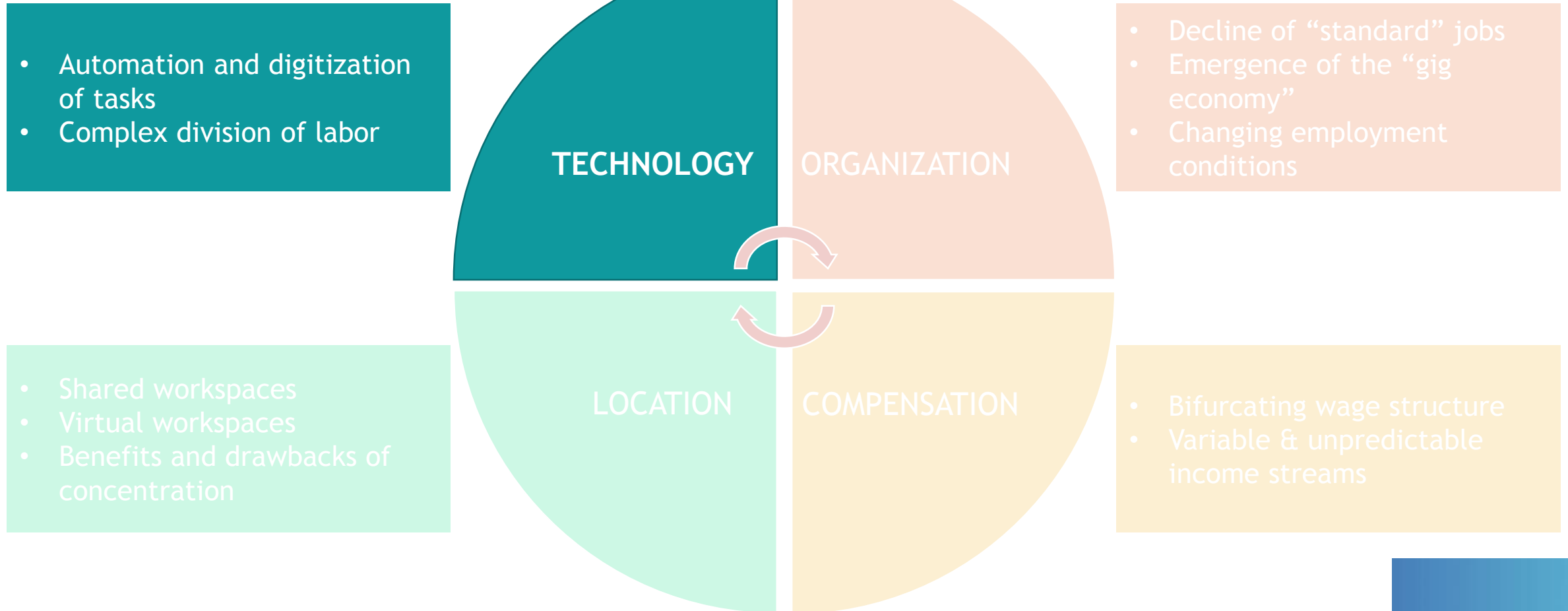
Select Occup. Changes in Bay Area Jobs: 2000 to 2017




Bay Area Future of Jobs: Four “Lenses” of Change



Jobs Are Changing in Several Ways...





“For [the Bay Area], I see nothing but continued future growth pressures. And they will be exacerbated because it’s the lower level “routinized” jobs that can be most easily automated and replaced by AI in the future.”

- Managing Director, Strategy + Innovation, real estate
service firm

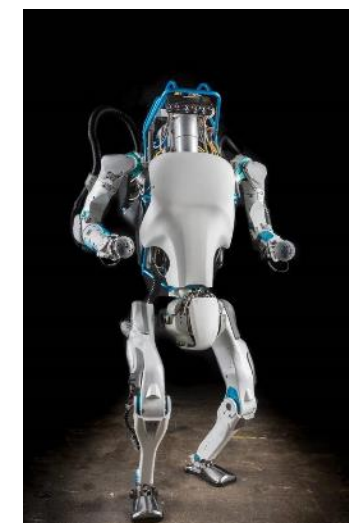
Automation Creates Both Opportunities and Risks

- Vexing for regional economists and planners
- Grows the economy in the aggregate, while issuing pink slips
- Balancing act: Speed matters
- Fate of regions tied to the success of their economies



New wave(s) of automation

- Big data, distributed computing power and deep learning neural networks: **pattern recognition at scale**
 - Classifying legal documents, finding flaws in contracts, analyzing health records, scoring credit risks
- **Complement or competition?** Likely both.
- Challenge: **Embrace** digital innovation, automation but **support** labor markets, communities



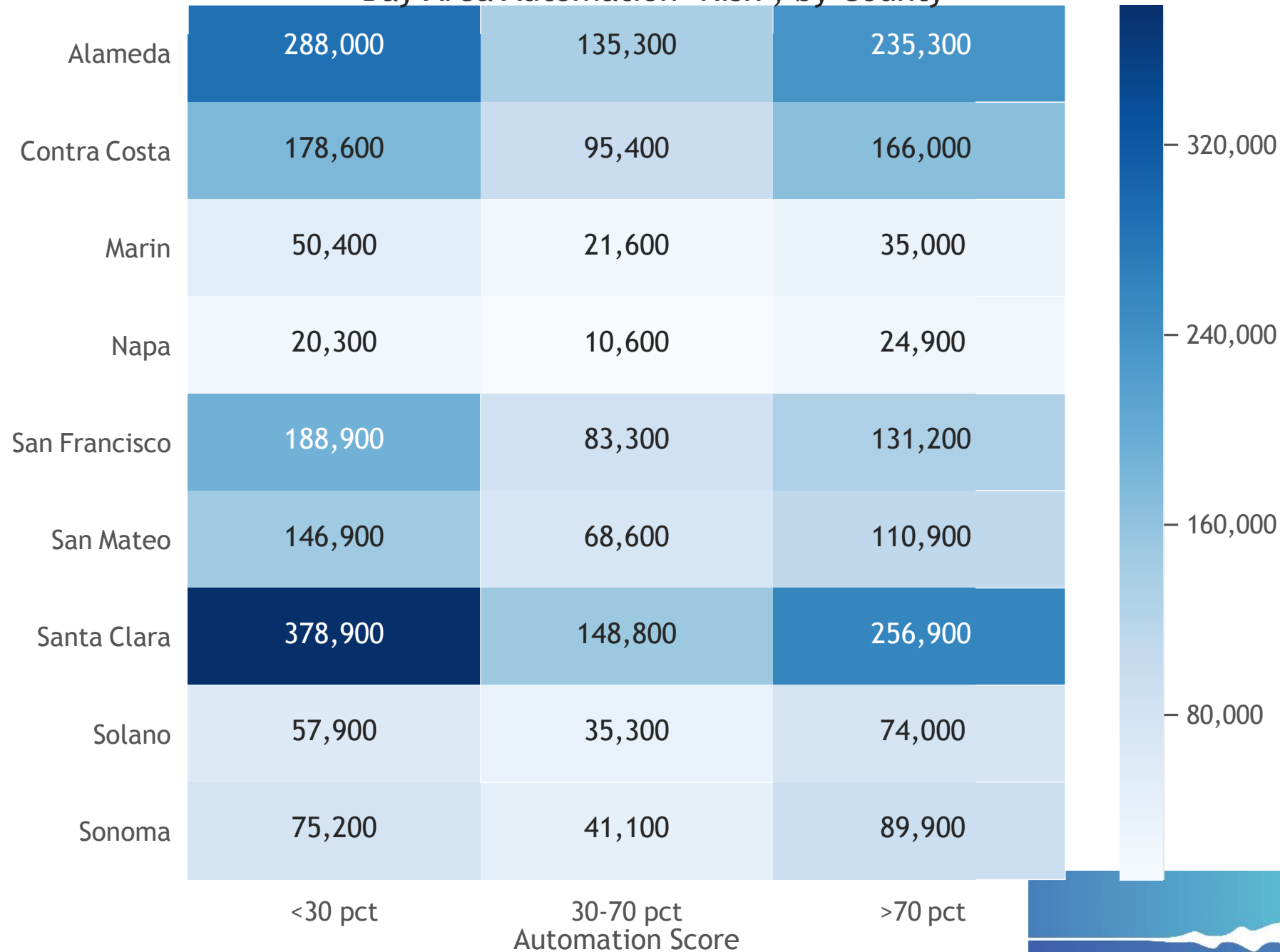
Scale Question: What kind of automation will AI be?



Which areas are most at risk?

