Written Testimony of Brad Smith

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My name is Brad Smith, and I am the General Counsel and Executive Vice President for Legal and Corporate Affairs at Microsoft Corporation. Thank you for the opportunity to participate in this hearing and to provide the perspective of a major technology and private sector employer on an issue of critical importance to our country.

The bipartisan introduction of the Border Security, Economic Opportunity, and Immigration Modernization Act of 2013 represents the most significant opportunity for comprehensive immigration reform in the last 30 years. The bill's sponsors have shown a superb bipartisan spirit by working together to strike a careful balance on a range of complex and difficult issues. The bill addresses problems that have remained unsolved for over a decade. Its passage would modernize the nation's approach to immigration policy, including border security, the undocumented, families, and both low skilled and high skilled workers. If passed, the bill would enable technology companies, large and small, to keep jobs in America and create more jobs here in the future. Through an extraordinary effort, the bill's sponsors have launched an immigration reform process whose successful outcome is critical to our nation's ability to remain economically and technologically competitive, and to remain the beacon of hope and opportunity this country has always been.

One of the crucial issues on which Congress must strike the right balance is improving the programs for America's access to high skilled foreign talent. The current system does not meet the needs of today's economy, and it must be reformed to enable ongoing innovation and economic growth. Like most American businesses, Microsoft has seen the enormous contributions that highly educated foreign workers bring to our company and our economy. Now more than ever, as our economy continues its recovery, we need effective high skilled immigration reform that brings the best talent in the world to America and to enables these individuals to work together with the innovators, entrepreneurs and talented individuals in our domestic workforce. We need reform that encourages businesses to innovate and grow here, while providing reasonable protections for American workers. This bill provides a strong framework for just this type of reform. It makes important and badly needed changes regarding green cards and H-1B visas for high skilled workers and it provides powerful new enforcement authority to ensure that unscrupulous companies cannot abuse the system. It also implements strong measures to protect American workers. As with any legislation, there are parts of the bill that may benefit from some clarifications and refinement. But this bill contains tremendously important changes that will benefit employers, workers, families, and the nation.

As important as high skilled immigration reform is to our economic prosperity, however, it is only part of the solution. To us, unlocking the full potential of our nation's economic capabilities also requires investments to provide current and future generations of Americans with the skills needed to succeed in an increasingly competitive world. We cannot afford to ignore the need to equip our current workforce with new skills, nor can we allow this country to fall behind in providing our children with a strong education that equips them for the jobs of the future. Just as we need a healthy immigration system, we also need to make targeted investments in STEM education to improve opportunities for current and future American workers. We are pleased that the proposed legislation adopts this two-pronged solution by coupling high skilled immigration reform with additional funding for STEM education, and we hope that this STEM focus and funding will be strengthened further as Congress considers this bill.

THE U.S. ECONOMY IS PRODUCING MORE HIGH SKILLED JOBS THAN THERE ARE QUALIFIED PEOPLE TO FILL THEM.

When I testified before the Judiciary Subcommittee on Immigration, Refugees, and Border Security in July 2011, our country was struggling to emerge from the Great Recession. The nation's unemployment rate was above 9 percent, and many were deeply concerned by the prospect of a double-dip recession. Twenty-one months later, while many economic indicators have improved, we are still waiting for the emergence of a full, sustained economic recovery. The national unemployment rate, now at 7.6 percent, still reflects an estimated 11.7 million unemployed workers in our country. Educational attainment continues to be a crucial differentiator. The unemployment rate for those without a high school diploma is 11.1 percent; for high school graduates, it is 7.6 percent. But for those with a bachelor's degree, the unemployment rate is only 3.8 percent, and for computer and mathematical occupations, it is only 3.2 percent. In many parts of the country, the latter unemployment rate is even lower. According to The Boston Consulting Group, the unemployment rate for computer science-related jobs in Washington state was only 1 percent over the last half of 2012.

This disparity illustrates a simple but sobering reality: those with the skills in highest demand were largely spared from the effects of the Great Recession, while those without the modern skill sets demanded by an innovation economy bore a disproportionate share of the burden from the downturn. And even as the economy slowly recovers, this disparity in opportunity persists.

