



THE ECONOMIC GRAPH

North America Update

■ Executive Summary

There are more than three billion people in the global workforce. LinkedIn's vision is to create economic opportunity for each and every one of them. The development of the world's first Economic Graph helps make that vision a reality.

The Economic Graph is a digital map of the global economy and a source of information for individuals, governments and private sector organizations that are making decisions about jobs, education and training. Today the Economic Graph is comprised of over 467 million members on LinkedIn around the world, seven million companies, over thirty thousand institutions of higher education and almost seven million open jobs.

The Economic Graph is the company's 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

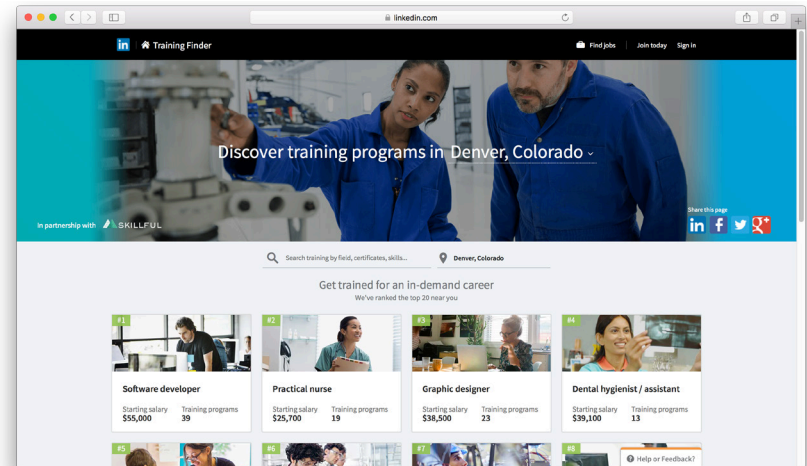
works on helping LinkedIn become a primary source of insights and ideas that guide leaders' decisions on workforce development across the globe. The team does this by bringing to life research and pilot projects that help leaders understand and address the future of the global workforce.

This document is a high-level overview of selected work completed by the team in the past 12 months. 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 the 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 partnerships we have engaged in with local governments, the White House and nonprofits and academia over the past year. Third, we outline some of the deeper research projects that have expanded our own thought leadership and impact in this space.

Pilot Programs

Training Finder Product Launch with Skillful in Colorado and Arizona

Over the past year, **one of our team's largest 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** program. The team launched **Training Finder**, a new 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. In addition, our pilot provides a unique combination of online tools with offline events and training. **Our city staff works closely with the governmental and community organizations that directly support middle-skilled workers.** In the first five months since launch, the ground game staff



has trained almost 8,000 workers, career coaches and navigators across both locations. **Our work is critical** because 44 percent of the recruiters and hiring managers we surveyed in Colorado and Arizona said it's hard to find people with the right technical skills, and 54 percent of workers who have a high school diploma and some or no college education said they don't know what jobs are available, and whether or not they need additional training to acquire the skills required for those jobs. The

Governor of Colorado has **repeatedly praised** LinkedIn for our investment in the state and the importance of this work for Colorado's economy.

InPloyment: Utah Unemployment Project

In June, the team launched the first-ever pilot to study the impact of LinkedIn on unemployment. In close partnership with the state of Utah, LinkedIn has been providing Job Seeker and Lynda subscriptions for 300–500 unemployed workers, plus training for staff employment counselors who provide counseling to those workers. The pilot's outcomes will be used by the state and U.S. Government to shape government policy in an unemployment insurance program that operates 2,500 jobs centers, employs thousands of employment counselors, spends \$45 billion on annual benefits and services approximately 17 million members.

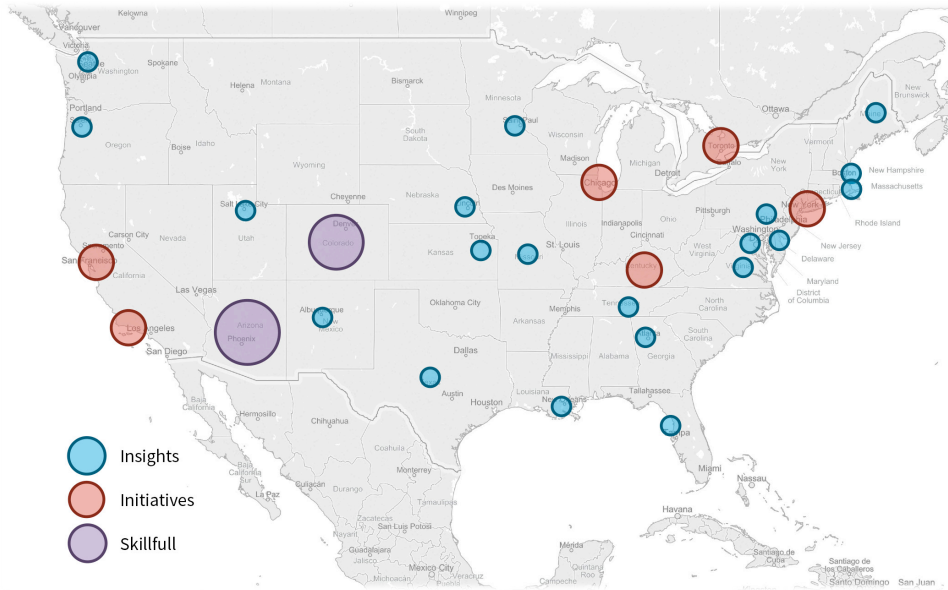
Multilateral and International Governmental Organization Projects