- Strategic development functions and skills highly concentrated here-likely to continue, even increase
- North Bay Counties: more workers in high risk category,
- South Bay, West Bay: Lower, middle

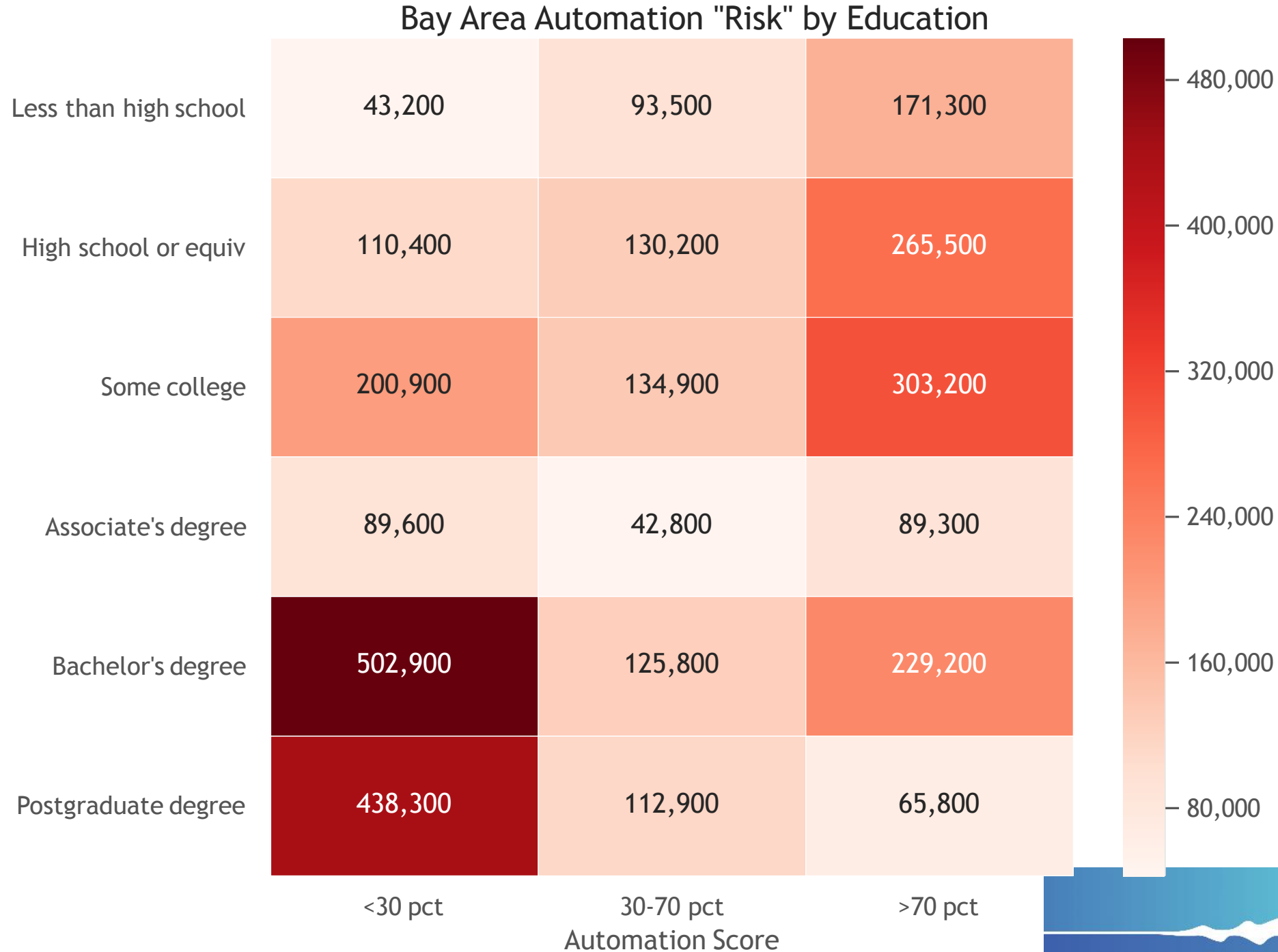
Bay Area Automation "Risk", by County



Source: Automation Data From Frey & Osborne 2017; Demographic Data From US Census ACS PUMS 2015-2017

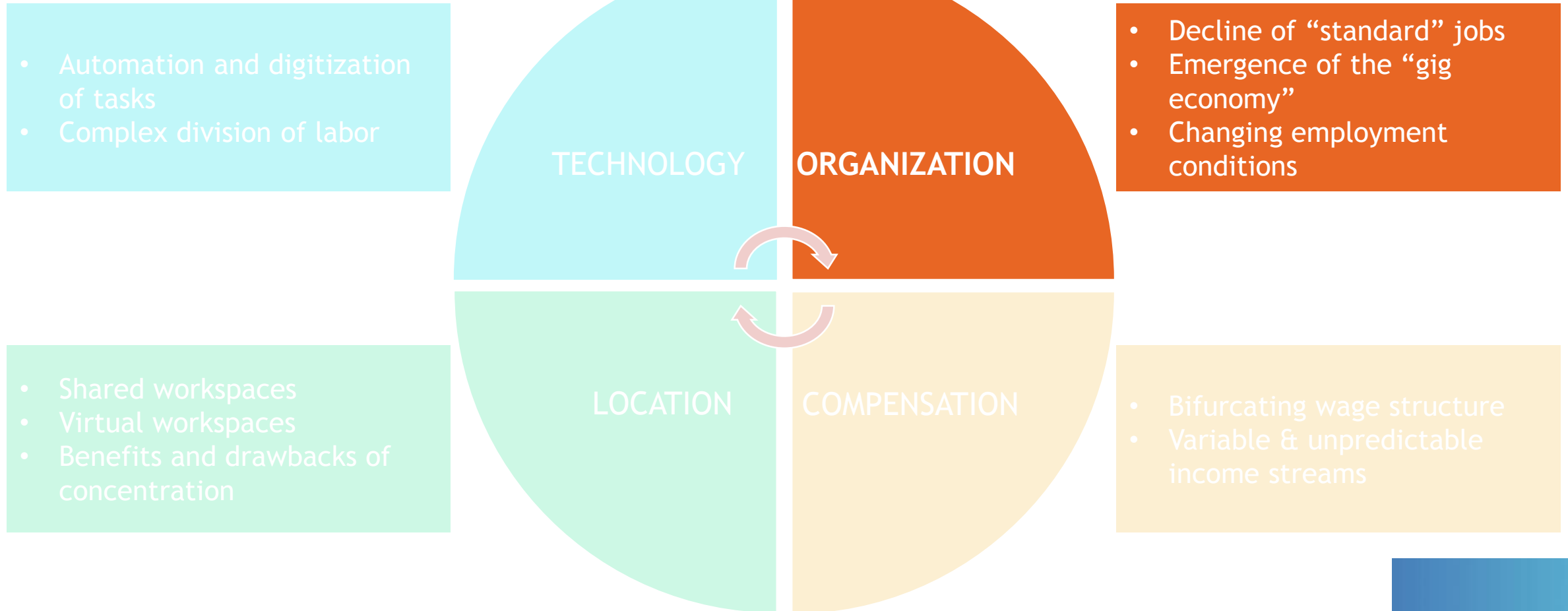
Education and risk

- Education reduces risk
- For many education groups, workers in low or high risk groups, less in middle



Source: Automation Data From Frey & Osborne 2017; Demographic Data From US Census ACS PUMS 2015-2017

Jobs Are Changing in Several Ways...



“This whole idea of an “API economy” is a big deal. ... Companies can now seamlessly outsource many pieces of their business. They can get access to programmers through the gig economy roles. There's no doubt that this will continue to play out in the world of big companies as well.”