- **The Importance of High Skilled Workers to the Economy**

This skills gap unquestionably is impeding our country's economic prosperity. Even while we have close to 12 million unemployed in our workforce, the Department of Labor reports that there were 3.9 million unfilled job openings at the end of February 2013, up from 3.6 million in the previous month. This is the highest number of unfilled job openings since May 2008, and it is in large part a reflection of the difficulty that employers are having in finding workers with the modern skill sets needed to fill the types of jobs being created by today's knowledge economy. As a result, it is taking employers longer than

ever to fill the open positions they are creating across the country. Put simply, our economy is producing more high skilled jobs than there are high skilled workers to fill them.

On a local level, we see this happening quite clearly in Washington state, where there are currently 25,000 unfilled jobs as a direct result of the gap in skills—a deficit that is projected to double to 50,000 unfilled jobs by 2017. And these aren't the only jobs whose potential is being lost. Economists agree that the additional economic activity created when a high skilled, high wage job is filled results in more job creation—the so-called "multiplier effect." Factoring in the most conservative estimates for the multiplier effect, a recent report by The Boston Consulting Group and the Washington Roundtable concluded that leaving these 50,000 jobs unfilled will also forego the opportunity to create enough additional jobs to drive down our state's unemployment rate by as much as 1.8 percentage points.

- **The Challenge of Finding Enough High Skilled Workers**

Like other employers with high skilled job openings around the country, Microsoft has been confronting the challenge of finding workers for our open jobs in a labor market where the necessary skills are in short supply. Our recruiters are dedicated to finding the talent we need wherever they can find it, using every effective recruiting strategy possible. This includes conducting substantial recruiting activities at universities across the nation and extensive targeted recruitment of experienced workers in the industry, including veterans and candidates with diverse backgrounds. Despite these efforts, we currently have more than 6,300 open positions in the U.S. Over 3,300 of these are for jobs in core research, engineering and development. This represents a 29 percent increase in the number of open research, engineering and development positions compared to the same time last year. Combined with IBM, Intel, Oracle and Qualcomm, these five companies alone have over 10,000 high tech job openings in the United States. In New York City, there are postings for over 20,000 open jobs among a group of just 25 employers that includes companies like JPMorgan Chase, AT&T, IBM, PriceWaterhouseCoopers LLP, Bloomberg, Deloitte and Accenture. This problem isn't improving—it's getting worse.

This problem is not limited to the computing sector. Increasingly, every company is at least in part a software company. Auto manufacturers create advanced software for cars, appliance manufacturers build "smart" appliances, and health care companies create software systems to manage medical data. To take one example where expertise and understanding of computing will be vital, we can look at Big Data, the new frontier in information capture and analysis. Big Data advancements will impact many business sectors far beyond the technology industry, including education, energy, transportation, and healthcare. As the use and insights from data pervade new areas, companies across our economy will need people to create and use these Big Data systems. Yet we are not equipping our population to meet that need. A recent McKinsey Report predicts a potential shortfall of 1.5 million "data-savvy" managers and analysts by 2018.

The unmet demand for high skilled talent, particularly in STEM and computer science, is also a key issue for start-ups, who rely deeply on the expertise of high skilled workers for driving the key innovations upon which they are built. And start-up activity is not limited to Silicon Valley or major urban centers. We are seeing an emerging technology scene in the Great Plains area—which many are now calling the

"Silicon Prairie"—one of just two regions in the nation that increased its share of the country's angel investment deals from 2011 to 2012. The region is now home to start-ups like MindMixer, Hudl, AdFreeq, AgLocal, Stackify, and Invenquery, to name just a few. Eastern Nebraska has seen a three-fold increase in start-up activity, with more than $300 million in venture capital available in the state. Des Moines, Iowa is home to Dwolla, an online and mobile money transfer company that represents another success story. Startup City Des Moines, a tech incubator, has received applications from 160 start-ups in the past two years. Yet even with this level of activity, the New York Times reports that the Silicon Prairie is being held back by a limited supply of software engineers. Sensible high skilled immigration reform, combined with a focus on improving STEM education, will benefit all parts of our country.

Unless we take new steps to invest in education and reform immigration, America's job growth and technology leadership will be at risk. The current persistent talent shortage is simply not a sustainable situation for U.S. employers. The risk here is two-fold. First, the inability to fill open positions requiring high skilled workers means there is less capacity for research, innovation and technology development. Second, if this skills deficit persists, companies will be forced to move unfilled positions to other countries, where they can recruit more individuals with the skills needed to fill them.

