

Employment & Sustainability:

Report of the Cornell ILR School

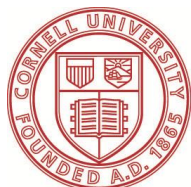
2013 Roundtable on Employment and Technology

The Challenge

The Great Recession has compounded the ongoing forces of technological change and globalization to drive an even more profound transformation in the relationships between Americans and work. Jobs are disappearing, skill sets are a moving target and the evolving concept of earning a sustainable living is becoming increasingly complex and, for many, increasingly remote.

The Cornell ILR School, a renowned leader in advancing the world of work, recognizes that today's and tomorrow's challenges demand a new paradigm, one that joins together the many highly educated – but also siloed – discussions about employers' use of new technologies and the impact on quality job creation.

On April 12, 2013, the ILR School convened 40 economists and engineers, academics and corporate executives, social scientists and philanthropists, policy makers and journalists and statisticians in a ground-breaking, cross-sector, invitation-only dialogue. It was a day full of agreement, fervently diverse opinions and insights – notably that most participants had never before discussed these issues with such a varied group of stakeholders, and that the country's best hope for reaping widespread gains from technological progress rests on continuing and expanding such discourse.



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Letter from the Dean

I am proud to welcome you to this critical dialogue about the impact of advancing technology on jobs in the United States.

We all talk about the latest BLS employment number and whether it finally shows that the U.S. economy is truly recovering from the Great Recession. But beyond the unemployment rate, there is a substantial, continuing decline in the central labor-force participation rate. Are these troubling indicators a sign of something even more profound – in fact, so profound that it's beyond the scope of earlier technological transformations?

On April 12, 2013, Cornell ILR convened experts from across sectors and disciplines to discuss this situation and, more importantly, what we can and must do to address it.

With a mission to advance the world of work, Cornell ILR is a natural leader of this groundbreaking conversation. We have the expertise in human resource management, labor economics and law, organizational behavior, conflict resolution, labor-management relations – all the facets of “work” that determine success for individuals, businesses and economies in today's global marketplace.

We also have a strong, institutional sense of responsibility and motivation. As one of Cornell University's four land-grant colleges, helping to find solutions to today's economic and social problems is part of our DNA.

Cornell ILR is unique in the depth and breadth of the teaching, programs, research and resources that we bring to bear on the world of work. Blending theory and practice with a social sciences and human perspective, ILR's impact reaches far beyond the campus.

We are grateful to the partners in this Roundtable – ILR's Institute for Compensation Studies and Labor Dynamics Institute, the EPRN Sustainable Entrepreneurship Network, The Conference Board and ILR alumnus Steven Berkenfeld '81. And we look forward to continuing this crucial conversation with you and many others.



Harry C. Katz, Ph.D.

Kenneth F. Kahn Dean and Jack Sheinkman Professor of Collective Bargaining
Cornell University ILR School

The Conversation

The narrative that follows summarizes the key observations and take-aways from the Cornell ILR School 2013 Roundtable on Employment and Technology, and frames its many questions for the crucial conversations that must follow. Accompanying the report and referenced throughout are related essays prepared in advance by Roundtable participants and others also deeply interested in this topic. The comments from individual participants are not attributed by name because the Roundtable was convened under the Chatham House Rule to allow for a free and frank dialogue.

The reality is this: The continuing sea-changes in technological advancement, particularly when combined with the forces of globalization, are significantly impacting U.S. jobs and raising the risk that more and more U.S. workers will be caught in a shrinking “middle,” as jobs migrate to higher-skill and lower-skill work.

The Great Recession has accelerated a fundamental transformation in the U.S. work landscape that’s been driven for some time by technology and globalization. Job creation and labor-force participation have been dropping for decades. Wages and worker protections are declining.

Even jobs thought recently to be evergreen are disappearing. And wages are spread farther apart than ever before, a situation that seems attributable to a change in social norms as well as to technology-driven productivity.

