Seeing Through the Fog of the Talent War

US IT Workforce Market Supply and Demand Trends

CEB
WHAT THE BEST COMPANIES DO

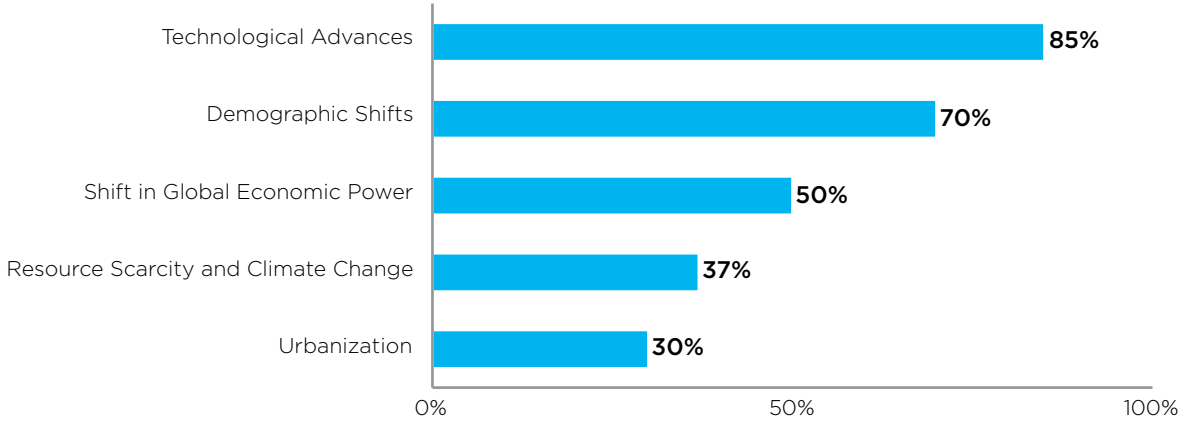
Executive Summary

- Technology and talent are the scarce commodities of a knowledge-worker economy.
- The IT workforce segment is a global job growth engine for the United States.
- The IT workforce will grow faster outside the IT industry over the next five years, leading to increased sector and geographic diversity.
- The US IT workforce supply remains geographically concentrated in a few states and cities.
- Emerging states and cities reflect the new diversity of changing IT workforce demand.
- The US IT workforce will expand further beyond traditional geographies into emerging talent hubs.
- A new computing wave is creating supply gap in emerging IT workforce hubs.
- Corporate and government executives who innovate to address the IT workforce supply-demand gap are likely to secure competitive talent advantage.

Technology and talent are the scarce commodities of a knowledge-worker economy.

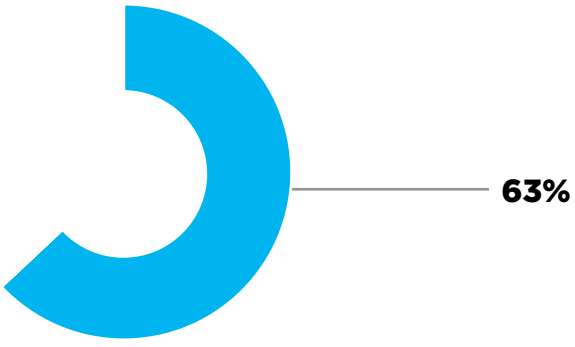
Recent surveys identify **technological advances** and **labor demographics** as the two global trends disproportionately of concern to CEOs. Together, these two trends highlight corporate leaders' increasing concern about the availability of skills necessary to keep up with modern consumer and business technological evolutions that are occurring an accelerating pace. Indeed, in a 2014 survey of CEOs by PwC, 63% of CEOs cited skills availability as a major concern, a new high for the seven years in which the question had been asked.

What Global Trends Will Most Impact You Over the Next Five Years?



Source: PriceWaterhouseCoopers, 17th Annual Global CEO Survey, 2014, http://www.pwc.com/gx/en/ceo-survey/.