North America

City Research Projects

Our work in Colorado and Arizona is one of many examples of how we're using the Economic Graph and LinkedIn to help create economic opportunity.

Apart from the work with Colorado and Arizona, the Economic Graph team has engaged with more than 50 other city governments on smaller scale initiatives. Following are some of the major projects that we have done in North America, Europe, the Middle East and Asia-Pacific.



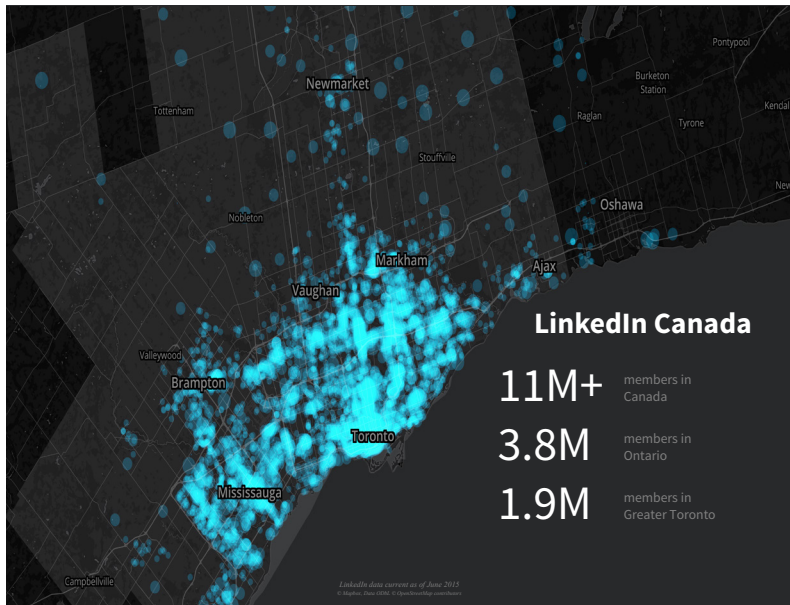
We used Economic Graph data **to provide New York City**, as part of its **Tech Talent Pipeline initiative**, with insights on the current state of the city’s tech industry. The city used the insights to determine “how to deploy \$10 million in funding to help NYC schools, government, nonprofits and 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.

We 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. Of the 1.9 million members in the Greater Toronto

Area (GTA), 11 percent are sharing on LinkedIn that they have technology skills. We determined not only that tech-related skills are in high-demand, but also that a significant portion of tech-skilled LinkedIn members are in “early career roles,” positions that generally require less than five years of experience. In fact, one in 10 GTA companies currently employs technology-skilled

members in early career roles. 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. For example, Seneca College—one of the largest colleges in Canada—is updating its curriculum and offering new courses to help prepare youths for careers in tech.

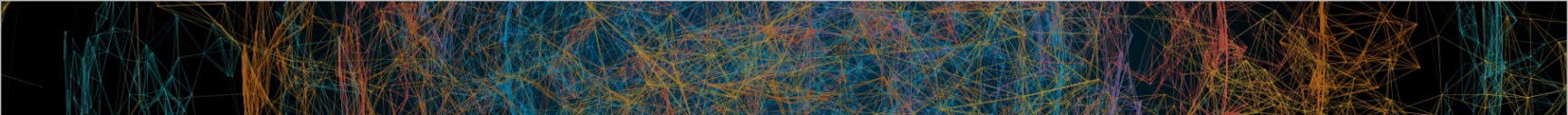


In **Chicago**, the team analyzed the city's software engineering talent, the migration patterns of talent and the companies that are improving the local tech scene. This research directly informed outreach strategies for the city's ThinkChicago event, a workshop for aspiring graduates from top universities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

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.

We also partnered with the Boston Consulting Group to analyze the connections between the two cities and the economic growth of the broader region of **Seattle** and **Vancouver**. **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.

Most recently, 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. Mayor Jim Watson opened the day discussing the importance of building stronger partnerships between educators and employers. In addition, his Excellency the Right Honourable David Johnson, Governor General of Canada, **shared the importance** of government, employer and educator collaboration.

