THE ECONOMIC GRAPH

2017 End-of-Year AMERICAS Report
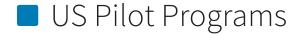
Linkedin™

Executive Summary

There are more than three billion people in the global workforce, and LinkedIn's vision is to create economic opportunity for each and every one of them. The development of the world's first Economic Graph is key to making that vision a reality. The Economic Graph is a digital representation of the global economy, and a source of information for individuals, governments and private sector organizations that make decisions about jobs, education and training.

Today the Economic Graph is comprised of over 530 million members on LinkedIn around the world, 18 million companies, 29,000 institutions of higher education, more than 11 million open jobs and 50,000 skills. The Economic Graph is our true north—something that all LinkedIn employees are building together. Within that broader effort, a small cross-functional team focused on public policy and research works on helping LinkedIn become a primary source of insights and ideas that guide leaders' decisions on workforce development across the globe. The team does this by bringing to life research and pilot projects that help leaders understand and address the future of the global workforce.

This document is a high-level overview of our team's recent work in North America. First, we examine each of the major pilots that our team has undertaken to better understand the workforce at the local level—from our work with educational institutions, local governments and workforce investment boards in Colorado and Arizona, to our pilot in Utah, which seeks to understand the extent to which unemployed individuals receiving benefits can be impacted by LinkedIn Job Seeker assistance. Second, we outline a few key partnerships with national and international organizations -- such as the World Economic Forum -- over the past year.

■ US Pilot Programs

LinkedIn Workforce Reports

In February 2017, we launched the LinkedIn Workforce Report, a monthly report on employment trends in the U.S. workforce. It's divided into two sections: a National section that provides insights into hiring, skills gaps, and migration trends across the country, and a City section that provides insights into localized employment trends in 20 of the largest U.S. metro areas: Atlanta, Austin, Boston, Chicago, Cleveland-Akron, Dallas-Ft. Worth, Denver, Detroit, Houston, Los Angeles, Miami-Ft. Lauderdale, Minneapolis-St. Paul, Nashville, New York City, Philadelphia, Phoenix, San Francisco Bay Area, Seattle, St. Louis, and Washington, D.C. The goal of the LinkedIn Workforce Report is to provide federal, state, and local policymakers, as well as job-seekers themselves, with real-time information to help understand and navigate the dynamics of the labor market. In November 2017, we expanded the LinkedIn Workforce Report internationally, to the United Kingdom. The U.K. report shares hiring and migration insights on a monthly basis.

Colorado and Arizona | Skillful Partnerships

Over the past few years, one of our main focuses has been on narrowing the middle skills gap in Colorado and Arizona through policy and product initiatives in partnership with the Markle Foundation's Skillful initiative.

Our pilot programs provide a unique combination of online tools with offline events and training. On the ground, we work closely with the governmental and community organizations that directly support middle-skilled workers.

When we surveyed recruiters and hiring managers in Colorado and Arizona, 44% said that it's hard to find people with the right technical skills. And when we surveyed workers, 54% of workers with a high school diploma and some or no college education said they didn't know what jobs were available or whether or not they needed additional training to acquire the skills required for those jobs.

So last year, the team launched Training Finder, a tool to help job-seekers in Colorado and Arizona who have a high school diploma and some or no college education find training to land middle-skill jobs in fields such as IT, advanced manufacturing, and healthcare.

LinkedIn is also serving as the apprenticeship marketplace for CareerWise Colorado, a new nonprofit that works with public high schools in the state to provide students with on-the-job training opportunities. We are hosting CareerWise apprenticeships as job postings on LinkedIn, creating a more transparent path for potential applicants. We hope to do the same for all apprenticeships throughout the state.

This spring, we partnered with Skillful to pilot a placement program designed to help students inform employers of their skills and credentials, and to enable employers to find qualified candidates. Our team helped 80 students from Colorado community colleges create LinkedIn profiles, which we then shared with employers to determine the role of LinkedIn in sending clearer signals about the capabilities of potential hires.

Skillful also supported our efforts to train and support career coaches embedded at Goodwill and other workforce centers across both Colorado and Phoenix. Through Skillful, we have learned that career coaches often feel unprepared to support job-seekers with skills and positions in the rapidly changing digital economy. In partnership with the LinkedIn for Good team, we worked to upgrade coaches' LinkedIn accounts and helped identify volunteers in tech and other middle-skill industries who could engage directly with job-seekers.

Arizona | LinkedIn Gigs Pilot

In 2016, we hosted events with gig workers from Lyft, Instacart, and DoorDash to learn about the value of gig work for low-skill workers and better understand how LinkedIn can support individuals in the gig economy. We learned that many workers found the gig economy to be a valuable and flexible source of income.