Skills Availability Is a Serious Concern



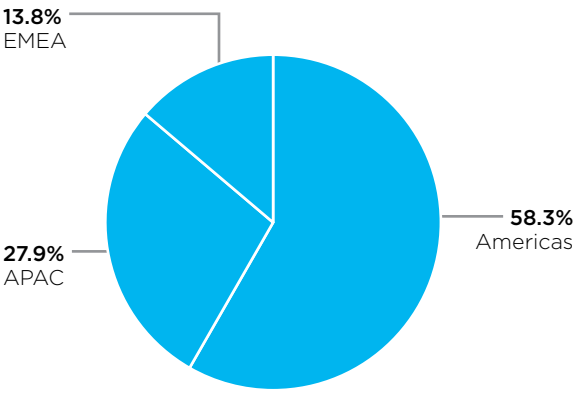
Source: PriceWaterhouseCoopers 17th Annual Global CEO Survey, 2014, http://www.pwc.com/gx/en/ceo-survey/.

The IT workforce segment is a global job growth engine for the United States.

The United States has been a global leader in the development of the information technology (IT) industry sector. In 2013, the top 100 IT employers headquartered in the United States posted 211,350 jobs globally, of which 51% were IT jobs. This translates to 83,600 IT jobs across 293 locations, of which 142 are based out of the United States. The top 15 countries had a combined majority share of 95% of total IT jobs, with the United States having a majority share of 56.2%.

Total Jobs Posted for Experienced Hires (> Two Years) for Top 100 US IT Workforce Employers

Total Lateral IT Jobs Posted in 2013:
83,600



Source: CEB analysis.

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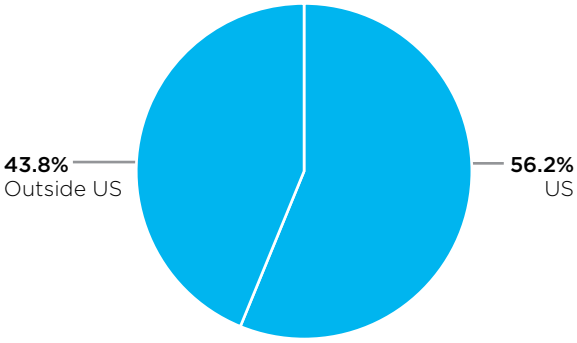


Source: CEB analysis.

The IT workforce will grow faster outside the IT industry over the next five years, leading to increased sector and geographic diversity.

Although the IT sector now employees approximately one-third of the total IT workforce, non-IT industries employ the remaining two-thirds of private sector IT workers. The IT sector will remain a significant source of demand over the next five years, but IT sector employment demand will stagnate as a percentage of the total US IT workforce. By comparison, non-IT sectors are estimated to expand their share of the total IT workforce. The Manufacturing and Automotive industries are forecasted to most aggressively expand the share of the workforce, followed by the Healthcare, Retail, and Aerospace & Defense sectors.

US IT Workforce Distribution and Five-Year Projections by Industry

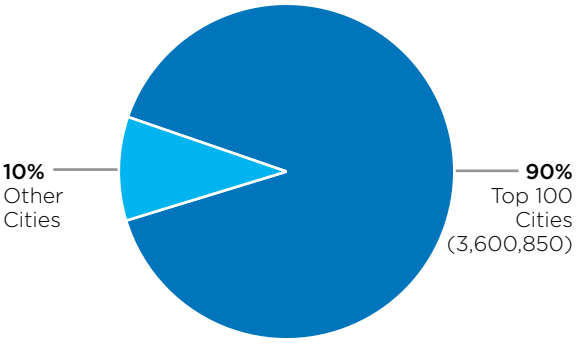
Sector	2013 (Estimated)	2018 (Forecasted)	Five-Year Workforce Growth
Information Technology	33.70%	32.0%–35.0%	Low
Financial Services	12.50%	12.0%–13.5%	Low
Healthcare	12.30%	12.4%–15.5%	Moderate
Manufacturing	10.30%	12%–18.5%	High
Retail	8.20%	8.5%–10.1%	Moderate
Automotive	3.80%	4.2%–7.5%	High
Aerospace & Defense	3.80%	3.8%–4.7%	Moderate
Energy	2.10%	2.1%–2.4%	Low
Consulting	1.50%	1.7%–2.2%	Low
Pharmaceuticals	1.80%	1.8%–2.6%	Low
Logistics, Supply Chain	0.90%	1.0%–1.7%	Low
Others	9.10%	7.5%–8.0%	Negative

Source: CEB analysis.