“More wealth has been created worldwide in the past decade than ever before in history, more millionaires and billionaires. But at the same time, median income is lower. Fewer people are working. ... Technology is not the problem. It’s creating an enormous amount of wealth. The problem is in the way we’re not using it effectively to have widespread prosperity. The pie gets bigger when you have increased productivity. [But] a very, very small group of people by and large [has] benefited, and that has add-on negative effects for the whole economy.”

But the march of technology is moving so quickly that to focus on why this situation exists, and on how much of the cause is structural versus cyclical, risks distracting us all from the urgent need to address what we must do about it.

To read more: “Why Workers Are Losing the War Against Machines?” Erik Brynjolfsson and Andrew McAfee, *The Atlantic*, 10/26/11, www.theatlantic.com/business/archive/2011/10/why-workers-are-losing-the-war-against-machines/247278

Certain skill groups have always fared better than others in times of economic transformation. But today, despite U.S. gains in technology and (especially higher) education, the trend in the numbers of long-term unemployed and displaced workers remain troublesome. The necessary retooling of U.S. workers, particularly for now-critical cognitive skills, isn't happening fast enough. U.S. layoffs are increasingly becoming permanent job loss, with much more severe and long-lasting consequences. China is attracting companies with ever better adaptive capabilities. And China's ascension, along with India and the former Soviet Union, in the global economic game has effectively doubled the accessible labor supply.

“[In] the argument that has traditionally been made, technology drives growth and knowledge-type jobs, so we’ll retool people so that they can assume these knowledge jobs. Well, that hasn’t happened. And some of the jobs that people always said aren’t going away—construction jobs, healthcare jobs—well, we’re building a bridge [in some other] country and importing it.”

There has been some growth among low-skilled service jobs such as janitors and food-service and hair-care workers, who have also seen a moderate hike in real wages. Interestingly, this isn't because technology is making these workers more efficient but in good part because, in this case, technology means some consumers have more money available to spend on these services.

But the larger picture is very bleak for workers with at best a high school diploma, who used to be well paid in manufacturing jobs that today are gone for good, with automation eliminating the need for unskilled labor.

“In certain states, 40%-plus of a high school generation never graduate. What are we going to do with people that never have a high school diploma? [Meanwhile in the big aerospace companies], 50% of their engineers will retire within the next 10 years, so they have a vacuum at the top, of getting highly skilled labor. They don’t need the unskilled labor.”

To read more: “Will a Robot Take Your Job?” Gary Marcus in *The New Yorker*, 12/29/12, www.newyorker.com/online/blogs/newsdesk/2012/12/will-robots-take-over-our-economy.html

The Innovation Edge

As globalization and technology make it more efficient for companies to engage fewer workers, and more of them in countries such as India and China, the combination of these forces is also changing the innovation advantage held by the United States.

“Manufacturing jobs are about 15% of all jobs now. Some 70% of all corporate R&D is in manufacturing plants, so if you lose manufacturing, you also run the big risk that you’re going to lose innovation.”

Technology’s impact on the U.S. workplace, in terms of the number of jobs and how work gets done, is inextricably linked to the forces of globalization. Revenues from outside the United States contribute significantly to profits earned by U.S. companies. Emerging markets’ expanding participation in the global economy has dramatically increased the globally accessible supply of labor.

In economic theory, holding all else constant, increasing the labor supply will lower the “price” of labor, i.e., what people earn. But all else is not constant – technology is also rapidly changing. The dynamic advancements of productivity-enhancing technology will almost certainly raise the incomes of those owning the capital and can raise the earnings of those workers who are made more productive by it.

History suggests that innovation follows manufacturing, but with manufacturing moving offshore, how quickly is innovation following? How can the United States accelerate the pace of innovation at home to create new products and new jobs? And what skills will be needed in this globalized economy to support such innovation?

The conundrum for U.S. employment is that, simultaneously, the interactive effect between globalization and technology increases the efficiency of engaging workers in even slightly lower-cost countries to perform work, regardless of where the final products or services are needed.

