Creating a 21st Century Workforce

Immigration Reform

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Overview

Our nation relies on a modern, highly skilled workforce to remain competitive and innovative in today’s global economy. Yet current policies are inhibiting our ability to find and retain top-talent as well as cultivate a sustainable long-term talent pipeline that is required to achieve a strong 21st century workforce. According to Cyberstates 2017, the U.S. tech sector employment grew by nearly 3 percent in 2016, approaching seven million workers. Without much needed reform, the United States will not be able to sustain this growth.

Workforce is a critical component to any organization. It is the dedicated and skilled tech employees who help to ensure growth, global competitiveness, continued innovation, and economic impact for the tech sector and country. Strengthening and building sustainability for the technology workforce must be a priority, and achieving this goal relies upon a three-pronged policy solution: immigration reform, improving STEM education initiatives, and greater investment in job training programs. While individually each aspect contributes to a robust talent pool, the future of our economy depends on all three of these important reform efforts.

The first in a three-part series, this paper focuses on immigration reform policy and why the immediate need for access to the global talent pool is vital to achieve a 21st century technology workforce. Future papers will cover the need for policies to improve STEM education initiatives and greater investment in job training programs.
To fully understand the scope of this issue, it is important to distinguish between tech industry employment and tech occupation employment. Tech industry employment consists of all the workers employed by tech companies, including positions that are not technical. Tech occupation employment consists of the technology specialists employed by organizations ranging from hospitals to banks to retail stores and utilities. When we examine the needs of a 21st Century workforce, we are taking into consideration the needs of not only the tech industry employment but also tech occupation employment.

While there are many factors that contribute to growth and competitiveness, it is the skilled workforce that is the heart and soul of the 21st century workforce. In addition to our immediate workforce requirements, a developed pipeline of qualified and talented prospects must be available to all organizations and industries operating within the U.S.

PROVIDING CONTEXT THROUGH COMPARISONS
Tech Sector Employment vs. Other Industry Sectors

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech</td>
<td>6.7</td>
<td>6.9</td>
</tr>
<tr>
<td>Construction</td>
<td>6.4</td>
<td>6.6</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>5.7</td>
<td>5.8</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>4.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Arts, Entertainment and Recreation</td>
<td>2.2</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: EMSI | U.S. Bureau of Labor Statistics | Select data are rounded
The U.S. Technology Industry and Global Competitiveness

The U.S. technology industry faces significant foreign competition. The $1 trillion U.S. market is roughly 28% of a $3.8 trillion global market. Significant growth in Asia continues to intensify this competition.³

In 2016, the U.S. technology sector workforce grew by nearly 3% (182,000 jobs), bringing industry totals close to 7 million workers – approximately 4% of the total U.S. workforce.⁴

As technology companies expand into new sectors – artificial intelligence, driverless cars, Internet of Things (IoT), and blockchain, the exponential technology growth has placed significant demands on the industry’s domestic talent. Each of these emerging fields are reliant on a high-skilled workforce and, not surprisingly, are the focus of the U.S. technology industry and their global competitors.

While the data clearly shows the strength of the technology industry and its growing workforce, it doesn’t address a talent pipeline that is increasingly falling short of the needs for technology workers across all sectors. As global competition mounts, recruiting top talent is only becoming more important. Foreign competitors are recruiting globally and doing so aggressively; the United States must reform its immigration laws to remain competitive in this space.

Source: EMSI | U.S. Bureau of Labor Statistics | Select data are rounded
The Skills Gap

Roughly 3 domestic jobs are created as a result of every foreign-born hire with a STEM degree. As the gap between open high-tech positions and available skilled professionals has widened, the domestic workforce pipeline continues to be strained. This risks the long-term stability of the industry and misses an opportunity to strengthen the American tech workforce.

While there are disagreements over how to address this shortfall of skilled labor, the data overwhelmingly demonstrates the skills gap not only persists, but continues to grow. According to a recent report by the New American Economy, 3.3 million STEM jobs were posted online in 2016, while only 254,995 STEM workers were unemployed. This works out to 13 posted jobs for every unemployed STEM worker. In some states, the story is even worse – North Dakota reported having 87 STEM positions for every out of work STEM worker. Along those same lines, the unemployment rate for U.S. citizen STEM workers was 2.8% in 2016, compared to 4.6% for all workers.

Furthermore, a recent CompTIA survey finds that 8 in 10 IT and business executives are at least somewhat concerned that the workforce does not meet employers’ needs. Another 25% are very concerned about this skills gap.

Projections indicate that by 2024 (with 8 million projected technology jobs), 25% of all tech jobs will be unfilled. As current trends indicate, there simply isn’t the domestic workforce available to meet the growing (or existing) demand for top talent. Everyday that we are not filling our workforce needs of today only puts us further behind for tomorrow.

While these alarming shortfalls provide a remarkable view into the growth patterns of the technology sector, they also certainly highlight a looming crisis within the skills pipeline. Avoiding that crisis won’t happen by turning to an American-only skilled workforce, and the data clearly shows that is not feasible anyway. At the same time, ignoring this skills gap will only add to the long-term consequences for the U.S. talent pipeline.

Fortunately, these issues are solvable. We need to start by addressing some of the problems created by our current immigration system.
Immigration Barriers to Filling the Skills Gap

There is no realistic way to narrow the pipeline gap without opening more opportunities for immigrants.