The US IT workforce supply remains geographically concentrated in a few states and cities.

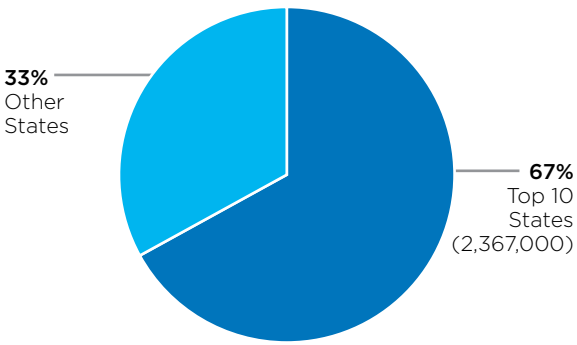
In 2013, of the roughly 4 M US IT workers, 90% of the "installed base" of talent were in 100 cities, and 67% (> 2.3 M) were located in 10 states. Not surprisingly, the states that are the largest employers of the IT workforce include those with well-developed academic and business centers such as California, New York, and Texas. That said, states including Ohio, Florida, Pennsylvania, Illinois, and Washington, DC, are also large employers of the IT workforce.

Total IT Installed Talent Pool in US in 2013: 4,011,200



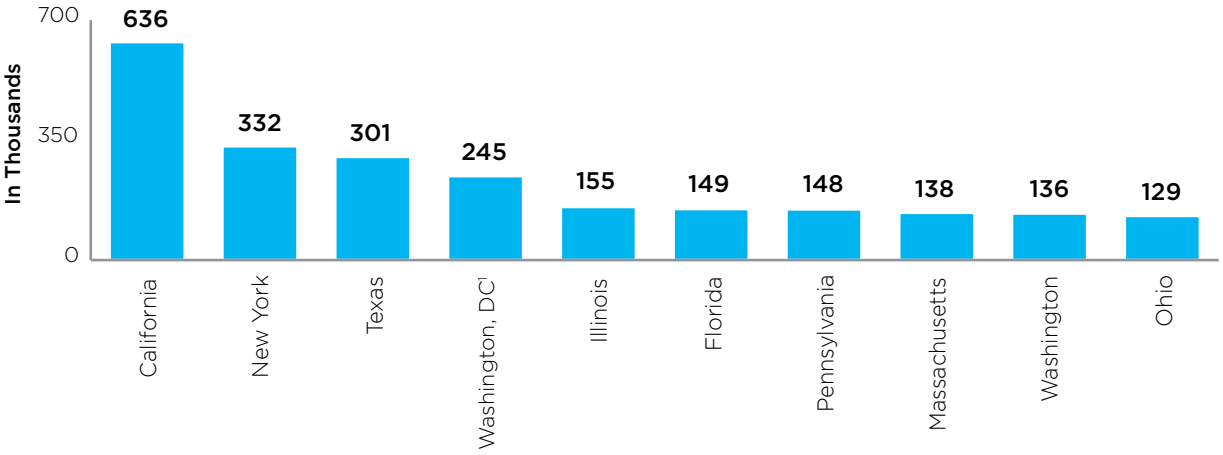
Source: CEB analysis.

Total IT Installed Talent Pool in Top 100 Cities: 3,600,850



Source: CEB analysis.

IT Installed Talent Pool in Top 10 States: 2,367,000



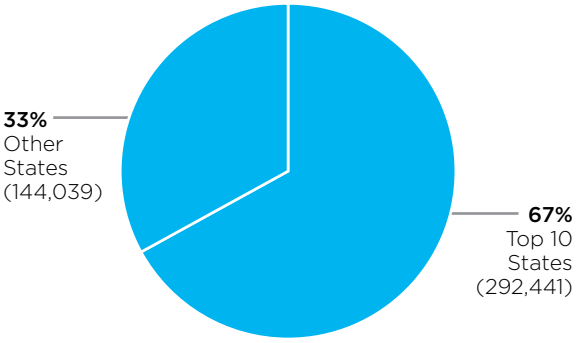
Source: CEB analysis.

[1] Washington, DC, is defined as Greater Metro area.

Emerging states and cities reflect the new diversity of changing IT workforce demand.