In order to make the gig economy accessible to more people, we built a Gig Common Application that allowed low and middle-skill workers to apply to multiple app-based gig companies using just one form. Successful applicants received a free 6-month LinkedIn subscription to help them upskill and search for full-time roles while engaging in gig work.

We partnered with workforce centers across Arizona to showcase LinkedIn Gigs to job-seekers, and launched this as a limited 10-week pilot in Phoenix in April 2017.

Utah | InPloyment Project

Last year, the team launched our first-ever pilot to study the impact of LinkedIn on unemployment. In close partnership with the state of Utah's Department of Workforce Services (DWS), LinkedIn provided Job Seeker and LinkedIn Learning subscriptions for 300-500 unemployed workers, plus training for staff employment counselors who provide counseling to those workers. We found that pilot program participants were less likely to exhaust their unemployment benefits when compared to a control group. In addition, 75% of participants indicated that the partnership made them more likely to recommend services provided by the Utah DWS. We will continue to use findings from the pilot to learn how we can effectively engage the nearly 17 million Americans who receive Unemployment Insurance, and to help state and federal decision-makers shape policy for the $45 billion Unemployment Insurance program.

Cleveland | Health IT Project

In June, we partnered with the City of Cleveland, BioEnterprise, Cleveland State University, and Cuyahoga County to launch an analytics project designed to support Cleveland's health IT sector. LinkedIn provided city stakeholders with information about the disconnect between the skills needed by local employers and the available skills in the Cleveland community, with the aim of identifying opportunities for talent development in fast-growing fields like software engineering and data science.

When we launched the partnership in June, Cleveland Mayor Frank Jackson discussed the importance of building pathways to opportunity for a broad cross-section of job-seekers in the city, including formerly incarcerated individuals. We will continue to work with our partners in Cleveland to expand and diversify the pipeline of health IT talent in the city.

Los Angeles | Tech Talent Pipeline

In 2017, we joined Los Angeles Mayor Eric Garcetti in highlighting the launch of the LA Tech Talent Pipeline, leveraging LinkedIn data to support efforts designed to help grow the city's tech economy. The LA Tech Talent Pipeline supports HIRE LA's Youth, a flagship program to provide job opportunities for Angelenos between the ages of 14 and 24, and youth and young adults in our local community colleges.

Through our partnership, LinkedIn data was incorporated into a comprehensive report detailing the status of the city's tech talent pipeline, which was shared with the city's Workforce Development Board and Economic and Workforce Development Department, local community colleges, and other local educational institutions to help create new pathways for LA residents to access training in high-growth tech fields.

National League of Cities | Building Equitable Pathways to Postsecondary and Workforce Success

LinkedIn joined forces with the Kresge Foundation and the National League of Cities (NLC) to support the Building Equitable Pathways to Postsecondary and Workforce Success project -- a two-year initiative in which six cities (Charleston, SC; Nashville, TN; Jacksonville, FL; Houston, TX; Corpus Christi, TX; and Austin, TX) develop strategies to promote greater access to workforce-relevant credentials and meaningful employment opportunities. The Mayors of each participating city have committed to working with the NLC to build and scale programs that will remove pervasive equity barriers to access and success in education and the workforce.

During the months of July and August, we embarked on a roadtrip to conduct in-person briefings with the Mayors of each city, sharing insights from the Economic Graph on regional labor market trends -- including hiring patterns, migration, and the skills in greatest demand from regional employers. Our data will support participating cities' efforts to identify local skill gaps and develop programs that connect job-seekers with training and employment opportunities.

LinkedIn representatives also participated as speakers and panelists at the NLC's City Summit in Charlotte in November, as well as at the December Mayor's Institute in Washington, DC.

In 2018, we will join the Mayors of these six cities at the NLC Mayor's Institute in Austin to share updates on each city's efforts to support postsecondary and workforce success. We are also collaborating in the development of a report designed to highlight best practices from the six participants and help other cities explore sustainable and equitable economic development solutions.

▪ Additional City Projects

New York City

We used Economic Graph data to provide New York City, as part of its Tech Talent Pipeline initiative, with insights on the current state of the city's tech industry. The city used the insights to determine "how to deploy $10 million in funding to help NYC schools, government, nonprofits and companies better prepare New Yorkers for in-demand tech jobs and fuel the continuing growth of NYC tech businesses." This led to the launch of 10 new and expanded programs focused on in-demand fields identified by LinkedIn including mobile development, web development, software engineering and cloud administration.

Chicago

In Chicago, the team analyzed the city's software engineering talent, the migration patterns of talent, and the companies that are improving the local tech scene. This research directly informed outreach strategies for the city's ThinkChicago event, a workshop for aspiring graduates from top universities across the country.