- Managing director, executive search firm

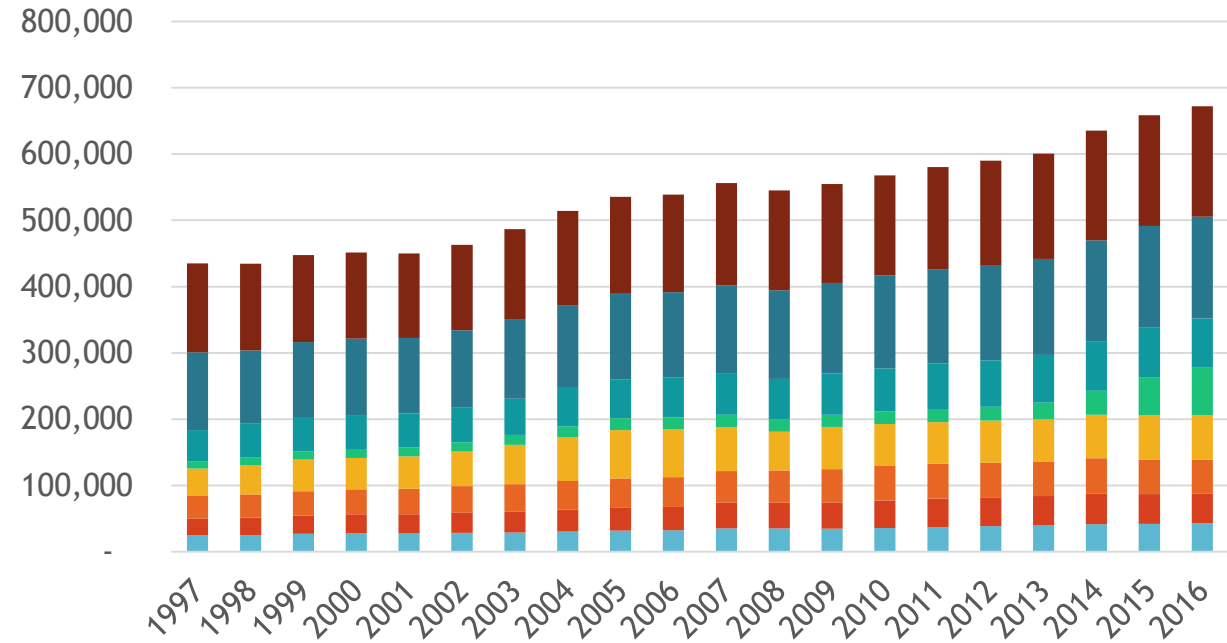
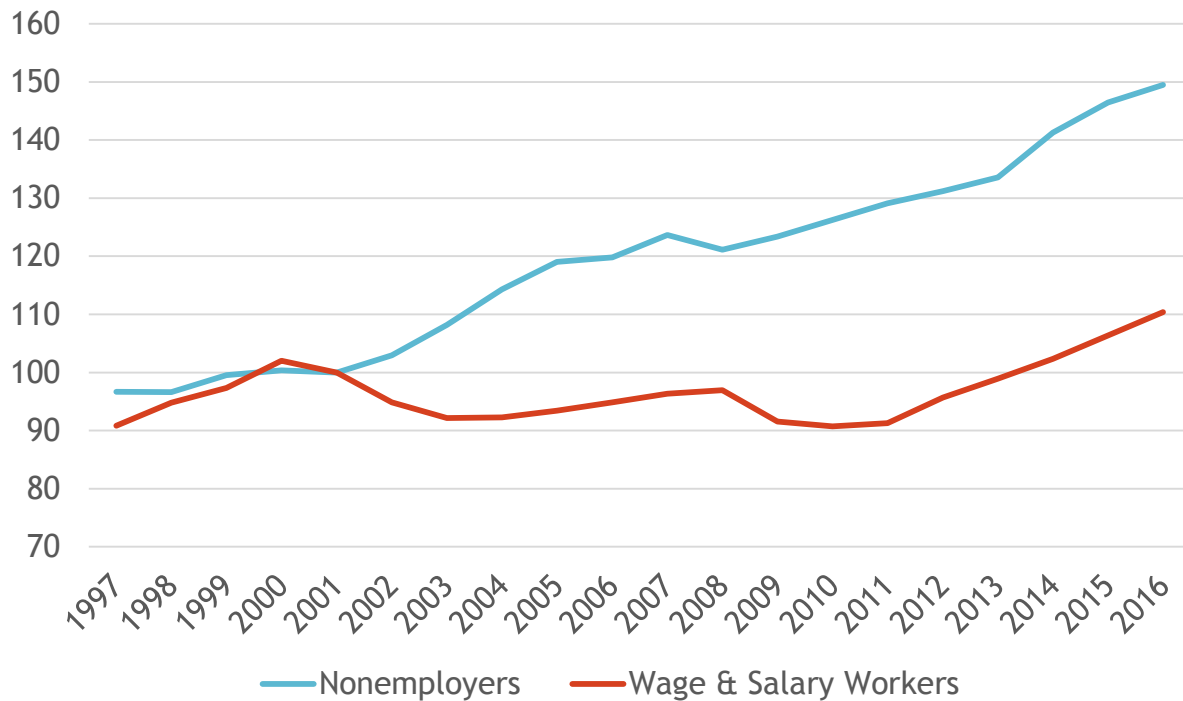
Alternative Work Arrangements

- **More fluid labor markets (agency temp, contract, short term)**
- **Independent work opportunities are expanding**, accelerated by new technologies, organizational changes
- **Advantages include:**
 - More choices on how to work
 - Flexibility on when to work
 - Cash on the side
- **At the same time, there are challenges:**
 - Less obvious career ladder jobs
 - Income instability
 - No guaranteed benefits (e.g., medical)
 - No pensions/retirement benefits



Bay Area: Nontraditional Employment Outpaced Wage + Salary Employment

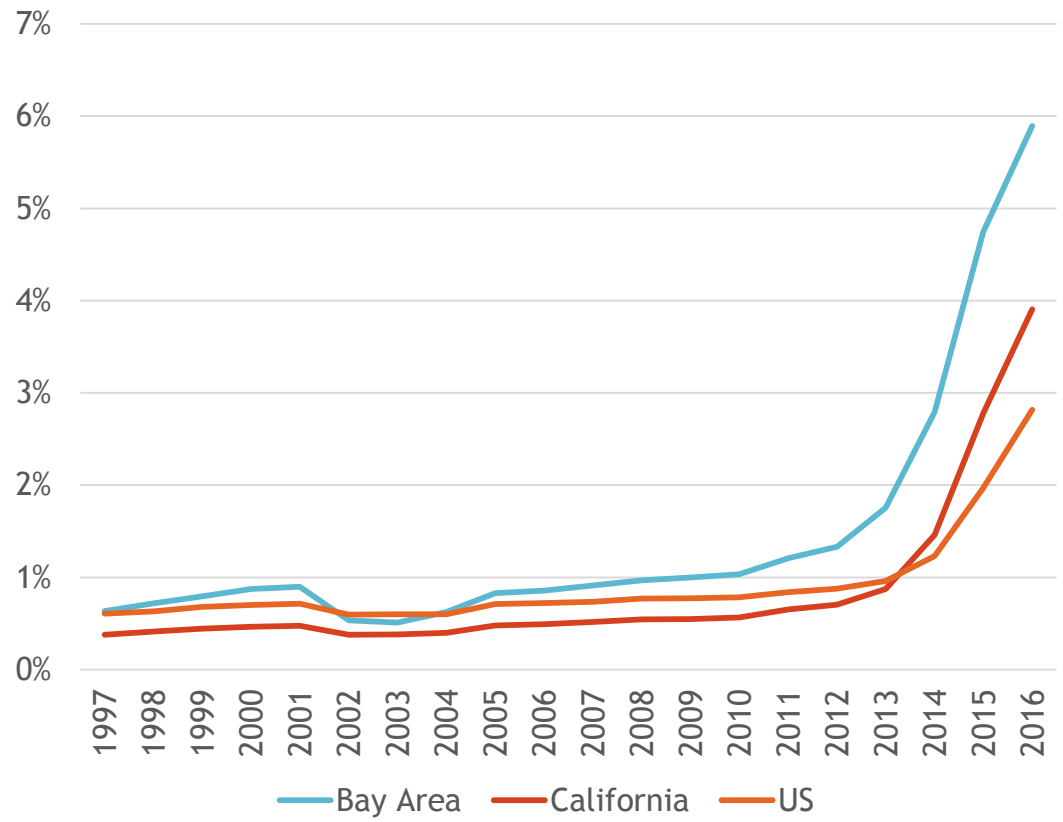
Wage & Salary Jobs and Nonemployer Establishments (2001: Index 100)