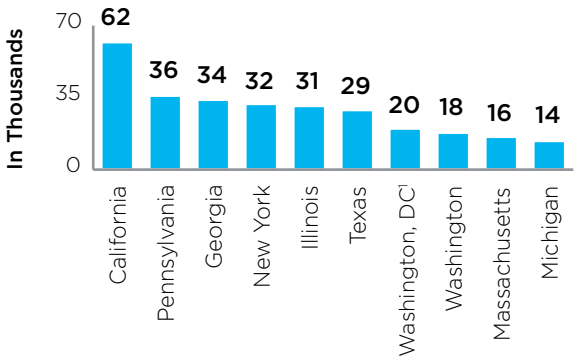
In 2013, a total of 436,480 jobs were posted in the United States. Of this, the top 10 states represented 67% of the total IT job demand. Many of the largest sources of supply also represent large demand; California, Pennsylvania, Georgia, Texas, New York, and Illinois all have more than 25,000 job openings. A growing number of states have 5,000 to 25,000 job openings, including the greater Washington, DC, metro area; Washington; Massachusetts; and Michigan. These facts suggest the emergence of a new set of talent hub locations for the IT workforce.

Total IT Job Openings in US in 2013 (January–December): 436,480



Source: CEB analysis.

IT Job Openings in Top 10 States: 292,441

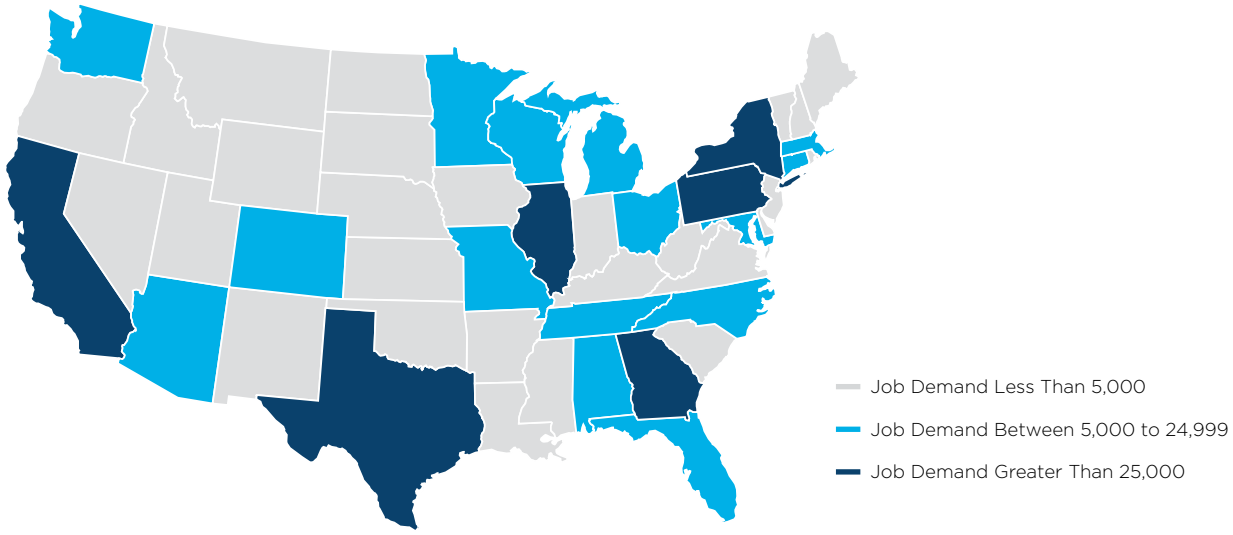


Source: CEB analysis.

[1] Washington, DC, is defined as Greater Metro area.

Note: All the job openings analyzed were posted during January to December 2013.