WE MUST INCREASE TARGETED INVESTMENTS IN EDUCATION TO BETTER PREPARE AMERICANS FOR THE JOB OPPORTUNITIES OF TOMORROW.

The high skilled jobs in today's modern economy increasingly are requiring an education in STEM fields. These types of occupations drive our nation's innovation and competitiveness, and they are experiencing some of the fastest growth rates in new job openings and compensation, particularly in the highest demand STEM fields like computer science. The shortage of available labor is a reflection of the lack of capacity within our education system, resulting from a fundamental underinvestment in education in high demand STEM fields.

This deficit begins early in the educational system. Our K-12 system is not producing enough high school graduates with sufficient preparation for success in college, particularly in critically important STEM fields of study. In 2011, only 45 percent of U.S. high school graduates were prepared for college-level math, and only 30 percent were prepared for college-level science. Our students are also scoring significantly lower in math and science literacy compared to their counterparts in other developed countries, and this gap is growing as other countries continue to improve their scores at a rapid pace. These are clear warning signs that need to be addressed.

AP Exams in 2012
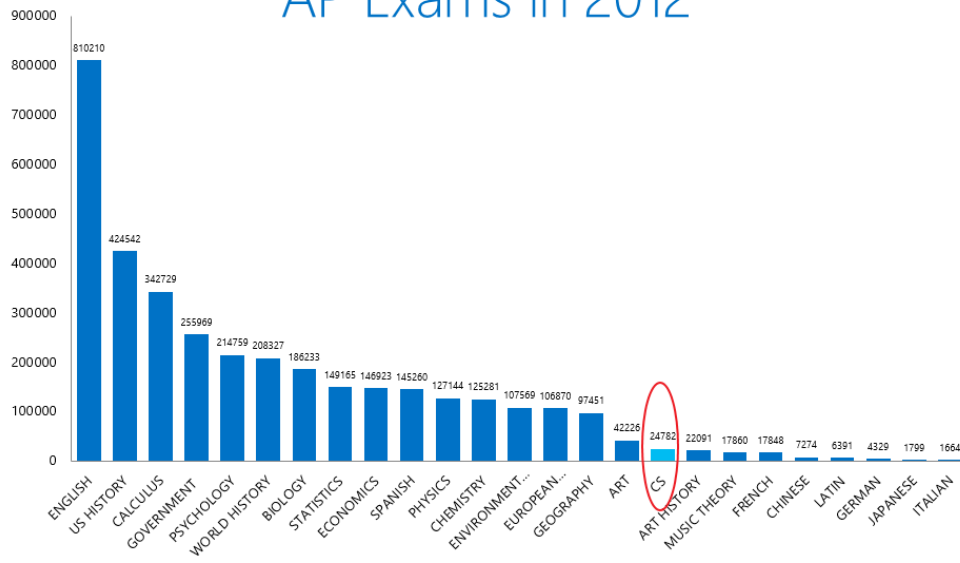
The lack of education in computer science is an example of an area of particularly acute concern. Of the more than 42,000 high schools in the U.S., just 2,255 were even certified to teach the Advanced Placement (AP) computer science course in the current academic year. Counter to the growing importance of computer science in the job market, AP computer science accounted for less than 1 percent of all AP tests taken last year—down from 1.6 percent of all tests in 2000. What's more, 41 states currently do not consider computer science courses even to be part of the "core" curriculum distribution requirements students can pursue to graduate from high school. This means there are not appropriate incentives in place for students to take computer science education courses, even when they are offered. The presence and profile of computer science in K-12 education is actually fading from the national landscape at a time when it is needed most.