“In ‘lean manufacturing,’ the whole goal was actually not to use innovation or technology. It was to do the same job with less people, and not spend money on capital. And we did that why? Because it was better to save 30% of the jobs than lose 100% of them to China.”

To read more: “Jobs, Productivity and the Great Decoupling,” Erik Brynjolfsson and Andrew McAfee, *The New York Times*, 12/11/12, www.nytimes.com/2012/12/12/opinion/global/jobs-productivity-and-the-great-decoupling.html?_r=0, and “Why Productivity Growth Is Good For a Healthier Labor Market,” Bart van Ark and Gad Levanon, essay prepared for the Cornell ILR School 2013 Employment and Technology Roundtable

Marketability of those Caught in the Middle

With many of yesterday's middle-wage U.S. jobs transformed or eliminated by technological advances, what is asked of a middle-wage earner today is dramatically different from what was asked even five or 10 years ago. Yesterday's "machinist" is today's "technician." Is it also tomorrow's "robot?" The exploding need for training and retraining is not being addressed in a sufficiently creative or collaborative manner. U.S. institutions and U.S. education are not keeping pace with the rate of technological change. And companies often find that investing in retraining their workers doesn't pay off in their own balance sheets.

What's more, while we know where the work is not and where it is unlikely to rematerialize, we know much less about how to identify and/or create sectors in which workforce skills and advancing technology might combine to add the most jobs.

"The mantra of engineering has always been to try to automate stuff. That's what we still train our students to do. But maybe we should redirect our efforts. If you can phrase what the problem is that we need to solve, rather than only trying to understand if it exists or not, then we can start thinking about how to solve it, using the same engineering tools. ... Wages and work are good goals, but they were driven by needs that may not exist in the future."

There are varied initiatives like the federal Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grants, which can help colleges offering two-year degree programs identify job growth areas and design courses and curriculum around that knowledge. But a whole new collaborative mindset is needed – especially including the engineering profession – to look creatively and proactively at how technology can enhance society instead of just replace labor, at how it might drive new product innovation and enhance human skills.

"As you develop new technologies, don't focus simply on automating existing processes and taking the labor out of them. Think of new processes where technology and people are complements instead of substitutes. If we focus on the complementarities, then I think we can have growth and jobs at the same time. ... Can we crowd source this, through entrepreneurship, to identify different kinds of industries, jobs, work structures that combine technology and the skills of the workforce in some innovative way that no one has thought of before?"

To read more: "A Roadmap for U.S. Robotics – From Internet to Robotics," 2013 Edition, Henrik I. Christensen, <http://robotics-vo.us/sites/default/files/2013%20Robotics%20Roadmap-rs.pdf>

While only a Luddite might propose slowing down the pace of scientific progress, history shows that major technological revolutions always create big winners and big losers, an important lesson especially as scientists get even closer to developing machines that can accomplish creative tasks as well as automation. The more disruptive the technological progress, the greater the pain of the displaced and the higher the probability of negative social consequences. Cooperative efforts can steer progress toward a wider good.

Can't Manage What Isn't Measured

In the midst of all this change, we are trying to project and plan for the future using metrics created for an earlier age. Today, more and more Americans earn their living via multiple “jobs,” particularly as innovations like web applications can be produced from home (or anywhere) and initiatives like the Freelancers Union remove the traditional benefits barrier from non-salaried employment.

But collection of U.S. economic data for the purposes of measuring work and the labor market is not keeping pace with the rapidly changing world of work. Measuring work and productivity needs to be more about “tasks completed” and less about counting the number of W-2 employees in traditional workplaces. Employment statistics that report net gains and losses fail to capture job-market churn. The pace at which businesses adopt technology to make process improvements that require fewer workers seems to be faster than that of technology-spurred innovation that creates new products and services and hopefully new jobs. And comparatively little information is captured that shows which kinds of jobs are churning or lost altogether due to technological change.