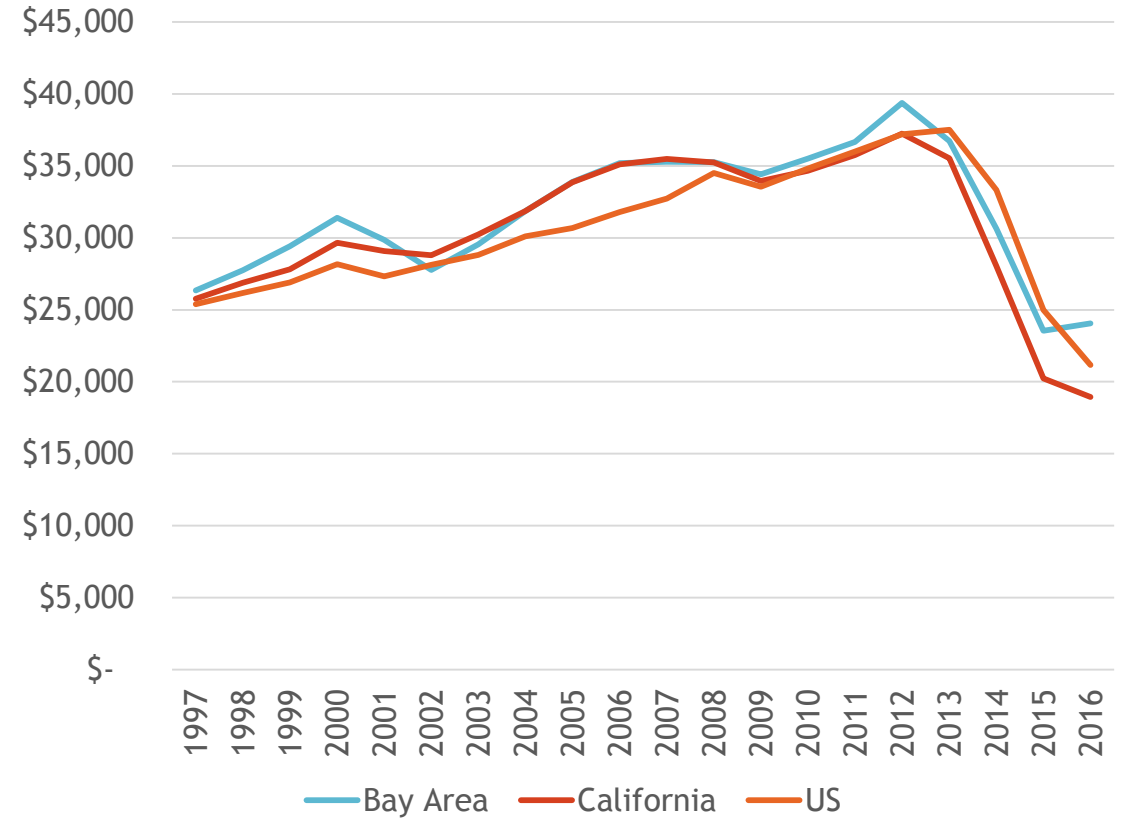
- Remaining Industries
- Professional, Scientific, and Technical Services
- Other Services (except Public Administration)
- Transportation and Warehousing
- Real Estate and Rental and Leasing
- Health Care and Social Assistance
- Administrative and Support and Waste Management and Remediation Services
- Arts, Entertainment, and Recreation