Our Computer Science Shortage
Supply is not meeting demand
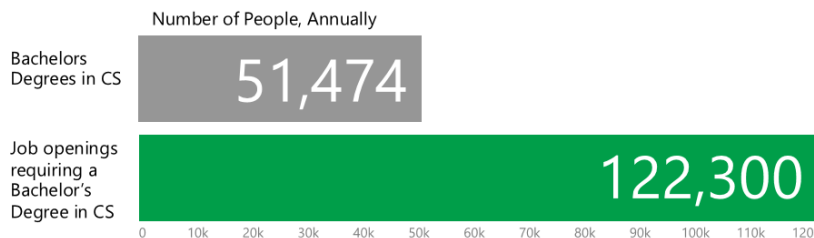
The pipeline of talent is restricted within the higher education system as well. The Bureau of Labor Statistics has projected approximately 122,000 new job openings each year in computing occupations requiring at least a bachelor's degree through the end of this decade. Yet nationally, our universities are only producing approximately 51,000 bachelor's degrees in computer science each year. And a

significant number of the degrees awarded each year in high demand STEM majors like computer science are earned by foreign students studying in the U.S. This means that not only is the pool of students in this field too small by over half, but there are also too few American students in that undersized pool.

Consider the following: In 2009, U.S. universities produced 58,058 computer science degrees at the bachelor's, master's, and doctoral levels combined. Of those, 11,010—nearly 1 out of every 5—were earned by international students. Among those earning advanced degrees, the proportion of international students at U.S. universities is even more pronounced. At the master's degree level, international students earned 27 percent of all degrees in science and engineering. In computer science, that number rose to 46 percent; in engineering, it was 43 percent. At the doctoral level, international students earned more than 33 percent of all science and engineering degrees. They comprised 57 percent of doctorates in engineering and 54 percent of doctorates in computer science.

Our colleges and universities are not meeting the demand for educating and graduating students with degrees in key STEM majors. Our own region in the Seattle metropolitan area is home to one of the top computer science departments in the world at the University of Washington. Yet that department currently turns away over two-thirds of students at the university who complete the prerequisites and apply for this major because of a lack of capacity. This is just one example of a leading university that still can't meet the demand of the number of students who want to major in computer science. We need to do better.

This is a high skilled labor shortage that cannot be solved in just a year. We need a sustained, two part strategy that leverages high skilled immigration reform to address the labor market's current skills deficit at the same time that we invest in educating, training and preparing the U.S. workforce for these new opportunities. It is critical that at the very outset of work to pass comprehensive immigration reform, Congress carefully strike the proper balance in the high skilled provisions of the bill to reach the country's innovation and job growth potential.

HIGH SKILLED IMMIGRATION REFORM IN THE BORDER SECURITY, ECONOMIC OPPORTUNITY, AND IMMIGRATION MODERNIZATION ACT OF 2013: KEY STEPS FORWARD

- **Modernizing the Supply of High Skilled Green Cards and Matching Green Card Supply to the Needs of the Innovation Economy**

When I testified before the Judiciary Subcommittee on Immigration, Refugees, and Border Security in 2011, the Subcommittee explored in depth the problems associated with the shortage of employment-based green cards and a quota system for them that had not been updated since 1990, nearly 25 years ago. I believe that this bill goes a long way toward addressing those problems. There are several components of the green card provisions of the bill that are exceptionally important for technology companies and for the ability of the country overall to remain competitive in global markets. In short,

this bill modernizes the supply of high skilled green cards, and matches that supply to the needs of our innovation economy.

I would like to express our deep appreciation to Senators Hatch, Klobuchar, Rubio, and Coons for the leadership they have shown in developing and introducing—with 21 other cosponsors—the Immigration Innovation Act of 2013, or the "I-Squared Act." Last fall they sat down, rolled up their sleeves, and drafted the blueprint for optimal high skilled immigration reforms, providing in the process a model of bipartisanship from the very outset of this Congress. We believe that it provided a very important contribution to the comprehensive immigration reform effort, and many important features from that bill are echoed in this one.

Perhaps most importantly on the topic of green cards, the legislation before this Committee today recognizes the value to the U.S. economy of graduates from U.S. universities with an advanced STEM degree. By exempting them from the overall green card quota, the bill provides a clear path to a green card for these highly sought-after individuals. Under current law, many face a wait of more than 10 years to obtain a green card, and they may decide that a career in the United States simply isn't worth that kind of instability. As a result, we risk losing these experts to other countries, where they will compete against us. This bill goes a long way toward keeping their talents in the United States and helping to grow our economy.

The bill also recognizes the importance of other critical kinds of employees by exempting them from the quota as well. This includes outstanding researchers, individuals of extraordinary ability, and multinational executives and managers. By ensuring that these individuals do not need to be concerned about quota backlogs, they can instead focus on making new discoveries, creating new product lines and keeping their companies competitive.

