Innovating Inequality?

How tech’s business models concentrate wealth while shortchanging workers
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Innovating Inequality?

How tech’s business models concentrate wealth while shortchanging workers

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KEY FINDINGS

20 years of data show that Silicon Valley’s business models exacerbate income inequality while enriching corporate shareholders, executives, and Wall Street:

• Over the past two decades, residents of Silicon Valley have increased their per capita economic output by 74% — yet for nearly nine out of ten jobs, employers are paying lower real wages now than in 1997.

• The share of middle- and high-wage jobs declined, while the proportion of workers in low-wage jobs increased by 9 percentage points.

• Much of this increased concentration of wealth can be traced to aspects of the business models adopted by the tech industry, which give outsized rewards to a few at the price of increasing financial insecurity for the vast majority of wage earners.
CONTENTS

Introduction .................................................................................................................. 5
American workers today are caught in a seeming contradiction.

Findings ......................................................................................................................... 8
Despite strong growth, the tech economy has meant declining wages, increasing inequality, and a shift towards low-wage jobs.

Causes ............................................................................................................................ 12
The tech industry has created business models that concentrate wealth while shortchanging workers.

Recommendations ....................................................................................................... 16
Public policy and industry action — especially at the state and local level — can help tech growth create widespread prosperity.
INTRODUCTION

American workers today are caught in a seeming contradiction.

Despite years of record low unemployment, booming business growth, and stock market highs, wages have stagnated.\(^1\)

In economic terms, since the early 1970s productivity growth in the United States has become *decoupled* from wage growth, meaning that even when workers are able to produce more value per hour of labor, that increased production is no longer (in the aggregate) linked to increased pay.\(^2\) But why?

The reasons are complex and multi-faceted, ranging from the growing financialization of the U.S. economy to the decline of unionization as corporations have gained more power.

But one key element of change that we, in more than 20 years of studying and advocating for Silicon Valley’s communities, have experienced firsthand is the rise of information and communications technology — the high-tech sector — as a driving economic force.

Silicon Valley is at the heart of these global economic changes. As the home to successive rounds of cutting edge innovation in information technology industries, *Silicon Valley has not only led the information revolution, but has also experienced the economic changes associated with these technological developments earlier and more deeply than most regions of the country.*

The impacts of this shift towards a tech-driven economy are being shaped not just by the technology itself, but by the new business models and market structures that the tech industry has built.

For technology companies and the markets where they operate, information and knowledge are key sources of business competitiveness; the tech industry and policymakers have designed these new markets with rules and rewards that exacerbate inequality, volatility and insecurity.
The tech economy has meant declining wages, increasing inequality, and a shift towards low-wage jobs

In the last 20 years, the effects of these tech-driven business models in Silicon Valley have become glaringly evident. **Despite leading the nation in per capita economic growth, nearly 9 in 10 jobs in the Silicon Valley region pay lower wages today, adjusted for inflation, than they did 20 years ago.**

In fact, if labor’s share of GDP had been the same in 2016 as in 2001, the average Silicon Valley worker would have received an additional $8,480 in pay and benefits that year alone.

**Tech’s business models concentrate wealth while shortchanging workers**

So why is such strong economic growth failing to lift wages even in the heart of the innovation economy?

A new research report, led by Chris Benner at the UC Santa Cruz Everett Center in collaboration with Working Partnerships USA, analyzes the trends of the past twenty years and identifies several underlying causes:

- The business models and “new rules” developed by the tech industry **separate the production of value from the rewards** for value. One consequence is that workers whose labor produces economic growth and corporate profits do not receive fair financial gains from that growth.

- Instead, the **financial gains accrue to a select club of venture capitalists, financiers, and executives**, along with a small class of top-earning employees.

- The disconnect between production and rewards is exacerbated by the **winner-take-all, near-monopolistic nature of today’s leading tech sectors**, where a few firms dominate an entire market (think Google in search, Facebook in social media, or Amazon in online retail).