Ride Sharing More Common in Bay Area than CA, US

Share of Sole Proprietors, Count Taxi and Limousine Service



Receipts per Worker Taxi and Limousine Service

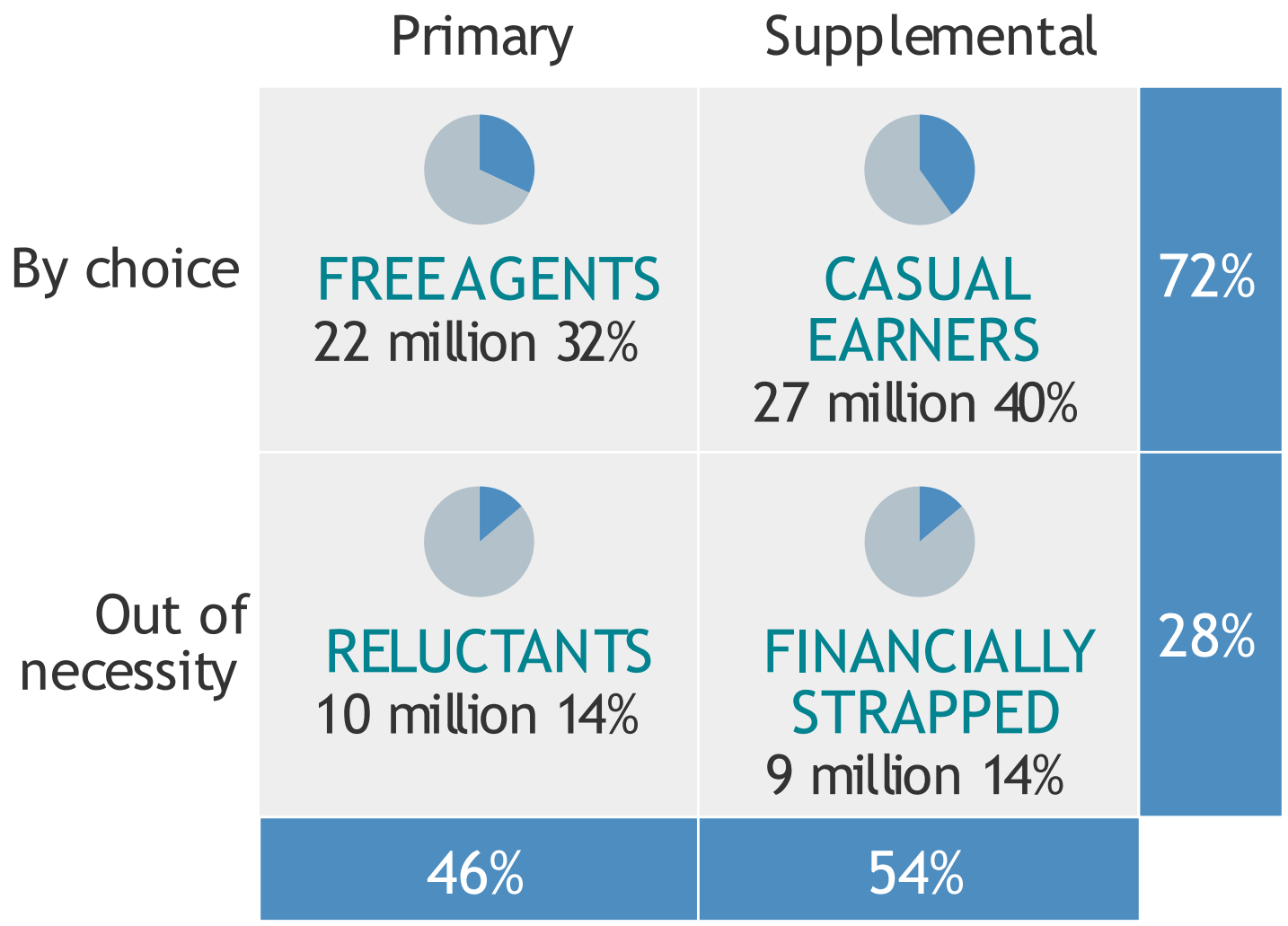


Source: US Census, Nonemployer Statistics



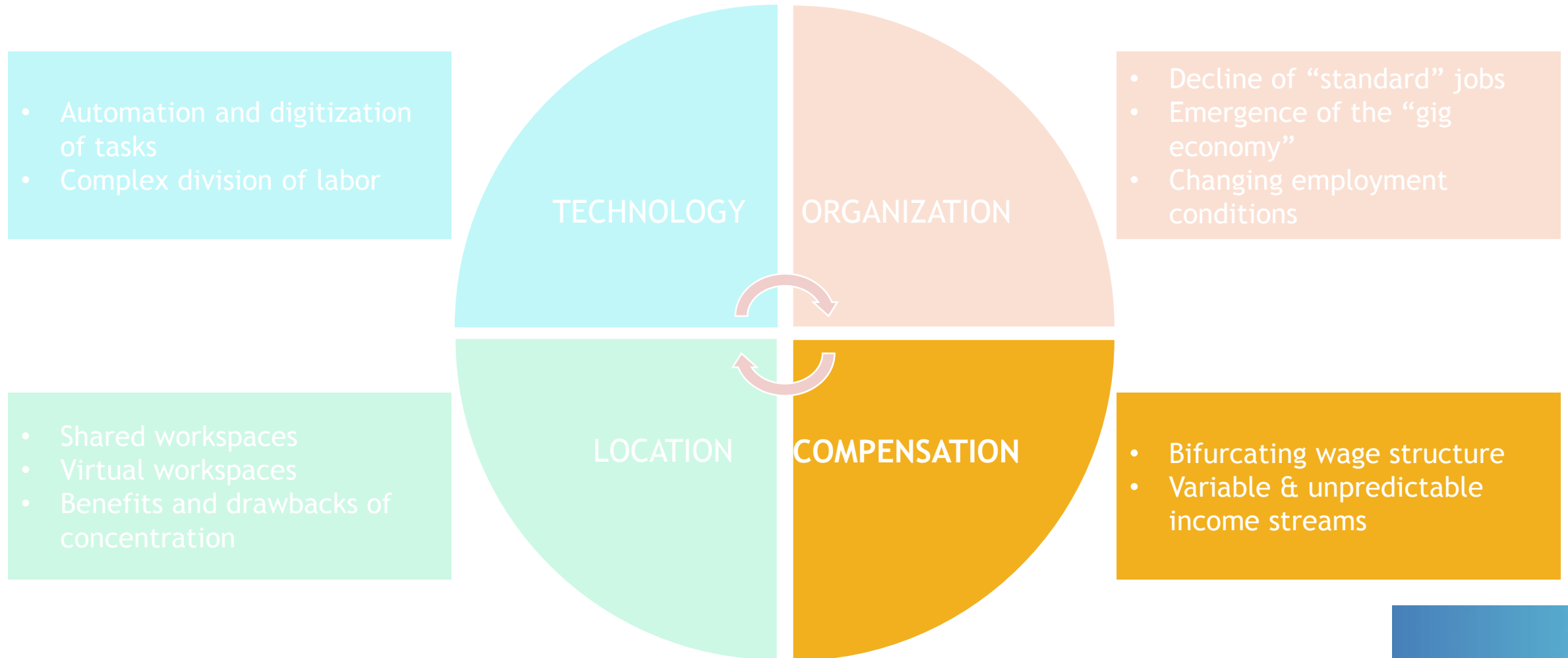
For Types of Independent Workers

- Just under half of independent workers have it as **primary source of income**
- “Casual earners” are the largest demographic, accounting for 4 in 10 workers (US data)



Source: US data, Manyika et al. (2016)

Jobs Are Changing in Several Ways...

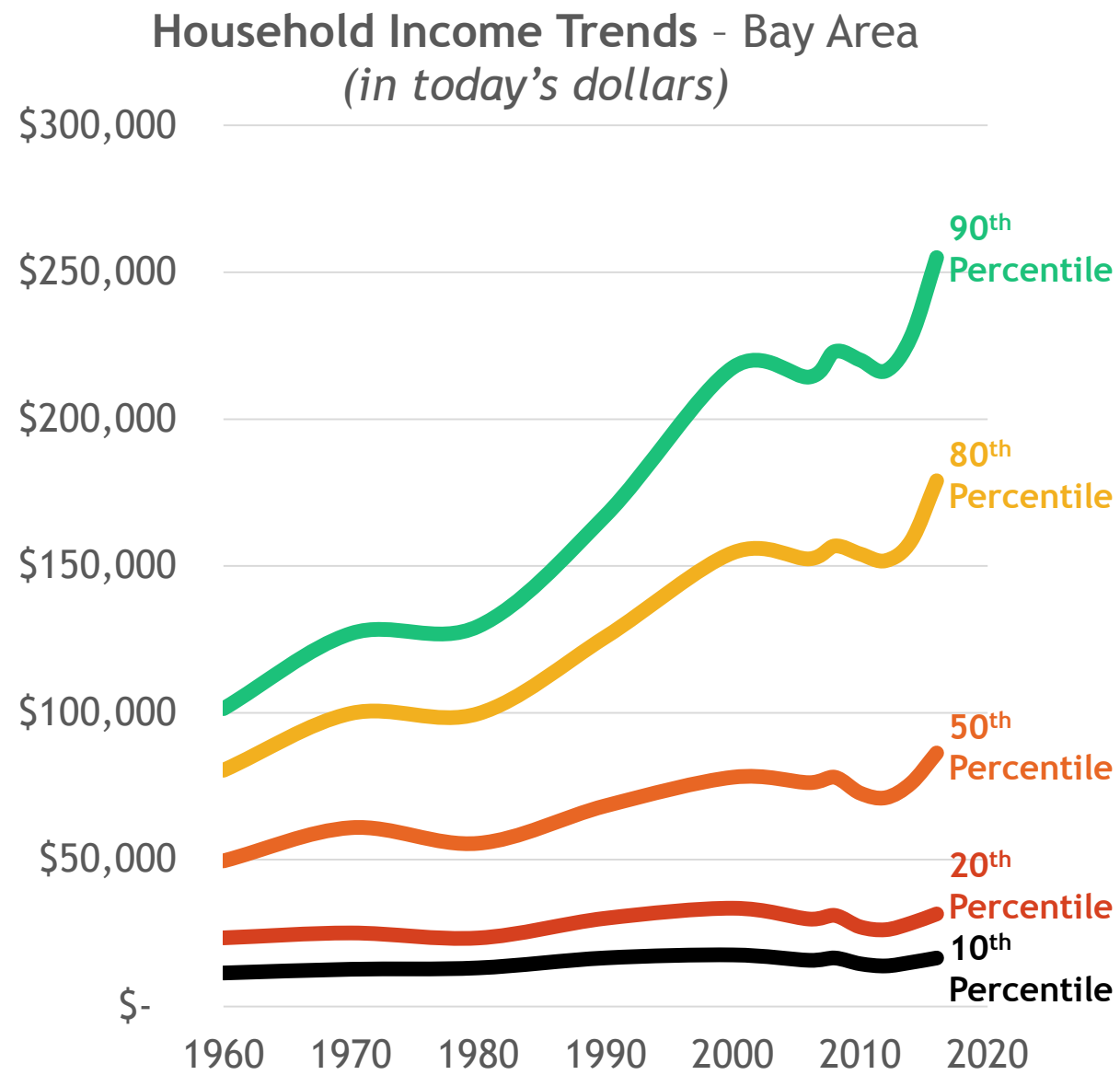


“One contributor to wealth inequality is being driven by digital transformation - as the Superstars become bigger Superstars; and some Superstars become Supernovas. ”

- Managing Director, Strategy + Innovation, real estate service firm

Incomes are Growing - but Not for Everyone

- **Wages are bifurcating**, with growing incomes for the wealthy while lower-income households' earnings remain relatively stagnant.
- **Returns to skill**: Technology has favored grads
- **Income inequality has been rising since the 1970s**; just over 10 countries are more unequal than the Bay Area.



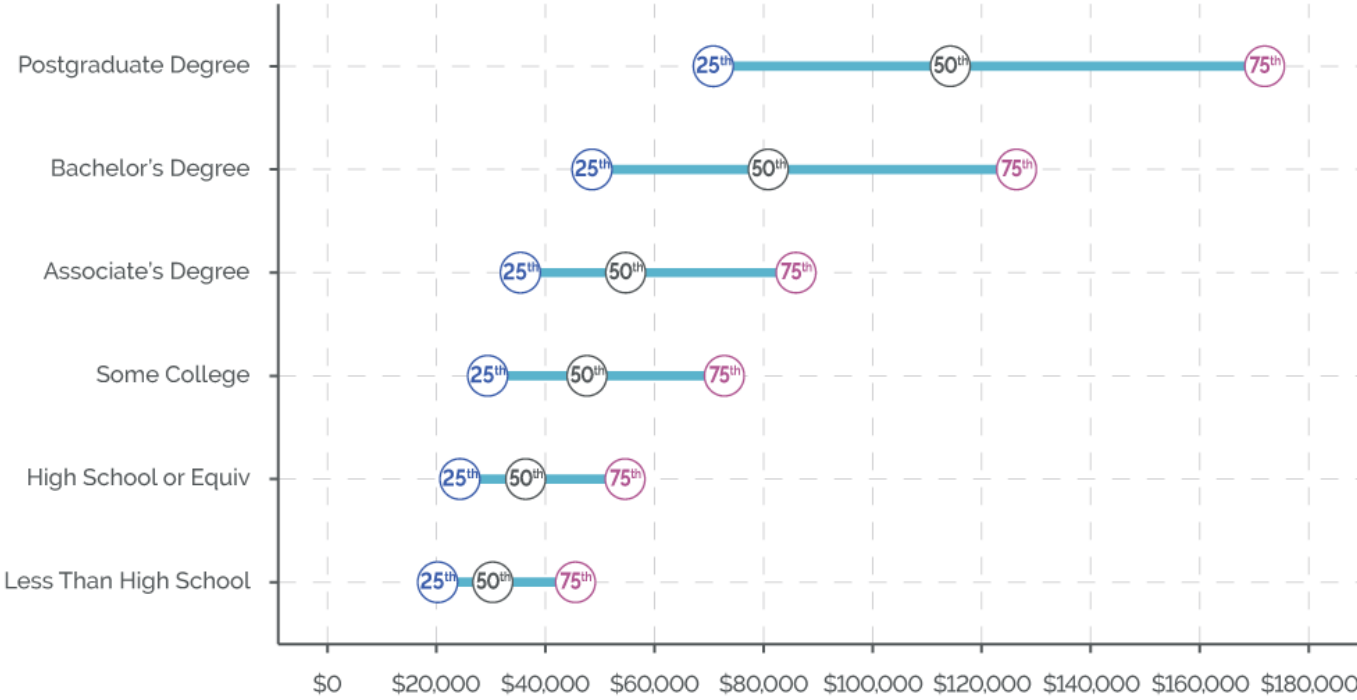
Source: iPUMS, 1960 to 2016



Part of story is education

- **Education is the typical road to higher wages**—but it may not be enough - more agile training and funding needed.
- **Occupational shifts also loom large** with rise in low pay service sector work
- **Securing livelihoods** may require intervention—particularly as low skill work may be less valuable in the future