The bill also takes the sound approach of exempting family members of employment-based immigrants from the quota. This helps to keep the focus of the employment-based green card numbers where it belongs—on the workers themselves. This also helps to treat all high skilled workers the same, whether they have a family or not, bringing a key element of fairness to the system.

On the subject of fairness, the bill also restores parity to the employment-based immigration system by eliminating the "per country" limits on green cards. This change, modeled after a bill authored by Senator Lee in 2011, levels the playing field and is long overdue.

I also applaud the provision of the bill that recaptures employment-based green cards that were previously authorized but never used. According to data provided by the Department of State to the U.S. Citizenship and Immigration Services Ombudsman and published in the Ombudsman's 2010 Annual Report, there were approximately 325,000 employment-based immigrant visa numbers that Congress authorized in previous years but that remain unused. There is a substantial backlog that has developed for people who have approved labor certification applications and immigrant petitions, and who could be given a green card if only there was a green card number available. At Microsoft, where we sponsor our employees for permanent residence at the outset of the employment relationship, we have large

numbers of employees directly affected by this backlog, and it is a major disruption to their lives and their ability to feel that the U.S. is truly their home. It makes great sense to use these employment-based green card numbers, which were already allocated but never used, to bring these immigrants permanently into the American community.

- **Enabling Entrepreneurs and Startups**

New companies are one of the most important drivers of job creation, innovation and economic growth, and this bill contains smart provisions to facilitate the cultivation of new ventures and technological endeavors. The bill provides a new category of nonimmigrant visas for individuals who can secure investment funding for a startup or who have an existing U.S. business that is creating jobs and generating significant revenue. The bill would also create an entirely new "EB-6" immigrant visa category that would provide up to 10,000 green card numbers each year for entrepreneurs with business ventures that are creating jobs for our economy and that have secured ongoing investment funding or are generating substantial revenues. We fully support this kind of forward-thinking immigration policy, which will help attract the brightest young entrepreneurs from around the world to bring their ideas and grow their businesses in the U.S., rather than to other countries, and enhance our competitive capability.

- **Improving the Supply of H-1B Visas**

Aside from an important but limited exemption that Congress added in 2004 for those who have earned an advanced degree from a U.S. university, we work still, in 2013, under an H-1B cap that was set in 1990—a time when only 15 percent of American households even had a personal computer. It is a visa supply that was set for a 1990 economy, and we have long outgrown it. Just two weeks ago, we saw a repeat of what is becoming common during periods of relative economic strength. The H-1B cap for the coming fiscal year was exceeded in just the first week of availability, with about 40,000 more petitions submitted than there are numbers available.
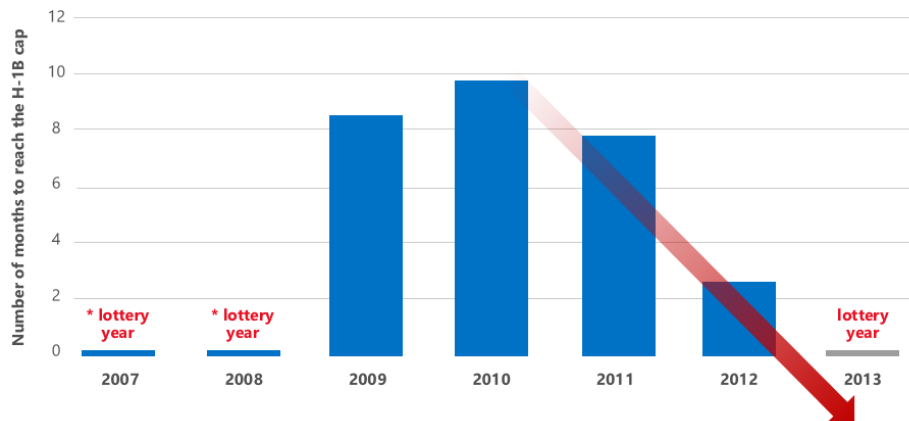
Running out of H-1B visas this quickly has significant consequences for the economy. This year, employers are faced with a scenario in which one-third of the H-1B petitions that they submitted will be rejected in the H-1B lottery. These are 40,000 positions that will remain unfilled despite the fact that qualified candidates have been identified and job offers have been extended after a careful, intensive recruiting process in a very competitive market for talent. This is incredibly disruptive to the business planning and operations of U.S. employers.