“We keep talking about robots replacing manufacturing jobs. What’s revolutionary is that recently we’ve been automating service jobs, everything from retail clerks to warehouse employees. This is where the bulk of the jobs have been vanishing, and it’s really new, and it’s happening really fast.”

More and/or better synthesized data are needed to measure technology's impact on the many kinds of work that increasingly make up U.S. employment, covering part-time and freelance workers as well as salaried workers; analyses by profession, job category and occupation, and the specifics of job loss and job creation attributable to automation, enhanced productivity and outsourcing.

To read more: “Robots and Looms: If today’s robots are just the automated looms of the 21st century...,” George R. Boyer, essay prepared for Cornell ILR School 2013 Employment and Technology Roundtable

New metrics are needed to better measure innovation and productivity in our increasingly complex economy, and to assess the benefits to U.S. society of advances in technology and today's greater variety of products and services. It's easy to count the number of people who work at companies like Google and Facebook. But how do we measure the value added by such businesses via, for example, the multitudes of non-staff application developers and their respective support and sales functions?

“Where are the nodes of the economy where there are hundreds or thousands of productive freelancers? Government would make better policy decisions if it knew those things, and businesses who had access to that information could put it productively to use. Academia should think about whether or not freelancers are happy. The typical view is freelancers are exiles from the corporate world in this kind of 1099 dingy diaspora. But the truth is that there are freelancers out there who are doing it because that’s what they want to do. Or even if they got forced into it, they’re finding out that that’s how they’d rather work. Or maybe they’ve got two different loves that they’ve put together a living for. Find those people and talk to them and figure out what lessons we can draw.”

We also need to know more about what is happening to individual workers as well as groups — who is leaving the workforce, where they are going and what is or isn't helping them to make a living there. We need to understand which training/retraining programs work best, which ones don't, and how we can free up the resources from the latter to support the former. There is evidence that participation in some training programs can raise individual earnings by as much as 50 percent. At the same time, there's an insufficient understanding of how low-wage workers navigate through workforce development opportunities, and there are serious questions about the value of many of the credentials offered.

“We have to get more creative about retraining and repurposing workers. When we lay off 200,000 postal workers, they may not become app developers – but they could be UPS or Federal Express employees.”

We should look beyond longstanding sources like the U.S. Bureau of Labor Statistics for minable data about things like hours worked and occupations which might be found, for example, among ADP's corporate payroll data or government surveys or even IRS forms. Indeed, research currently underway is examining how Twitter feeds may help to measure unemployment.

To read more: “Technology and the Labor Market: What We Know and How We Can Know More,” John M. Abowd, Michael R. Strain, and Lars Vilhuber, essay prepared for Cornell ILR School 2013 Employment and Technology Roundtable

“[My] biggest success in hiring students is if I can match their talent and their passion to what I need to get done. Because if the passion is there, the talent is there, then the learning and the skills, all that follows. But there isn’t a lot of information about what people are actually good at. ... There is a lot of potential to create more predictive models that go beyond ideologies, so that we can make decisions that are on the basis of data rather than philosophy.”

Whose Problem is This, Anyway?

It’s easy to assign blame for the current situation. To educators for not imparting the skills to make a contemporary living. To scientists for continuing to create labor-saving technologies that add to quality of life for many but put many others out of work. To businesses for focusing their people-asset management on the “capital” over the “human.” To policy-makers for enacting measures that become hiring disincentives.

The social and political elements of this situation are as crucial as the economic and technical ones. The roles and responsibilities for addressing it are widespread across all sectors and groups, and extend to individual workers themselves. As more and more adults have, and will have, multiple “jobs,” they need better information about where the job market is going so that they can adapt and make the best choices to increase their own chances of earning a sustainable and rewarding living.

“We need a tax system that offers possibilities for people along their lives and that actually introduces incentives for people to take risks and to move across occupations, across industries, for people to set up their own businesses. The tax system can address a lot of these issues of inequality [and] mobility that we’ve been talking about.”