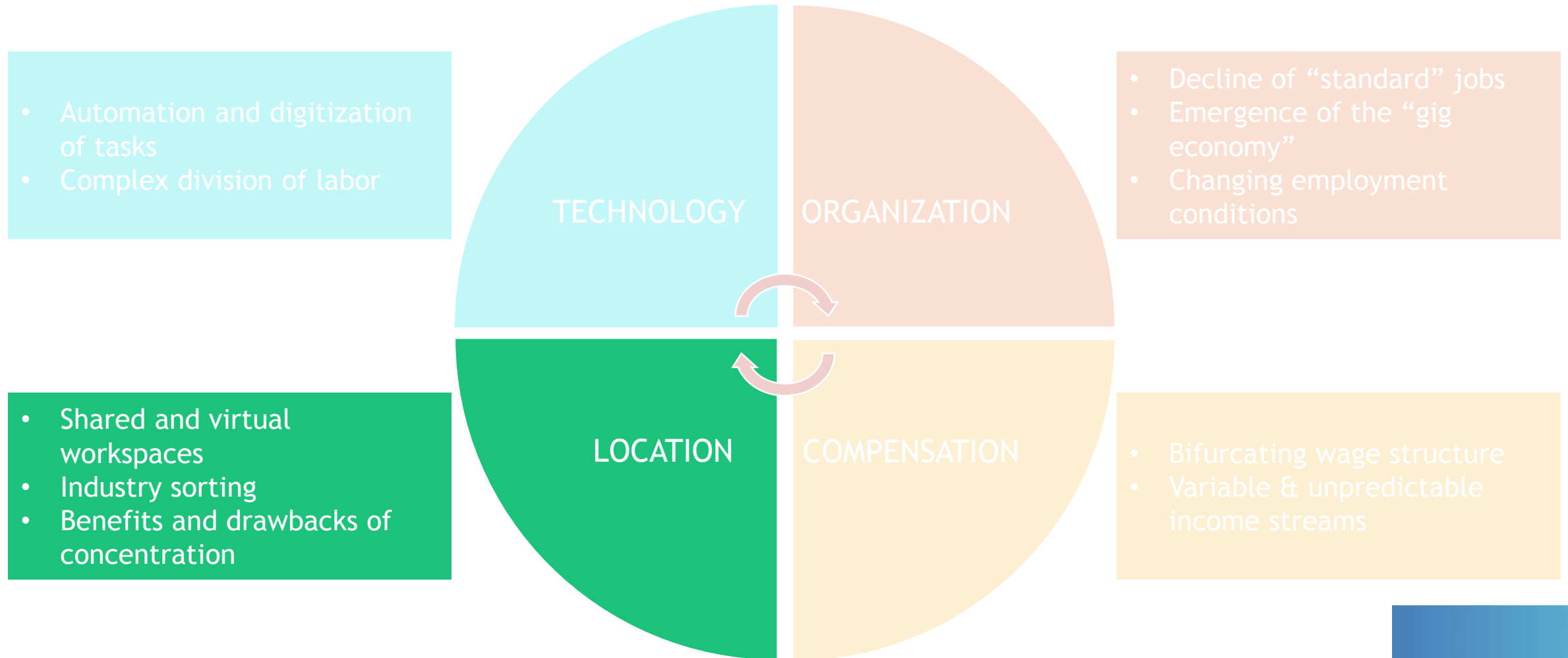
Bay Area 2017 Wages (>32 hours/week) by Educational Attainment
Bay Area: 25th Percentile to 75th Percentile




Source: Us Census Bureau, ACS PUMS (1-year), 2017



Jobs Are Changing in Several Ways...





“The city is a living laboratory which I think is critical to the operations of a lot of small to midsize tech firms; whether it's a delivery service or something fashion based ... they thrive off the energy of the city and it [offers] the ability to implement beta versions of whatever it is they're doing within mere blocks of where they operate.”

- Industry Lead, Architectural Services Firm

A Changing Regional Landscape?

- **Urban Space or Cyberspace:** Paradoxically, automation enhances **growth in city centers as face-to-face interactions** remain valuable.
- **Decline of manufacturing:** Transition to more dense, amenity rich employment centers: SF, South Bay hold more workers in the same buildings: new modes / spaces of working.
 - Many suburban office parks repurposed, made more amenity rich. More like cities
 - Long term impacts to transportation, housing
- **Lower barriers to entry: Flexible work sites** concentrate in existing job centers.

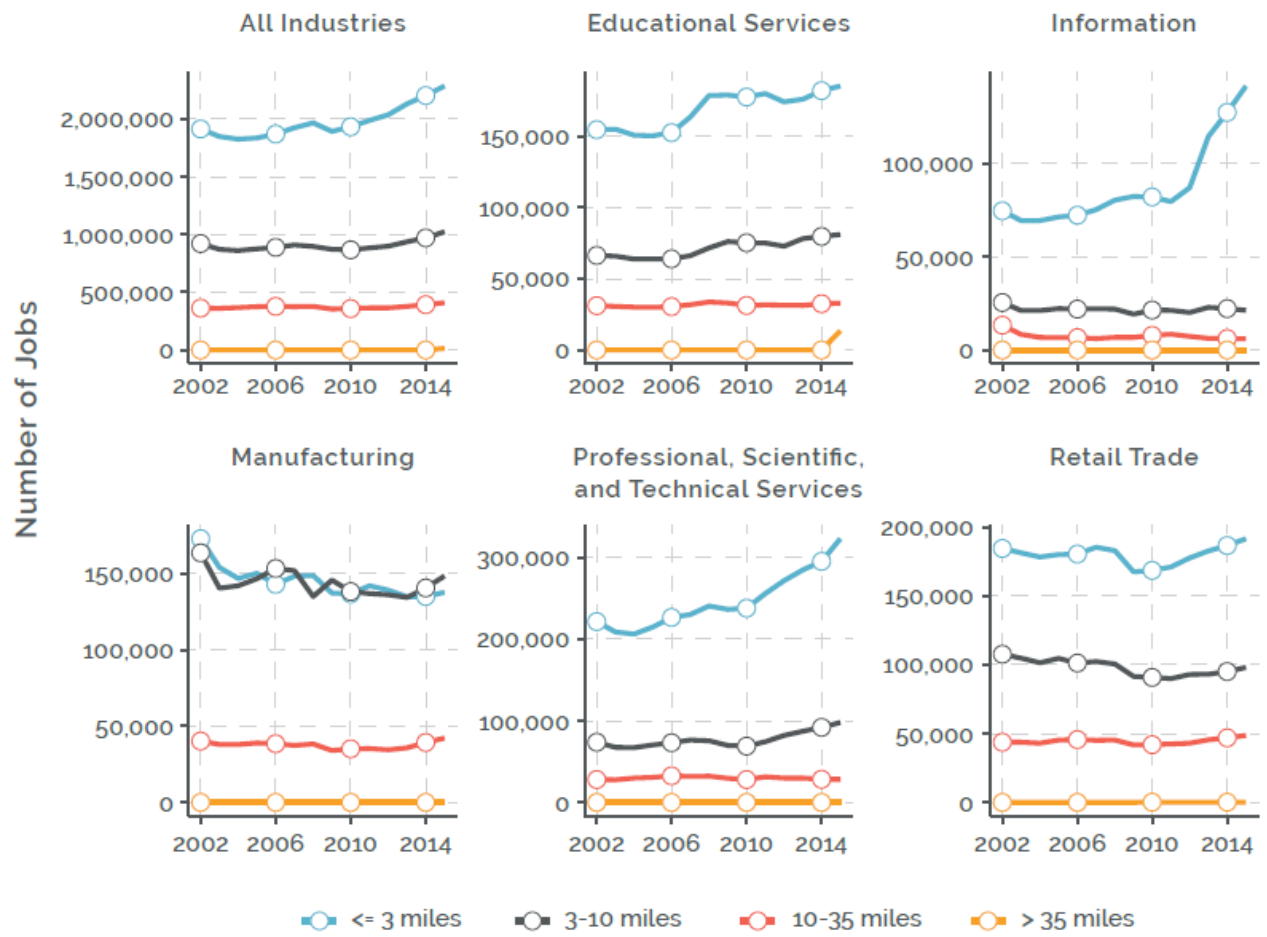


<https://www.dezeen.com/2018/01/04/big-google-caribbean-terraced-office-buildings-sunnyvale-california/>

Office in-fill, BIG's proposed Google offices in Sunnyvale

Changing Geographies of Work

- Different industries “prefer” different types of locations, amenities, workers
- New technologies could allow for greater decentralization via telecommuting - e.g., virtual reality. So far, information sector *most* prone to centralization.
- Retail has lost jobs in the middle band but gained in the core. Can it continue to be a career ladder in the periphery?