At Microsoft, we entered this year's H-1B cap season knowing that we could not file H-B petitions for 250 candidates we had identified for job offers simply because the cap would be exhausted in the first week, a full two months before their graduation dates in June. Among the H-1B petitions we were able to file this year, we will likely have more than 200 additional candidates to whom job offers were extended, but who will not be selected in the H-1B lottery. When this happens, we don't simply rescind these offers of employment. We begin the process of identifying alternative options for employing these talented individuals at one of our subsidiaries abroad. The inability to employ these individuals in the U.S. means the loss of work that was intended to be performed in the U.S., and along with it, the output and productivity our business groups were planning, not to mention the potential tax revenues and economic activity associated with the salaries for those jobs.

These immigration challenges also have very real consequences for the talent we are trying to attract. Some potential hires are unwilling to jump over all of the hurdles presented by the H-1B cap and will simply walk away from the offer of employment in the U.S., opting to instead pursue alternative options in their home countries. A few specific examples from our own experience will help illustrate the tangible impact to these individuals. Last year, we were unable to file an H-1B petition for one of our candidates before the H-1B cap was exhausted due to his graduation date. The inability to start working for us in the U.S. was incredibly distressing to him, not only because of the delay in staring a job he was excited for, but also because of an uncertain political situation in his home country. We have filed an H-1B petition for him under this year's H-1B cap, a year and a half after his original offer of employment was extended. In the meantime, he continues to wait on the sidelines for the approval of the petition. This year, we extended offers of employment to two candidates who happen to be engaged to one another. Again, due to the timing of graduation dates, only one of them could have an H-1B petition filed before the cap was reached. This couple is now confronted with the reality of being separated in order for one to pursue employment with Microsoft in the U.S. while the other seeks options abroad. Without reform to address these unnecessary impediments in the H-1B program, these kinds of challenges will deter future high skilled immigrants from investing their skills in our economy.

An additional consequence is the loss of potential jobs that would have been created in the economy by filling these open positions. This month, the Economist reported on yet another in a line of studies concluding that bringing high skilled workers to the U.S. creates additional jobs. According to that study, for every job created in the high tech sector, an additional 4.3 jobs emerge over time in the local economy. If there are 40,000 jobs that will go unfilled because of the insufficiency of the H-1B cap, there will be an additional 172,000 potential new jobs that will go unrealized. Combined, this represents nearly 10 percent of the 2.2 million net jobs that were created in all of 2012. The lesson

could not be clearer: failing to match the supply of H-1B visas to the demands of today's economy weakens, in real numbers, the economy's ability to create jobs.

Without a doubt, high skilled foreign workers are essential leaders of and contributors to the innovation and entrepreneurial activity of our nation. The number of talented workers from abroad who have founded or co-founded successful, job creating companies, and who have been awarded U.S. patents for their inventions is well documented. At Microsoft, these kinds of high impact technical and leadership contributions by foreign-born workers are evident throughout our organization. In my testimony from 2011, I shared about Alex Kipman, an immigrant who led the development of Kinect, one of our most successful consumer products and important technical accomplishments. Another example of a high impact contributor at Microsoft is Dr. Desney Tan, one of our Principal Researchers. Dr. Tan manages the Computational User Experiences Group at our headquarters and holds an affiliate faculty appointment in the Department of Computer Science and Engineering at the University of Washington. At Microsoft, Dr. Tan researches the adaptation of advanced technologies for applications in human-computer interaction, mobile computing and health care. He has received numerous honors recognizing his substantial expertise and significant contributions to the field, including MIT Technology Review's "2007 Young Innovators Under 35" award for his work on brain-computer interfaces and Forbes' "Revolutionaries: Radical Thinkers and their World-Changing Ideas" for his work on Whole Body Computing. Dr. Tan began his career at Microsoft with an H-1B visa, and we subsequently sponsored him in the employment-based green card process. Talent of Dr. Tan's caliber illustrates why our country's access to the best and brightest from around the world is so essential.

The Base Cap and the STEM Exemption

The bill's sponsors wisely included an increase to the base H-1B cap to 110,000 per year, with a new exemption for an additional 25,000 U.S. advanced STEM degree holders. Even these increases could be quickly exhausted in a strong economy, but it is a healthy increase and a very positive step. We also commend the focus on addressing our serious skills gap in STEM fields.