At least 50% of those graduating from U.S. universities with a master’s degree or PhD in a STEM field are foreign nationals. At the same time, trends indicate that the number of U.S. citizens and permanent residents with the same qualifications are declining significantly as an overall percentage of STEM doctoral recipients.

According to a recent report by the Ewing Marion Kauffman Foundation, “69 percent [of foreign graduates in 2016] came from China, India, South Korea and Taiwan. These are emerging economies that are seen as increasingly challenging to U.S. dominance in science and technology, which are also building their own research and university systems.”

While the U.S. remains a key education resource for much of this top talent, our immigration policies are limiting our own abilities to retain these students after graduation, despite the high demand within the U.S. technology sector. For the last five years, H-1B visa applications have reached the statutory caps (limited to 85,000) within days of the application period opening. This year, 199,000 applications were received within the first four days of the application period.

There is one exception. The Optional Practical Training (OPT) program allows all international students to remain in the U.S. for one year after they have completed their degree to work in a job related to their field of study. STEM graduates may extend for a total of two years. However, once this window of time expires, the student may only remain in the U.S. by way of a highly competitive work visa. This takes us back to the problem with H-1B visas.

These constraints make it more difficult for U.S. companies to attract the best and brightest, while making it easier for foreign businesses to compete for these talented individuals. The uncertainty of knowing whether or not a high-skilled worker could establish any sort of permanence in America after graduation is creating a deterrent from trying to do so. That combined with the open arms approach of neighboring nations means we are creating an even bigger obstacle for our nation to overcome. Many countries have established impressive incentives to attract high-skilled labor to build their technology sector’s workforce; the growth in this sector is a strong indication their policies may be working.
In Canada, for example, an international student can obtain a temporary work permit while studying and then obtain an “open” work permit for up to three years after graduation from a postsecondary academic program. From there, students are often able to find skilled work and become a permanent resident without ever leaving the country. In Germany, there are “job seeker” visas available that allow recent highly qualified graduates to stay for six months to look for employment. The list goes on. As a nation, we must do better and enable foreign born talent to begin their careers in the United States.

### STATES WITH THE HIGHEST SHARE OF FOREIGN-BORN STEM WORKERS, 2014

<table>
<thead>
<tr>
<th>State</th>
<th>Foreign-Born Share of STEM Workers</th>
<th>Foreign-Born Share of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>39.8%</td>
<td>21.7%</td>
</tr>
<tr>
<td>California</td>
<td>39.8%</td>
<td>27.0%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>27.3%</td>
<td>15.6%</td>
</tr>
<tr>
<td>New York</td>
<td>26.6%</td>
<td>22.6%</td>
</tr>
<tr>
<td>Delaware</td>
<td>24.8%</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

http://www.newamericaneconomy.org/issues/innovation-stem-fields/

### RETENTION OF INTERNATIONAL STUDENTS POSTGRADUATION

All countries rated on a scale of 1 to 5, with 5 being the highest Lawful Permanent Residence For High-Skilled Workers

http://businessroundtable.org/state-of-immigration/retention-international-students-postgraduation
The Value of a High-Skilled Workforce

High-skilled workers are vital to maintaining a strong technology industry and solidifying a workforce pipeline that creates more high-paying American jobs.

America benefits from the contributions of highly educated, entrepreneurial professionals, regardless of where they were born. For example, more than 40% of Fortune 500 companies were founded in whole or in part by immigrants or their children. In addition, more than 63,000 foreign students have received STEM graduate degrees in the United States since 2014.

Simply put, high-skilled workers will narrow the existing skills gap and help build the pipeline necessary to cultivate domestic talent. America does not have a monopoly on brainpower, and in an increasingly competitive global environment, we must retain the talent that will keep us at the leading edge of worldwide innovation.

The Road Map for Immigration Reform

Our immigration policy recommendations are focused on three core principles: (1) closing the skills gap, (2) building a long-term pipeline for American jobs; and (3) remaining competitive within the global marketplace. Our policy recommendations are:

- **Increase Green Cards for High-Skilled STEM Graduates**: CompTIA supports increased access to Green Cards for high-skilled STEM graduates by expanding the exemptions and eliminating the annual per-country limits for employment-based Green Cards.

- **Create New Visas for Entrepreneurs**: These new visas will help foreign-born entrepreneurs to create new businesses in the United States. CompTIA also supports the International Entrepreneur Rule. This rule would allow DHS to temporarily "parole" entrepreneurs whose startups provide a “significant public benefit” through a strong potential for rapid growth and job creation. This is also known as the “start-up visa.”

- **Market-Based Visa Caps**: We need to eliminate the arbitrary cap on visas and move to a market-based approach. Using market-based caps for H-1B visas are the best way to adjust to the supply and demand in the U.S. economy.
Conclusion

The brightest scientists, researchers, innovators, and engineers in the world, whether they are American or foreign-born, will always be in demand and will always drive economic growth and job creation. U.S. employers, be they small businesses or large multinationals, must be able to recruit and retain highly skilled foreign-born professionals – particularly after they graduate from a U.S. university – as an important complement to domestic talent sources.

While other policies, such as improvements to STEM education programs and greater investments in job training, will also help strengthen the technology workforce, immigration reform will most immediately help close the skills gap that exists today. We urge Congress to take action and allow for an immigration system that responds to our needs as a nation.
References

11. CNN, “H-1B visa applications decline for first time in 5 years,” April 17, 2017