Source: Census 1982 of Retail; LEHD LODES





Priority strategies will be considered in the context of three “*what if...*” scenarios developed for use in Horizon.

Priority strategies are intended to be long-range planning concepts to move the Bay Area in a more sustainable direction.

Priority strategies are not intended to be specific short-term legislative proposals or calls-to-action.

Overview of Potential Priority Strategies

Technology



Priority Production Areas

State Training Fund for Displaced Workers

Organization



Lifelong Learning and Training Accounts

Portable Benefits

Compensation



Increased Childcare Support for Families

Wage Insurance

Universal Basic Income

Location



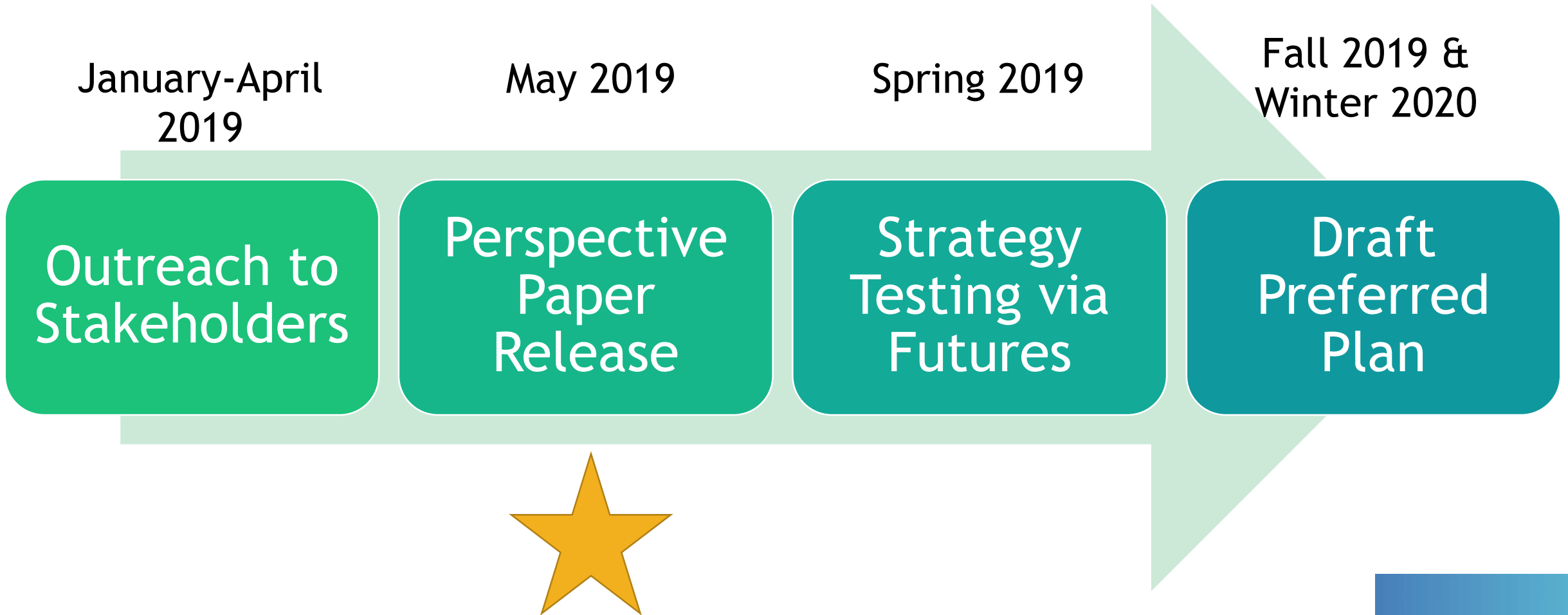
Incubator Programs in Distressed Areas

Means-Based Transit

Development Limits in Job-Rich Cities

Employment Incentives in Transit-Rich Areas

What's Next for The Future of Jobs Paper?



Panel Discussion

Moderator and Panelists:

- **Cynthia Kroll (Moderator)**: Chief Economist & Assist. Planning Director, MTC/ABAG
- **Stephen Baiter**, Executive Director, East Bay Economic Development Alliance
- **Laurel Arvanitidis**, Dir. of Business Development, City and County of San Francisco
- **Ofelia Bello**, Executive Director, Youth United for Community Action
- **Randy Howder**, Managing Director, Gensler San Francisco

Potential Priority Strategies



T1

Priority Production Areas (PPAs) to Protect Key Industrial Lands

Strategy

Identify critical areas to the regional industrial land base and establish a program to protect such areas, thus helping to stabilize land markets.

Examples

- San Francisco: PDR Zoning
- San Jose: Framework for Preservation of Employment Lands

Benefits

Supports local supply chains for regional economic clusters; supports local jobs and training.

Primary Guiding Principles



T2

State-Level Training Fund for Workers Displaced by Automation

Strategy

Establish a state-level fund for automation-induced displacement and distribute grants to regional programs working in partnership with county workforce development boards.

Examples

- Colorado: Skillful Worker Training
- Germany: Dual-System Work/School Apprenticeship Program

Benefits

Equips displaced workers with skills needed to quickly reenter the workforce.

Primary Guiding Principles



01

Lifelong Learning and Training Accounts (LLTAs)

Strategy

Establish LLTAs to address the decline of traditional single-employer jobs, resulting in a better trained workforce with greater flexibility to change careers.

Examples

- Aspen Institute: \$2,000 pretax with matching funds for training
- Singapore: \$500 training credit

Benefits

Confers rights to training to workers; useful for mid-career training.

Primary Guiding Principle



02

Portable Benefits

Strategy

Decouple benefits from employment and address the rise of part-time employment by advancing a portable benefits system and creating a safety net for workers in alternative arrangements.