The Corporate Role

The roles and responsibilities of employers in particular are complex, dynamic and often contentious. Changes in U.S. corporate culture and social norms have increasingly distanced top business leaders from their employees’ living standards, which depend greatly on how much the company pays them. Today, “productivity layoffs” to reap efficiency cost-cutting savings are considered almost a routine and necessary business process, even when a company’s profitability is strong. The sense of commitment between workers and companies is declining.

To read more: “Layoffs and Outcomes for CEOs and Firms,” Kevin F. Hallock, essay prepared for Cornell ILR School 2013 Employment and Technology

“Companies are laying off thousands of workers at the same time that they’re announcing major stock buybacks – when they have record levels of cash, record levels of profitability – which is different than in other recessions, when companies had the stress and competitive challenges and needed to rebalance the workforce. Now, they can just do more with less. ... The recession changed the norms. It gave these companies air cover to rationalize their workforce based on the productivity gains from technology. Now it’s become like an annual event.”

Corporations have obligations to their shareholders to leverage technology to operate efficiently and cost-effectively in a global economy. Companies today face institutionalized disincentives to hiring full-time workers, and the U.S. social compact tying healthcare to employment unfairly burdens employers as well as employees (who can lose their benefits after losing a job or when changing employers).

“We ought to look at the increased variation across corporations in their HR strategy, and it’s across the world. Why is the variety appearing? I think some is because there’s a weakening of the labor movement and government regulation. But I also think technology is playing a role. The variety’s potentially a source of optimism, because it says we’re not necessarily condemned to one best way, by technology or anything else. There are multiple ways to maximize profit. Technology affords us various choices, choices at the company level. Individuals are important, but companies matter a lot, and they really do have choice...How technology shapes that choice, I don’t think we in the HR side understand very well. Technology and HR people could work together better to try and understand a bit more how these choices are evolving.”

There are some model employment practices that are bright spots - cooperative training by industry cluster, work-sharing arrangements in 24 states that can be an alternative to layoffs, and lessons to be learned from small- and medium-sized enterprises with more flexibility to adopt practices adaptable to new circumstances.

To read more: “A Primer on Private Equity at Work: Management, Employment, and Sustainability,” Eileen Appelbaum and Rosemary Batt, CEPR Working Paper 12-2, www.cepr.net/index.php/publications/reports/primer-on-private-equity

UPS, where today's upper-level managers rise up through the ranks of the "men in brown," is one example of a company with sustainable jobs and career ladders. Lincoln Electric is another example of socially responsible success in the technology age.

Maybe it's time to formally expand the current conceptualization of corporate social responsibility (CSR) to "ESR," encompassing the social responsibilities of employers (and of engineers) to address sustainable employment. Moving jobs onto the corporate citizenship radar screen alongside philanthropic, environmental and corporate governance priorities recognizes companies' accountability for the consequences of their human capital decisions from a sustainability, as well as an asset management, perspective. Perhaps U.S. business should proactively establish and adhere to best practices regarding the societal effects of companies' employment practices.

"[A company may] say that people are their most important resource, but that's window dressing. Government can nudge, but I think the onus is on corporate leadership to take a bold step and kind of step away from the pack. Ultimately, somebody's got to step up in the corporate leadership world and be the Henry Ford."

To read more: "Jobs...a Pillar of Corporate Social Responsibility? Perhaps It Should Be," Jeff Hoffman, essay prepared for Cornell ILR School 2013 Employment and Technology Roundtable

Tragedy of the Commons?