The White House Partnership on TechHire

In March 2015, President Obama **announced** that 21 communities are committed to taking action—with each other and with more than 300 national employers—to expand access to tech jobs as they surface and support local employer demand. In June, during the U.S. Conference of Mayors, President Obama specifically referenced LinkedIn as a part of his plan to connect individuals around the country to tech-related opportunities. By the end of 2015, the White House expanded its efforts to over 50 cities. The Economic Graph team has worked with almost all 50 TechHire communities, in addition to other cities, using our labor market insights to expand information for policy makers around the skills that are most in-demand in their local economies, and how to best attract, train and retain talent across the workforce.

■ Non-governmental Organizations and Thought Leadership

World Economic Forum

The Economic Graph was featured in its second report with the **World Economic Forum on Human Capital**. The Human Capital report is an important component to the Economic Graph team's effort to bring our vision to life. The Human Capital report illustrates the importance of skills over job titles; introduces the idea of transferable skills; demonstrates the supply, demand and flow of talent; describes a new skills diversity measurement of countries across the world; and explains the gig economy with job titles. Key highlights include the following:

- **LinkedIn data reveals** that understanding an economy's human capital base at the actual skills level is crucial because **formal qualifications alone are often insufficiently meaningful**.

The hundred largest talent flows between countries



- **Data from LinkedIn's Economic Graph** makes it possible to visualize the inflow and outflow of human capital between countries ... identify the specific skillsets countries are gaining and losing in the global marketplace for talent.
- *LinkedIn's data was able to shed some light on whether online gig-economy workers represent a new form of work or a continuation and digitization of existing analogue forms of own-account work.*

Brexit Research Agenda

We have developed a [Brexit research program](#) to strengthen LinkedIn's position as the go-to source for labor market & talent migration data. We will continue providing [insights](#) into the different aspects associated with the UK's decision to leave the European Union. The focus will be on insights into talent supply and demand, and migratory flows between the UK and the continent.

Spotlight on Early Caucus States

As part of our work examining early battleground states for the 2016 election, our team studied labor supply and demand trends across Iowa, New Hampshire and Texas in our Spotlight series. In February, we examined New Hampshire through our [LinkedIn Workforce Spotlight](#) about industries and skills that are shaping the U.S. labor market.

Later, we examined Iowa through our [LinkedIn Workforce Spotlight](#). Over the past year, Iowan nonfarm payrolls grew by only 1.4 percent (slower than the 1.9 percent national pace) as measured by the BLS; however, jobs in the Professional, Scientific and Technical Services

(PSTS) sector within Iowa grew by 4.2 percent—outpaced in this sector by only 11 other states.

We also analyzed the growing and declining industries across the major cities in Texas as a part of [LinkedIn's Workforce Spotlight](#) to surface new insights about the regions, industries and skills that are shaping the U.S. labor market. According to our data, Texas' vulnerable energy-related jobs are not spread uniformly across the state. Of the four major metro areas in the state, Houston particularly has heavy exposure to the oil and energy industries.

Millennials

Is it harder for employers to retain millennials in the workplace today than it was to retain previous generations? [Our team analyzed LinkedIn data and found that, over time, job- and industry-hopping have steadily increased](#). Furthermore, our research shows that job-hopping most commonly occurs in the Media and Entertainment, Professional Services and Government/Education/Non-Profit industries, and that it has become increasingly more common for women to job hop (when compared to men).

The McKinsey Global Institute Report

The team collaborated with the **McKinsey Global Institute** to provide insights using LinkedIn global survey data of part-time and full-time workers. **Example insights include** how workers feel about the trade-off between time worked and pay, whether workers believe their jobs actually make use of their skills and the top reasons employees decided to leave earlier jobs.

Gig Economy Initiatives

The gig economy (defined here as the on-demand, peer-to-peer platform economy—e.g., Lyft, Instacart and DoorDash) is one of the fastest growing and most innovative parts of the labor market. Earlier this year, LinkedIn hosted a meeting with Labor Secretary Thomas Perez and leaders from the sharing economy. The companies discussed issues related to their business models, training, benefits and the ways in which companies like LinkedIn can measure training and upskilling outcomes for employees.

The team recently launched a new initiative, Project Gig, to understand (1) what the key career-related needs of gig workers are; (2) whether LinkedIn is fulfilling those needs; (3) if it is not fulfilling them, whether LinkedIn can fulfill those needs; and, (4) if so, how LinkedIn can fulfill those needs.

How to Become an Executive

Millions of executives have mapped out their career paths on their LinkedIn profiles, so **we decided to see if we could quantitatively identify their keys to success**. We started by analyzing the career paths of approximately 459,000 LinkedIn members globally who worked at a Top 10 consultancy (per Vault Consulting Rankings) between 1990 and 2010 and became a vice president, C-level executive or partner at a company with at least 200 employees. Approximately 64,000 members reached this milestone. Then, from LinkedIn member profiles we analyzed both observable and inferred traits like educational background, gender, work experience and career transitions. At the end of the day, the probability of becoming an executive is merely 14 percent.