- This approach **fails to share the industry’s enormous profits with everyone else who contributes to its success** — including the vast majority of employees, subcontracted service workers, consumers who provide valuable personal data, and taxpayers who fund the research and development of core technologies.
Public policy and industry action can help tech growth create widespread prosperity

The persistence of these trends helps underscore that they have structural roots, meaning that the problems underlying current tech markets and business models are not self-correcting; they will not be solved by private markets alone.

Just as public sector investments and collaborative processes have been critical for the economic dynamism of the region, so too must public sector policies and collaborative processes be developed to solve the problems created by this economic system.

The consequences of not acting are clear — growing inequality and insecurity, along with a dangerous politics characterized by xenophobia, racism, and intolerance that has spread across our country. This economic system undermines our democracy and our ability to live full and healthy lives.

While these are daunting challenges, the seeds of solutions are already beginning to sprout in the form of community- and worker-led policy and organizing innovations.

At the conclusion of this brief and the accompanying report, we lay out a broad framework for actions at the local, regional and state level that we believe are achievable, could mobilize strong public support, and collectively could help move the needle to improve work, employment, and livelihoods in our increasingly tech-driven economy.

SEEDS OF SOLUTIONS

The report identifies a set of concrete steps to begin rewriting the rules and rewards of Silicon Valley’s business models so that tech companies:

1. Respect workers’ voices and freedom to stand together.
3. Increase the share of tech revenue and profits contributed to the common good.
4. Partner with surrounding communities to address the impacts of tech’s growth.
FINDINGS

Despite strong growth, the tech economy has meant declining wages, increasing inequality, and a shift towards low-wage jobs.

Since 2001, Silicon Valley has led the nation in economic growth per person.

In the San Jose metropolitan area, real per capita economic output (GDP per person) increased by 74% over the past sixteen years — the highest growth per person of any region in the country.

Silicon Valley’s growth far outpaced the U.S. as a whole, with real national GDP per person growing only 14% since 2001.3

Source: Bureau of Economic Analysis, “Per capita real GDP by metropolitan area” for the United States (Metropolitan Portion) and San Jose-Sunnyvale-Santa Clara MSA.
Yet wages fell for all but the top 10% of earners.

An increase in per capita economic output means that workers are generating more value — and economic growth — per person. But the workers who are generating this value have not benefitted from it.

Over the past two decades, despite producing the strongest per capita economic growth in the nation, the median wage for workers in the Silicon Valley region declined by 14%. Wages declined for jobs at all levels except the very highest-paying: those at or above the 90th percentile.

WAGE SHIFT BY DECILE, 1997-2017:


Note: Wages are derived from 3-year combined datasets ending in the years indicated. The change for each decile represents the change in the cutoff wage for that decile over the 20-year period. Because the highest cutoff is the 90th percentile, wage increases for individuals earning above the 90th percentile are not represented in this chart.

Although the top 10% of households had higher income growth in Silicon Valley than in any other major metropolitan area in the country, the remaining 90% of Silicon Valley households did not see similar gains — even though they contributed to the Valley’s production and suffered its effects (soaring home prices, crushing traffic, and a growing displacement crisis). In fact, average income growth for the remaining 90% in Silicon Valley was lower than in 24 metros.4
For purpose of comparison, the bottom 90% of Silicon Valley households fared almost exactly the same as the bottom 90% of households in San Antonio or in Grand Rapids — even though per capita economic growth in Silicon Valley was 85% higher than in San Antonio and twice as high as in Grand Rapids.5

Despite Silicon Valley’s extraordinary growth, the vast majority of households here would have done just as well living in the much slower-growing San Antonio or Grand Rapids. So if we are looking to economic growth to lift all boats, this natural experiment demonstrates that it may not happen.

**Business owners are keeping more of the gains from growth, especially in high-tech industries.**

If workers are producing more value, but wages are not increasing, where is that added production going?

In part, it is being absorbed by owners, investors, and shareholders who demand ever-higher returns. Overall in the regional economy, workers’ share of total output fell from 63.8% in 2001 to 60.0% in 2016. For 2016 alone, this represents a shift of $9.6 billion away from employee pay and benefits, going instead to increase the rewards to investors.