While advanced degree workers are particularly critical, those with Bachelor's degrees in highly technical fields for which there are acute shortages are also the type of crucial high skilled talent that can drive forward our country's economy and capacity for innovation. H-1B visas are reserved for "specialty occupation" jobs that require the theoretical and practical application of a body of highly specialized knowledge, requiring completion of a specific course of higher education—typically at least a bachelor's degree. These jobs—whether for biophysicists, geneticists, artificial intelligence researchers or software engineers—require highly educated and skilled workers at all career stages and levels of experience.

The Market Adjustment Mechanism

The bill incorporates a crucial concept that better connects the supply of visas with the changing needs of our economy. The supply of H-1B visas should not be structured around a fixed numerical limit set through congressional negotiation every 10 or 20 years. It should be allowed to fluctuate—either up or

down—in response to the conditions actually taking place in the American economy, and the labor demand that fluctuates as a result. The bill wisely recognizes this, and includes a market adjustment mechanism that allows the base cap to fluctuate between 110,000 and 180,000 per year in response to market conditions, never increasing by more than 10,000 in a given year. This is an approach we endorse.

We do have some concerns that the bill's market adjustment mechanism—which has a "High Skilled Jobs Demand Index" that factors in the level of new H-1B filings from the previous year with changes in the unemployment rate—might not adequately respond to the need for H-1B visas in the labor market. Because companies stop filing new H-1B petitions as soon as the quota is reached, the Index may undervalue demand. In addition, the Index looks at changes in the unemployment rate without considering the actual rate itself, and could therefore restrict upward adjustments in the cap even when the unemployment rate is extremely low. Because of these concerns, we believe that the approach taken in the I-Squared Act is potentially simpler and more effective. It would measure demand based on how quickly the cap is reached, and it would inject additional numbers into the system for that year.

- **Improving Protection for American Workers and Other Critical Provisions**

We support strong enforcement of the rules associated with the H-1B program against those that violate them. Without question, this bill has introduced a number of tough new enforcement measures and tightened restrictions, and we fundamentally agree that the H-1B program should be regulated and enforced in a manner that protects American workers, prevents abuse and holds violators accountable. But it is equally important to ensure that companies that utilize the H-1B program appropriately, recruit and employ thousands of American workers and are key job creators in our economy continue to be able to utilize the H-1B program to effectively meet the need for high skilled workers. Enforcement and restrictions will be most effective if they are focused on the users whose workforces are most dependent on H-1B visas or that show a disregard for the rules.

We believe we share common ground with the bill's sponsors, who have taken steps to differentiate "dependent" and "super-dependent" users from non-dependent companies. We support the bill's new restrictions on these types of employers—such as the phased-in restrictions for employers whose workforces are made up by more than fifty percent of workers in either H or L status. We also agree with the manner in which the bill differentiates employers who sponsor foreign workers for permanent residence from those who do not by treating employees in the green card process like permanent residents for purposes of dependency calculations. This is wise policy.

Changes to the Prevailing Wage System

There are new restrictions that have been placed on all employers as well. The prevailing wage system has been completely restructured and now subjects all employers to significantly higher wage requirements. Microsoft is generally supportive of this approach, in part, because it helps address the common misperception that H-1B workers are used as a cheap source of labor. For the overwhelming majority of users of the H-1B system, this criticism simply isn't true, and our H-1B workers provide a

direct rebuttal of this misperception. At our headquarters, our software development engineers who have recently graduated college, for example, have a starting salary that is typically more than 36 percent above the "Level 1" wage in the Department of Labor's current wage system. In fact, their salaries are even slightly above the Department of Labor's "Level 3" wage for the occupation.

We sometimes hear that the problem with the H-1B program is that employers are cheap, and that instead of providing additional visas for high skilled workers, the government should require employers to increase wages to attract the U.S. workers they are supposedly avoiding. Let me be plain on this point. If employers really wanted only to hire cheaper workers, it would not a difficult thing to do. Our industry would not be here asking Congress to modernize the H-1B program and align it to the needs of today's economy. Instead companies would be moving additional jobs outside the United States and putting them in countries where labor costs are significantly lower. Our industry has come to Washington specifically because it wants to create more jobs in this country, both by securing meaningful access to global talent and by investing more to help American students and workers gain the skills needed for the jobs that will fuel the innovation economy.