United States IT Workforce Demand
Number of 2013 Job Postings



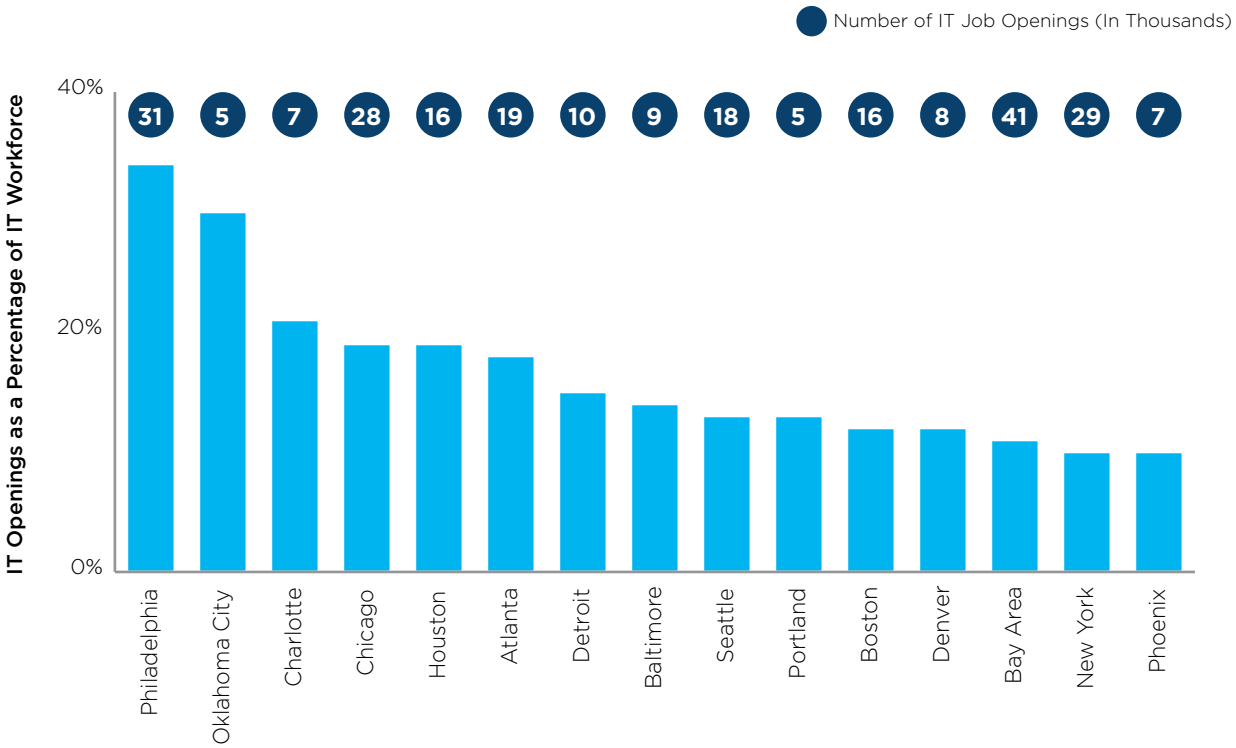
Source: CEB analysis.

Note: Hawaii and Puerto Rico states are not mapped.

The US IT workforce will expand further beyond traditional geographies into emerging talent hubs.

As technology-enabled products and services become more important to the innovation agenda of companies not traditionally defined as IT companies, both the demand and the supply of IT talent is growing beyond historical state and city IT talent hubs such as San Francisco or Seattle. The rise of Austin as an emerging IT talent hub has been followed more recently by cities such as Phoenix, Denver, Atlanta, Philadelphia, and Oklahoma City. These locations offer viable alternate opportunities for companies due to lower costs and availability of skilled talent. For example, in 2013, the number of open jobs as a percentage of the total IT workforce was at or above 30% in Philadelphia and Oklahoma City. For traditional locations such as the San Francisco Bay area and New York, the percentage was approximately 12%.

Sample of Top 15 Cities with IT Workforce Supply Shortages[1]
IT Job Openings as a Percentage of IT Workforce and Total IT Job Openings (In Thousands), 2013



Source: CEB analysis.

[1] Cities selected based on "material" supply shortage. "Material" is defined as greater than or equal to 10% IT job openings as a percentage of total workforce.

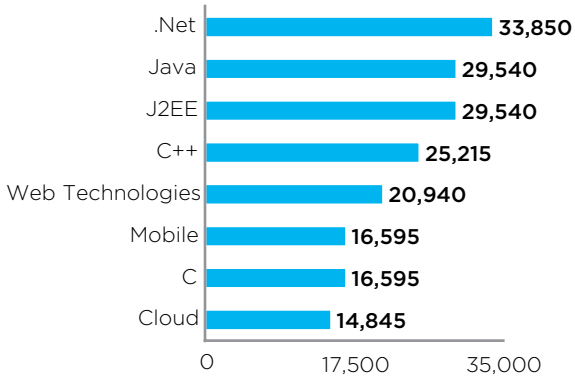
A recent wave of computing skills has created a supply-demand gap in emerging talent hubs.