**WORKERS’ SHARE OF RETURNS ON PRODUCTION:**

<table>
<thead>
<tr>
<th>Overall Silicon Valley Economy</th>
<th>Durable Goods Manufacturing (primarily computers &amp; semi-conductors)</th>
<th>Computer &amp; Electronic Product Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001: 64%</td>
<td>2001: 76%</td>
<td>2001: 77%</td>
</tr>
<tr>
<td>2016: 60%</td>
<td>2016: 58%</td>
<td>2015: 53%</td>
</tr>
</tbody>
</table>

*Source: Bureau of Economic Analysis, “Gross domestic product (GDP) by metropolitan area” and “Compensation of employees by NAICS industry.”*
Certain tech-linked sectors have seen a particularly striking decline. In durable goods manufacturing firms in the Valley, which is primarily in computer, semi-conductor, and related components, labor’s share of total output declined from 76% in 2001 to 58% in 2016, even as total output rose from $34.3 billion to $59.2 billion (in current dollars). In the computer and electronic product manufacturing sector, labor’s share declined from 77% in 2001 to 53% in 2015, the latest year of available data.

The share of workers in low wage jobs increased by nearly 10 percentage points, while the share in middle and high wage jobs declined.

Taking 1997 as a baseline, we examined the Silicon Valley region’s relative growth in low-wage, middle-wage, and high-wage jobs over twenty years. This analysis revealed that the employment mix in Silicon Valley has shifted substantially toward low-wage jobs.

From 1997 to 2017, the share of low wage jobs in the Silicon Valley economy increased by nearly 10 percentage points. The share of middle wage jobs declined. Notably, the share of higher-wage jobs also declined. Even though Silicon Valley has a high concentration of high-wage tech and finance jobs, the bulk of jobs added by employers have been low-wage.

**SHIFT TOWARDS LOW-WAGE JOBS:**

![Diagram showing the shift from high-wage to low-wage jobs from 1997 to 2017](image)

**Source:** Authors’ analysis of Center for Economic and Policy Research. 2017. CPS ORG Uniform Extracts, Version 2.3.

**Note:** Figures are 3-year data sets ending in the year indicated. To track wage shifts, the 1997 wage cutoffs for each bucket were inflation adjusted to 2017 dollars, and then the share of jobs below each cutoff were calculated.
CAUSES

The tech industry has created business models that concentrate wealth while shortchanging workers

These long-term trends of declining wages and increasing inequality indicate that the economic and human challenges of Silicon Valley are not merely temporary shortcomings. Rather, workers’ economic insecurity is rooted in the rules, incentives and relationships that have been created over time to form the business models underlying the information economy.

In contrast to industries where workers’ pay is linked to production, tech has adopted business models that let venture capitalists and top executives capture an outsized share of wealth.

The current models for start-ups, investment, and R&D funding enable a handful of investors and CEOs to capture enormous windfall profits from new technologies.

High ‘sunk costs’ of start-up, R&D, and product development are often justified by pushing down the marginal costs of production. Investors, lenders, or shareholders who provide the initial capital to develop a new tech product typically do so based on expectations of high rates of returns once the product goes to market. To maintain the promised profit margin, the per-unit costs of production — including labor costs for production, distribution, maintenance of buildings and physical plants, and other functions not regarded as “creative” — are pushed as low as possible.

The result is that the firm’s revenues are disconnected from the ongoing costs of production once the initial investment is repaid. Investors, top executives, and shareholders can reap enormous profits without necessarily sharing that with the majority of direct employees, much less sub-contracted workers.
Monopolistic and winner-take-all markets reward a few winners while excluding everyone else.

Many tech companies, such as social media platforms or search engines, derive much of their value from network effects. In these markets, a large portion of profits comes not from the activities of the company itself, but rather from the size of the network and the contributions of people using the network.

This leads to ‘winner-take-all’ markets in which an initial slight advantage or market lead results in one or at most a few firms dominating an entire market.