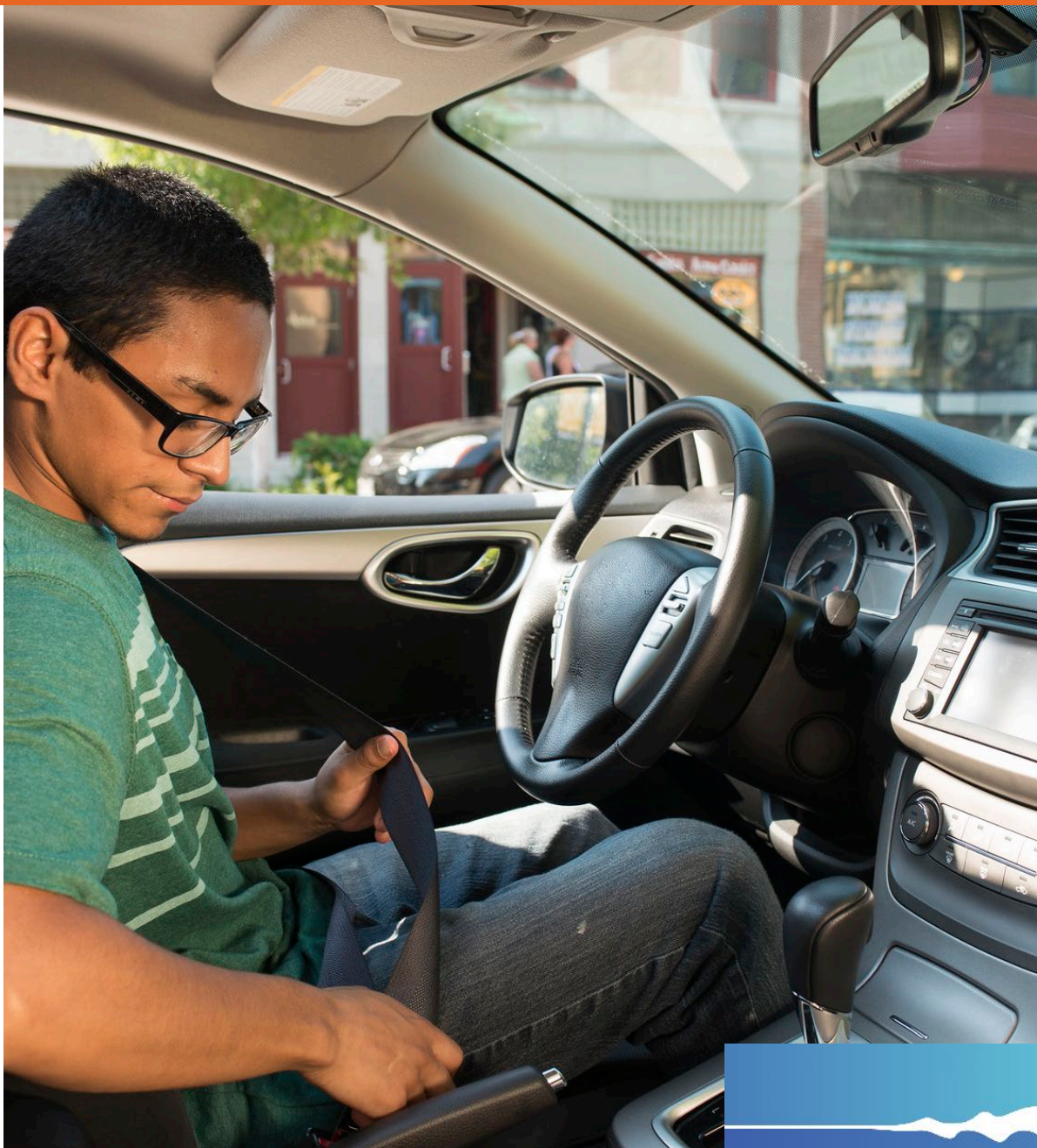
Examples

- Freelancers Union
- New York: Black Car Fund

Benefits

Ties employment benefits to the individual, instead of the employer.

Primary Guiding Principle



C1

Increased Child Care Support for Low-Income Families

Strategy

Provide low cost and accessible child care for low income communities to both remove barriers to working for women, while reducing driving to distant child care centers.

Examples

Child Care Center near Multimodal Tamien Station

Benefits

Increased access to well-placed child care boosts labor force participation and eases drop-off and pickup

Primary Guiding Principles



DIVERSE



VIBRANT



C2

Wage Insurance

Strategy

Consider developing a wage insurance program to reduce the wages lost experienced by most re-employed displaced workers, while encouraging continued participation in the workforce.

Examples

- United States: Alternative Trade Adjustment Assistance Program
- Canada: Earnings Supplement Project

Benefits

Ties earnings replacement to gains in experience; stabilizes households during transition.

Primary Guiding Principles



C3

Universal Basic Income

Strategy

Provide households with guaranteed, unconditional cash transfers, commonly referred to as a “universal basic income”, should jobs be disrupted at a scale well beyond individual control.

Examples

- Y-Combinator Research: UBI Pilot
- Stockton: UBI Pilot
- Finland: Universal Basic Income

Benefits

Breaks negative feedback loops associated with poverty; makes communities more resilient.

Primary Guiding Principles



L1

Incubator Programs in Economically-Distressed Communities

Strategy

Create incubator programs in economically distressed areas to create business and employment opportunities for low- and moderate-income individuals.

Examples

- San Francisco: La Cocina
- The Bronx: Business Bridge Incubator
- Philadelphia: iHub

Benefits

Encourages entrepreneurship beyond tech; spurs better business plans from participants.

Primary Guiding Principles



L2

Means-Based Transit Pricing

Strategy

Develop regional means-based pricing for public transit to help low-income workers overcome travel barriers to access economic opportunities in the region and provide for their families.

Examples

- Seattle: ORCA LIFT
- Portland: Metro Fare Discount

Benefits

Improves access to jobs for lower-income households.

Primary Guiding Principles



L3

Balancing the Jobs Side of the Jobs/Housing Imbalance

Strategy

Consider annual caps of commercial development or expansion of impact fees, thus internalizing costs to infrastructure and providing a funding stream for improvements.

Examples

- San Francisco: Proposition M (1986)
- San Francisco: Transportation Sustainability Fee (TSF)

Benefits

Disincentivizes excessive job concentrations; provides funding for needed mitigations.

Primary Guiding Principle



Image Credit: Shawn Clover, Flickr

L4

Incentivizing Jobs in Transit-Rich Areas

Strategy

Prioritize employment densification in PDAs and TPAs, with an emphasis on locations close to transit that currently have very low employment densities.

Examples

- Contra Costa Centre TOD
- PSRC “Transit-Supportive Densities and Land Uses” promoting TOD jobs

Benefits

Increases transit ridership; potentially improves jobs-housing balance.

Primary Guiding Principles

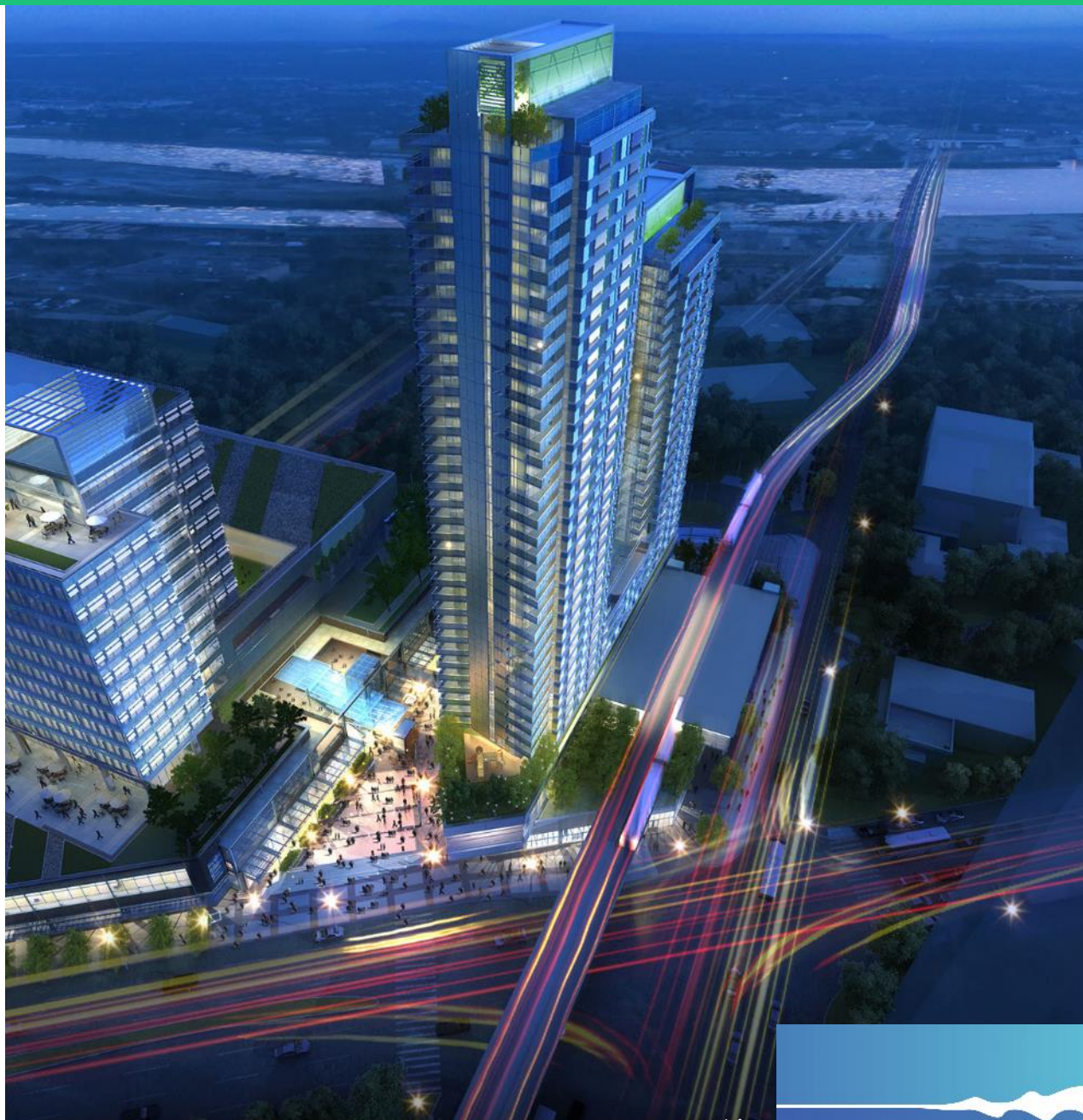


Image Credit: PCI Developments