Research sourced from CEB TalentNeuron data into supply-demand gaps at the job skill level indicates that 43% of job demand is clustered in eight skills: C, C++, J2EE, Java, .Net, mobile, web, and cloud. The degree of skill concentration evident in the supply-demand gap is more actionable if viewed specific to the city. Certain cities have a unique supply of skill-based IT workforce. For example, Atlanta has become a unique supply of mobile talent, while Minneapolis and Denver are emerging hubs for IT talent with cloud skills.

Total IT Job Openings in US in 2013 (January–December): 436,480

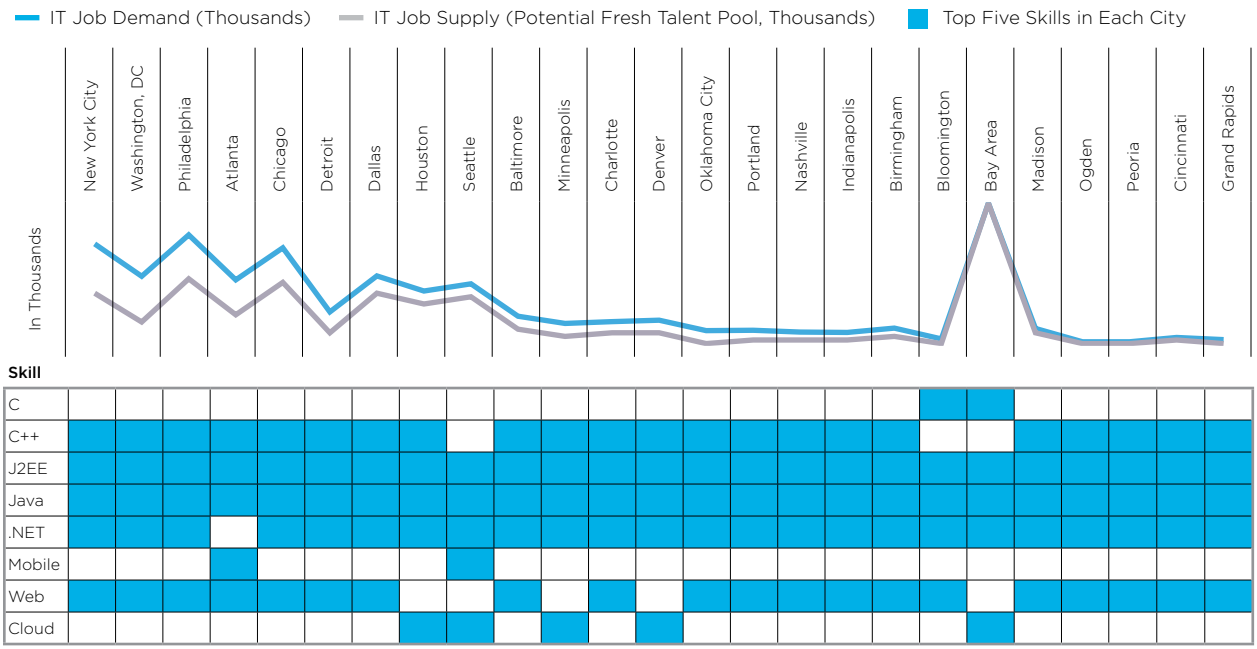
Source: CEB analysis.

Jobs Break Up by Top Eight Skills Across 100 Cities: 187,120



Source: CEB analysis.