New Orleans

In New Orleans, we analyzed the top industry demand and the skills on entry-level job postings to determine whether there are strong differences between job applicants and confirmed hires.

We determined that medical industries are the most prevalent across the entire metro area. Within the city, recreational industries are largest; in Greater New Orleans, manufacturing industries are largest. These employers make up about one-third of the local economy.

Seattle & Vancouver

We partnered with the Boston Consulting Group to analyze the connections between Seattle and Vancouver and the economic growth of the broader region between the two cities. LinkedIn's research suggests that while Seattle and Vancouver individually have rich human capital, there is a low level of connectedness between the two cities, which could be an impediment to regional growth.

Toronto

We also partnered with Civic Action and the City of Toronto to examine ways in which the Economic Graph can assist with mitigating youth unemployment across the City of Toronto. We determined that the Toronto region has a strong, highly-skilled workforce when it comes to technology -- and that not only are tech-related skills in high-demand, but a significant portion of tech-skilled LinkedIn members are in "early career roles," which generally require less than five years of experience. LinkedIn also identified skills that were most likely to be found among Toronto-area members who were recently hired into early career roles. Toronto is now using the data to help youth learn tech-related skills and bolster its tech sector.

Ottawa

The City of Ottawa hosted the Education and Economy Summit at City Hall and showcased LinkedIn insights before 250 participants from local school boards, post-secondary institutions, government and private sector partners, NGOs and students with the goal of increasing collaboration and creating employment opportunities for students, and ultimately, more start-ups and jobs in the city.

Multilaterals and International Organizations

World Economic Forum | Global Human Capital Report 2017

In 2017, LinkedIn collaborated with the World Economic Forum (WEF) in the development of a series of reports focused on human capital and the future of work, both globally and in specific geographic regions (including the Middle East and Africa).

In September, the WEF published its 2017 Human Capital Report, one of the leading commentaries on the current status, gaps, and potential in human capital across the world. The 2017 report includes an index ranking 130 countries on how well they are developing their human capital.

LinkedIn's insights and findings were a central part of the 2017 Human Capital Report. Economic Graph data highlighted the following, among other insights:

- **The breadth of degree specialization among different age groups.** Overall, our data found increasing diversification and specialization of degrees, reflecting increasing demand for more specific skill sets across the economy.

- **The extent to which different industries hire individuals with certain degrees.** Industries like consumer, media, and entertainment, as well as the public sector and nonprofits, hire from a wider pool of degrees than energy, financial services, healthcare, and telecommunications.

- **The distribution of "cross-functional" skills across ages and degrees.** We found that "cross-functional" skills (the most commonly mentioned skills across our global membership) are not evenly distributed across degrees. For instance, individuals who studied engineering or IT are more likely to have skills in project management than in customer service or leadership.

In addition to analysis of Economic Graph insights, the report also acknowledges the "unique and illuminating data on the global human capital landscape" that LinkedIn can provide -- as well as the concrete, immediate benefits such insights can deliver to governments, policymakers and other leaders.

World Economic Forum | The Global Gender Gap Report 2017

We also collaborated with the World Economic Forum in the development of its Global Gender Gap Report, which examines whether countries distribute resources and opportunities equitably between women and men.

As detailed in a blog post by Sue Duke, Senior Director of Public Policy, Economic Graph insights into global gender representation included:

- **Women represent fewer than 50% of leaders in every industry analyzed.**
  In some fields, such as energy and mining or manufacturing, the representation of women is even lower, with women holding fewer than 20% of leadership positions.

- **The rate of progress for women has been slow.**
  Over the past decade, the proportion of female leaders has increased by an average of just over 2% across the 12 industries studied.

- **When women are better represented in leadership roles, more women are hired across the board.**
  Economic Graph data suggest that a critical step in the closing the gender gap will be accelerating the representation of women in leadership roles.

The World Bank | Competitive Cities Project

In 2017, LinkedIn kicked off a partnership with the World Bank aimed at uncovering labor market insights in developing economies worldwide. The first pilot project, which took place in South Africa, leveraged Economic Graph data to better understand indicators of entrepreneurial activity, analyze the skills in demand across industries, and examine migration patterns of talent in and out of the country.

Among the highlights from the pilot, which was featured in the World Bank's Economic Update for South Africa:

- South Africa is losing more professionals than it is gaining, due in large part to emigration to the United States, the UK, and Australia.

- However, LinkedIn data also indicate that South Africa is a fertile environment for entrepreneurship. Cape Town, Pretoria, and Johannesburg have a "large base of entrepreneurs that outstrips that of similar cities in larger countries.