These companies then have an outsized ability to shape the market, which can include bending the rewards of production towards investors and CEOs while squeezing employees and exerting control over the ecosystem of smaller businesses.

MARKET SHARE HELD BY GOOGLE & AMAZON:

Source: Business Insider, Google’s share of all internet searches. TechCrunch, Amazon’s share of US e-commerce market.

Note: Google’s market share includes YouTube, Google Image Search, and Google Maps.
Tech firms capture the value created by public investments and users’ data.

Silicon Valley business depends on the collective inheritance of science and technological progress, supported by decades of public sector investment in research and development. From GPS to the internet itself, many of the fundamental developments underpinning tech’s success were created by public investment.

Tech companies — particularly social media platforms, ‘big data’ applications, and the large and increasing number of businesses using machine learning algorithms — also reap economic value from user-generated content, consumers’ personal data, and social networks.

In these network-based, winner-take-all markets, firms benefit from these socially produced sources of economic value in ways that are disconnected from returns to labor.
While big tech firms have huge profit margins, supporting industries have low margins and thus low wages for their workers — compounded when high tech salaries drive up the cost of living.

The rules of today’s tech economy, and the interplay of the rules between Wall Street and the industry, have enabled global high-tech industries to generate enormous profits. But local-serving service industries must play by a different set of rules.

Most service industries face highly competitive markets and relatively low profit margins, particularly if they are business-serving firms that are part of the value chain for technology firms or other multinationals, or if they are consumer-serving firms whose core market are working families who themselves are suffering from stagnant wages and financial insecurity.

This inequality between industries contributes to wage inequality for workers. Over twenty years (1997-2017), pay for jobs in Silicon Valley’s high-tech industries increased across the board; real high-tech wages rose 32% for the median earners, and 35% for those at the highest earnings levels (90th percentile). In the remainder of Silicon Valley’s job market, real wages declined; the median wage for all non-tech industries fell by 12%.
RECOMMENDATIONS

Public policy and industry action — especially at the state and local level — can help tech growth create widespread prosperity

Today there is a growing debate about automation, artificial intelligence, and the effects of these emerging technologies on workers. Understanding these new trends is profoundly important.

Yet what we can learn from the impacts of the current wave of information technology and its result in Silicon Valley is that it is not the technology itself that is likely to have the greatest impact on the workplace, economic insecurity, or income inequality. Rather, the impact will depend on how we as a society structure the incentives and frameworks that shape who benefits from technological advances. Will these market rules further tilt the balance of power towards wealthy investors? Or will we instead choose models where workers and communities have the power to ensure that gains from technology are broadly shared among everyone who helped make those gains possible?

If we design the legal and economic framework surrounding new technologies so that workers and communities can negotiate a fair return on their contributions, the next wave of innovation has the potential to bring enormous advances not just in technology, but also in the lives of working families.

While we won’t solve the entire problem of economic inequality and insecurity at the local level, we can make substantial progress. Following are four concrete actions that could help move Silicon Valley towards a trajectory where innovation and tech growth benefits us all.

Community, policy makers, and tech industry leaders should work to rewrite the rules so that Silicon Valley’s leading tech companies will:

1. **Respect workers’ voices and freedom to stand together.**

Underlying all the various mechanisms that contribute to insecurity and low wages is a fundamental imbalance of power. When it comes to major corporate or public policy decisions that shape business models, incentives for innovation, employment arrangements, or how the value of production is
distributed, individual workers have essentially no bargaining power — they’re not even at the table. Only by organizing together do workers gain the power in numbers to move their companies and industries towards more inclusive models of growth and innovation. Policymakers and tech industry leaders must respect workers’ freedom to join together in unions, negotiate a fair return on their work, and exercise their voice in the workplace.

Support workers’ right to organize and negotiate a fair return on their work

Tech leaders must not interfere with workers — especially subcontracted and supply chain workers — who choose to organize in unions for improved conditions and a fairer return on their work. Additionally, initiatives and statements intended to improve conditions should be made with the full participation of workers.