Demand Versus Supply Gap: Top 25 Cities



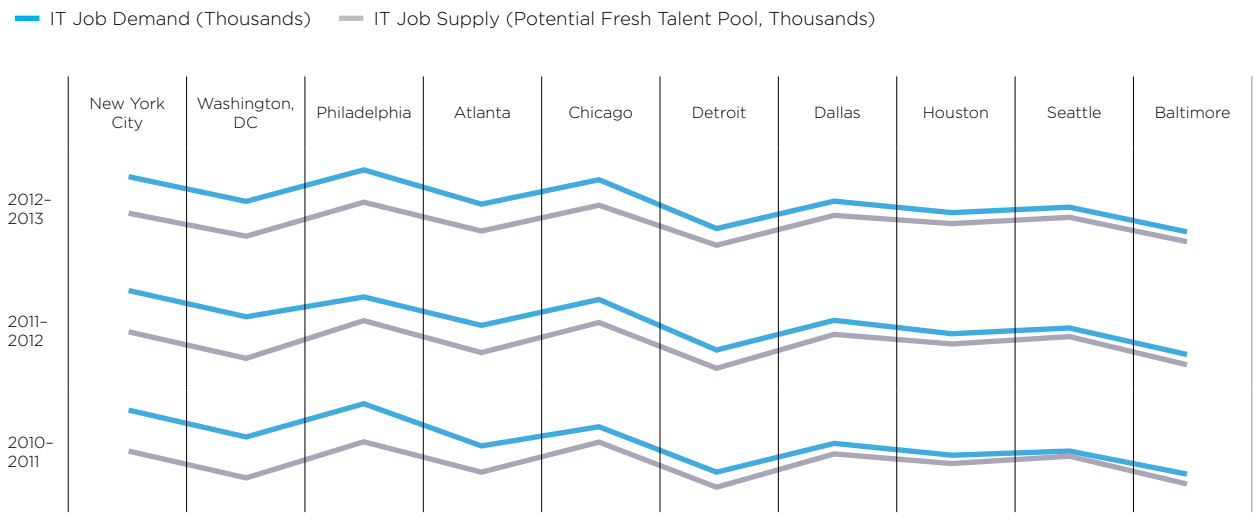
Source: CEB analysis.

Note: In cities like New York; Washington, DC; and the Bay area, there is an influx of fresh talent pool from various other cities.

The supply-demand gap in emerging talent hubs is increasing.

Analysis of market dynamics for the 10 cities with the largest supply-demand gap indicates the gap between supply and demand is increasing over the past three years, with new jobs being created at a rate far in excess of the supply of new talent entering the market. Moreover, the top five skills in demand by city highlight a considerable shift from traditional C and C++ skills to web, .NET, and mobile skills. The speed of change and hyper-specialization of skills in the IT workforce is creating competitive disruption in the IT workforce.

IT Talent Demand Versus Supply: Historical Trends by City



Source: CEB analysis.

Top Five In-Demand IT Skills
By Year, City, and IT Skill in Demand

	New York City			Washington, DC			Philadelphia			Atlanta			Chicago			Detroit			Dallas			Houston			Seattle			Baltimore		
Skill	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3
C	■			■	■		■	■		■	■		■			■	■		■			■	■					■	■	
C++	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■	■
J2EE	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■
Java	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■
.NET	■	■	■	■		■	■	■	■	■				■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■
Mobile										■		■		■											■	■	■			
Web		■	■		■	■			■		■	■	■		■			■		■	■		■		■	■				■
Cloud																								■		■	■			

■ Top Five Skills

Source: CEB analysis.

Companies and governments share the need to address the IT workforce supply-demand gap.

The growing gap between supply and demand has begun to drive uneconomic and unsustainable talent management practices in traditional talent hub locations, such as the practice of the "acqui-hire" in which companies pay extreme purchase price premiums for talent with no visible evidence of intellectual property, customers, or a business model. This is the new reality for companies that want to succeed in today's dynamic work environment, and the winners will be those companies who use location-based planning intelligence as a source of unique competitive talent advantage.

- **Investing in Talent Planning and Management of People and Processes:** Many companies have created a Chief Talent Officer role, which is tasked with integrating the information flows and decisions necessary to manage their talent assets through a supply chain lens.
- **IT Innovator Behavioral Profiling and Talent Identification:** With the growth of open-source software, employee contributions to innovation are ever more visible, whether through creating online social and professional profiles, searching open-government patent filing database, or monitoring code contributors to open-source software.
- **Talent Location Planning and Hub Optimization:** Companies have historically located their talent outside of corporate headquarters in locations where operating executives may have relationships, not by understanding where they have the highest probability of staffing (based on rapidly changing IT workforce dynamics).
- **Screening Employees on Potential Not Performance:** In acknowledgement of the increasing speed with which technology-specific knowledge becomes obsolete, best practice companies measure the job applicant competencies, screening for potential (to learn quickly, for example) over past performance in a similar job.