“It’s not in the interests of any individual firm in the United States to try to solve the jobs problem. They’re pressured to make short-term profits. They’re global corporations. They have shareholders and options to invest around the world. But it is in business’ collective interest to address these issues because we need purchasing power, and even the multinationals still get 60% of their revenue from U.S. sources. We’ve got to figure out a way to deal with this tragedy of the commons problem, and the only way is by getting people to work and institutions and organizations to work together. Over the last 30 years with the decline of the labor movement, you’ve seen a lot of institutions go downhill. We don’t see the kind of dialog, the enforcement of our social norms and social policies that discipline corporations. We need to invent the new institutions that will cut across and aggregate these interests and help us to address these challenges. We’ve got to get the education community working with business and employers, working with labor and civil society. I’m not a believer that technology is going to naturally eliminate jobs and cut income. But if we don’t do anything about it, if just left, as we have, to individual market forces and to individual corporate actions and to individual technology innovations, then that’s probably where we are headed. It’s up to us to change that trajectory.”

To read more: “Root Causes for America’s Jobs Crisis and Strategies for Addressing It,” Thomas A. Kochan, essay prepared for Cornell ILR School 2013 Employment and Technology Roundtable and summarized from “The American Jobs Crisis and Implications for the Future of Employment Policy,” ILR Review, April 2013, www.ilr.cornell.edu/ilrreview/index.html

Moving Ahead

The Roundtable closed with widespread commitment among participants to drive a much broader and more vigorous national discussion about the short- and longer-term impacts of technological advances on the nature of work, on the elimination and creation of jobs, and on the ability of U.S. workers to earn a sustainable living. The day's key take-away: Cross-sector thinking and new partnerships are urgently needed to determine how the enormous gains and benefits from advances in technology can be shared to have the widest and most positive effects on the U.S. economy and on individual standards of living.

Through events like the 2013 Roundtable on Employment and Technology, the ILR School – in this case partnering with its [Institute for Compensation Studies](#) and [Labor Dynamics Institute](#), the [EPRN Sustainable Entrepreneurship Network](#) and [The Conference Board](#) – will continue to advance informed and open-minded, cross-sector conversation about the forces driving the high adoption rates of productivity-enhancing technologies throughout the U.S. economy, and the impacts on employment and the future of work.

See more at: <http://bit.ly/Ye2mbv> or
www.ilr.cornell.edu/ICS/InsightsAndConvenings/EmploymentSustainabilityInitiative/

Cornell ILR School

2013 Employment and Technology Roundtable

April 12, 2013 | New York, NY

Participants

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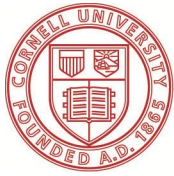
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Lars Vilhuber, Cornell University Labor Dynamics
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ILR School

Cornell ILR

The ILR School is advancing the world of work through teaching, research and outreach. ILR's mission is to prepare leaders, inform national and international employment and labor policy, and improve working lives. The school offers undergraduate and graduate education as well as career-long learning for professionals.

The ILR School was founded in 1945 as the New York State School of Industrial and Labor Relations. As the world of work evolves, the school's focus broadens to keep pace with that change. Today, the school is becoming better known simply as ILR.

See more at: www.ilr.cornell.edu

Roundtable Collaborating Partners

Institute for Compensation Studies (ICS)

An interdisciplinary center in the Cornell ILR School that researches, teaches, and communicates about monetary and non-monetary rewards from work, and how these rewards impact individuals, companies, industries, and economies around the world. ICS is dedicated to delivering innovative research, leading-edge insight, and practice-strengthening knowledge.

See more at: www.ilr.cornell.edu/ics

Labor Dynamics Institute (LDI)

A research center in the Cornell ILR School whose mission is to create and make accessible novel data on the dynamics of the labor markets. Working with research networks and statistical agencies, LDI develops appropriate statistics to inform policy makers, researchers, and all those seeking knowledge.

See more at: www.ilr.cornell.edu/ldi

Employment Policy Research Network (EPRN) Sustainable Entrepreneurship

A research collaborative that seeks to better understand and disseminate to policy makers, current business and organization leaders, and future entrepreneurs research-based information, analysis, and commentary on the critical job-creation and job-quality issues needed to increase the probability that entrepreneurial start-ups will survive, grow, prosper, and generate high-quality jobs.

See more at: www.employmentpolicy.org/topic/1027

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