Engage with workers when they seek a collective voice

For example, after employees resigned in protest of Google’s Project Maven contract with the Pentagon, and 4,000 more voiced their opposition in a petition, Google cancelled the contract and created a set of internal AI ethics guidelines. Yet the new rules did not include any voice for Google workers, and so protests have continued to emerge against projects such as Dragonfly, a censorship-enabled search engine designed for China, with employees circulating a letter criticizing Dragonfly and calling for “an ethics review structure that includes rank and file employee representatives.”

Speak out against efforts that undermine workers’ rights

From forced arbitration contracts that silence employees’ voices, to employee misclassification schemes that strip workers of basic minimum wage, health and safety protections, and make it illegal for workers to organize, corporate lobbyists have developed a toolbox of tactics to undermine worker power. Tech companies should take a stand against forced arbitration, misclassification, and other tactics that strip workers’ freedoms from them, including the Uber-led attack on the California Supreme Court’s Dynamex decision which aims to reverse the ruling and roll back more than a century of advances in workers’ rights under the guise of “innovation.”

Silicon Valley’s increasing inequality has led to a decline in middle-wage, family-supporting jobs.

One of the drivers behind this “middle-class squeeze” is domestic outsourcing — when a firm contracts out part of its workforce in order to lower labor costs. In Santa Clara, San Mateo and San Francisco alone, there are an estimated 78,000 potential contract workers in the tech sector. This divide often falls along racial lines, with blue-collar subcontracted service workers being nearly six times more likely to be black or Latino than their directly employed tech colleagues.

Negative effects of domestic outsourcing can be reduced by encouraging or requiring major firms to take responsibility for all workers that produce goods or perform services at their behest, regardless of their employment structure.

PROMISING MODEL: Silicon Valley Rising

Silicon Valley Rising, a campaign to address inequality in the tech sector, was formed by local community and labor in 2015. Under the Silicon Valley Rising banner, over 5,000 subcontracted service workers across Silicon Valley’s biggest tech companies like Facebook, Apple and Twitter have joined together in unions, winning better wages, improved working conditions, and a voice on the job.

NEXT STEPS: Responsible contracting standard

Tech companies can engage with key stakeholders (including organized service workers, directly employed tech workers, and labor and community advocates) to develop and adopt a worker-driven responsible contracting standard.

Such a standard could address issues including livable wages, affordable healthcare, paid leave, labor peace, professional development, and ensuring workers retain their jobs when tech companies change vendors, combined with independent, third party monitoring giving workers a voice in enforcing standards.
3. Increase the share of tech firm revenue and profits contributed to the common good.

A strong local tax base is necessary to support education, housing affordability, transportation, health care, and other fundamentals that enable working families to access opportunity. If tech companies extract wealth from our communities but don’t pay taxes in proportions sufficient to support the physical, economic, and social infrastructure that make that growth possible, then all of the rest of us have to pay more to make up for them.

PROMISING MODELS:
Commercial Linkage Fees, Gross Receipts Taxes, and Head Taxes

A multi-faceted, multi-level approach is needed to solve tech-centered communities’ challenges of inadequate and unpredictable funding for basic public services. But cities are creating some promising tools that can, in a small way, help support community needs. Many Silicon Valley cities have adopted a tool called a commercial linkage fee to help ensure that new tech campuses and other major commercial developments contribute to affordable housing goals, offsetting the impacts of commercial land purchases and development that increase housing demand and drive up real estate prices. The cities of Santa Clara, Cupertino, Sunnyvale, Mountain View, Fremont, and Palo Alto have all adopted commercial linkage fees; San Jose, Milpitas, and Los Altos are considering doing the same.

Another, complementary tool that can help address the impacts of existing campus and other business operations is a gross receipts tax, which San Francisco adopted in 2012 and has been steadily phasing in over the past five years.

Along similar lines, a head tax can be used to offset the impacts of job growth by contributing money towards the public goods that those workers use, like housing, schools, or transportation infrastructure. This model was proposed, then pulled back in Seattle, and more recently has been proposed in several Silicon Valley cities. A regional version might be a promising approach to help fund critical infrastructure, especially housing, equitably and at scale.
4. Partner with surrounding communities to address the impacts of tech’s growth.