To arrive at its findings, CEB conducted a comprehensive market analysis covering more than 900 cities, 100 countries, and 1,000 skills and exploring their relative supply of IT talent against available jobs across all industry sectors. This was conducted using its CEB TalentNeuron offering, which leverages big data technologies and proprietary analytics to deliver unique talent market data, insights, and decision-support tools to determine where to locate talent, who to hire, and how to gain strategic competitive advantage through effective talent planning and management.

CEB Talent Management Services

CEB TalentNeuron Overview

Leverage **Big Data**, **Big Judgment**, and **Big Science** to plan, source, and optimize global talent.

WHY NOW

Rapid business changes and increasing emphasis on globalization adds much more complexity to business operations. The business risk from talent decisions is higher today than ever before. Our research shows that less than 25% of HR organizations are truly effective at talent planning activities. Today, HR needs to be driving talent decisions that impact business strategy and performance.

Our Solution

CEB TalentNeuron enables HR to proactively plan with the business on strategic talent needs. This powerful combination of data and insights on a cutting-edge technology platform provides you location, talent, and competitive intelligence.

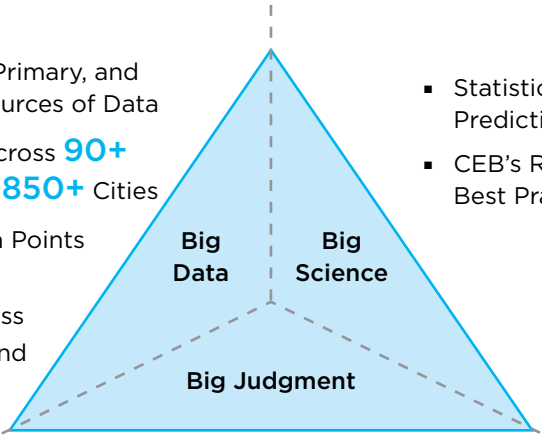
BUSINESS BENEFITS

- Accelerate geographic growth.
- Optimize cost of talent across operations.
- Reduce time to fill for strategic talent needs.
- Improve access to high-quality talent pools.

Empowering HR to Influence Strategic Talent and Business Decisions

CEB TalentNeuron: From Data to Intelligence

- **800** Public, Primary, and Proprietary Sources of Data
- Global Data Across **90+** Countries and **850+** Cities
- **12,000** Data Points per City
- Coverage across **10** Domains and **900+** Skills



- Statistical Models and Predictive Analytics
- CEB's Research and Best Practices

- Dedicated Team of Analysts
- Decision Support Through Advisors

Talent Planning Applications

- Strategic Workforce Planning
- Talent Hub Selection and Optimization
- Recruitment and Sourcing Planning
- Innovation and Outsourcing Management

CEB
WHAT THE BEST COMPANIES DO

CEB Talent Management Services

CEB TalentNeuron Overview

WHAT YOU GET

CEB TalentNeuron Features: Three Intelligence Pillars to Enable Your Decisions

Talent Intelligence

- Choose sources for strategic talent needs.
- Determine candidate pool size.
- Understand concentration of skills in universities, cities, and companies.

Location Intelligence

- Select cities for expansion and right-shoring facilities.
- Compare macroeconomic, geopolitical, and talent attributes across multiple cities.
- Compare total cost of talent across cities.

Competitive Intelligence

- Stay abreast of your competitors' sourcing activities.
- Compare salary ranges.
- Refine role description and employment brand based on competitor information.

Software Analytics Platform | Global Data | Workbench Services

About CEB

- 10,000+ Participating Organizations
- 16,000+ Leading Executives
- Approximately 85% of the Fortune 500
- 3,400 Employees Worldwide
- More Than 70% of Fortune 1000
- 110+ Countries
- 300,000+ Business Professionals

"TalentNeuron helps us not only make better decisions on location and talent but also validate those decisions over time."

VP of Talent Planning
Global Software Company

Select Clients and Advisors

DELPHI intuit LOCKHEED MARTIN Microsoft SIEMENS

Contact Us to Learn More

+1-866-913-6447

TalentAnalyticsSupport@executiveboard.com

www.talentneuron.com