While the world interfaces with tech companies through their online presence, communities such as Silicon Valley that host tech’s physical operations have a different experience. An integral part of the growth model for major tech firms is development of campuses, R&D facilities, data centers, manufacturing facilities, and logistics and distribution networks — all of which rely on communities with robust, well-funded public infrastructure, strong educational systems, and housing and amenities that enable them to attract and retain the necessary workforce.

Development of tech campuses, offices, production and distribution centers brings many benefits to communities. But the “extractive” model of development — where tech developments take more value out of the community than they return — can have profound negative impacts, including overstressed transportation networks, overcrowded and underfunded schools, soaring housing costs, gentrification, and
displacement of families and small businesses. These negative impacts typically exacerbate existing economic, racial and gender inequalities.

By consciously and fully addressing their own impacts on the communities where they locate, and planning collaboratively with those local communities, tech companies and residents together can shape that development so that it leads to inclusive growth.

PROMISING MODELS: Facebook and Google Community Benefits Agreements

Following negotiations with the community over its planned new campus in Menlo Park, in 2016 Facebook signed a compact with Envision Transform Build (ETB), a coalition of community organizations, to launch a partnership between Facebook, the community, and the cities of Menlo Park and East Palo Alto. While there is still more to be done to fully meet community needs, this compact is a landmark agreement that includes significant commitments to affordable housing and anti-displacement measures, as well as commitments to support local hiring and job training.

In another approach, in 2017 Google agreed to support community efforts to add housing development to plans for the North Bayshore area of Mountain View (home to Google’s largest Bay Area campus), resulting in a North Bayshore plan to add 9,850 homes, including nearly 2,000 affordable homes.

8, 9
In June 2017, Google announced plans to build a major new campus in downtown San Jose. This project could bring as many as 20,000 Google employees to the city, plus an estimated 8,000 subcontracted service workers, making this the largest tech campus in Silicon Valley. A broad community coalition, spearheaded by Silicon Valley Rising, is calling on Google to negotiate a Community Benefits Agreement that addresses the serious impacts of its mega-campus.

Beyond individual campuses, we need regional approaches to address the impact of the tech industry’s growth on housing demand, housing costs and displacement throughout the Bay Area. The scale of the Bay Area housing crisis demands comprehensive, coordinated solutions; to meet current needs for affordable housing would require an estimated $10 billion per year for the next 20 years.

Tech companies must step up alongside policymakers and communities to play leadership roles in public policy advocacy, including supporting regional versions of tools like the fees and taxes discussed above that would help tech pay its fair share to address the housing demand generated by tech’s job growth.

Equally importantly, tech leaders should support regional efforts to protect tenants, preserve existing affordable housing, and prevent displacement, especially in the communities where tech companies are expanding their operations.

NEXT STEPS: Build a model for Community Benefits Policies at the project level, and support a robust housing strategy at the regional level
Endnotes


3 Bureau of Economic Analysis, “Real GDP by metropolitan area (millions of chained 2009 dollars)” Interactive Table. https://www.bea.gov/iTable/index_regional.cfm


5 Bureau of Economic Analysis, “Per capita real GDP by metropolitan area (millions of chained 2009 dollars)” Interactive Table. https://apps.bea.gov/itable/iTable.cfm?ReqID=70&step=1


10 http://www.santacruzsentinel.com/article/NE/20180710/NEWS/180719968


14 http://www.santacruzsentinel.com/article/NE/20180710/NEWS/180719968


Working Partnerships USA is a community organization that drives the movement for a just economy by bringing together public policy innovation and the power of grassroots organizing. We build the capacity of workers, low-income neighborhoods and communities of color to lead and govern. Based in Silicon Valley, we tackle the root causes of inequality and poverty by leading collaborative campaigns for good jobs, healthy communities, equitable and sustainable growth and a democracy that works for all.

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