And, in fact, compensation in this area has consistently been increasing due to the short supply of talent. The highest growth rates in wages have occurred for positions requiring the highest skill levels. Since 1999, wages for computer research scientists have increased 54 percent and wages for software engineers have risen 52 percent, substantially ahead of inflation. Technology companies have taken dramatic steps to retain and attract talent: in late 2010, Google issued a 10 percent across the board pay raise, and Microsoft responded with a similar company-wide increase the following spring. Analysts predict this trend of robust wage growth will continue. A report by Robert Half International predicts a 5 percent average increase in U.S. tech starting salaries for 2013, outpacing inflation and the economy's overall wage rate. Growth in compensation for expertise in the newest technologies is occurring even more quickly. Analysts predict salaries for mobile application developers to rise 9 percent and wages for wireless network engineers and data modelers to rise almost 8 percent. Overall, studies have shown that H-1B workers are among the most highly paid and productive workers in the U.S. economy.

Enhancement of Enforcement Authority

The bill before this Committee would also give the government substantial new enforcement powers. The Department of Labor would be able to initiate investigations based on complaints received two years after the alleged violation, up from a one-year limit now. Investigations could be based on complaints from anonymous tipsters. No longer would there be a need for "reasonable cause to believe" a violation occurred before undertaking an investigation. DOL would have unrestricted authority to begin self-initiated investigations, and there would be no time limit at all on how many years after an alleged violation one of these non-complaint driven investigations could begin. Standards for violations would be broadened, interagency information-sharing would be enhanced and penalties would increase. The list goes on. The agencies would have more power than ever before to identify and penalize program violations. This is an important change to the law, and will help ensure that

companies that don't follow the rules will be found and that rule violations and program abuses will be stopped.

Improvements to Worker Mobility

We likewise support the proposed provision that would enhance worker mobility for those in H-1B status. One criticism of the H-1B program we often hear is that H-1B workers are "indentured servants." To the contrary, the H-1B program already includes a very specific portability provision that allows H-1B workers to move very freely to new employers, and many of the H-1B workers we hire at Microsoft come to us from other companies. H-1B workers can begin working for a new company as soon as a petition from the new employer has been filed. The only limitation of this portability provision is the requirement to demonstrate continuity of employment. The H-1B worker must show that he or she is still employed by the current employer while applying to transition to a new company. H-1B workers who end their employment relationship with their first employer before subsequently finding a new job, therefore, are not afforded the same type of mobility. This bill would further improve the mobility of H-1B workers by providing a 60-day grace period to look for a new job after initial H-1B employment ends, for any reason, and to transition to the new employer without having to leave the United States.

The bill would also alleviate another and much more significant problem affecting worker mobility—the impact of such transitions on an individual's green card process. Today, if a worker being sponsored for an employment-based green card changes employers, the worker risks having to restart some or all of the stages of the lengthy green card process. The idea of losing one's place in line is a daunting prospect, given the extraordinary length of the green card backlog. One solution to this problem is to correct the supply of green cards and eliminate the backlog, thereby mitigating the impact of the worker's move to a new employer. When the backlog goes away, this problem goes away, and the bill takes significant steps in that direction.

Spousal Employment Authorization

We also welcome the provision in the bill that would allow the spouses of H-1B workers to be employed. Today they cannot, throughout what can be a many-year period while awaiting a green card. This is a significant problem for employees and their families. The spouses of H-1B workers tend to be well educated, well qualified, able to contribute productively to the economy, and armed with their own professional ambitions and goals. Prohibiting their employment causes financial, personal, and other hardships for employees, and it causes recruitment and retention problems for employers. The provision in this bill allows the spouse to work only if he or she is a national of a country that provides reciprocal treatment to the spouses of American workers in that country. This additional requirement, though its motivation is understandable, seems slightly self-defeating. A key goal of this provision is to enhance American competitiveness in an extremely tight global competition for talent. We support entirely the notion that the State Department should aggressively seek agreements in other nations to provide the same treatment to Americans, a task that should be facilitated greatly with this provision in place. But it would be more in the economic self-interest of the United States to remove the reciprocal treatment limitation.

- **Areas for Refinement of Certain New Restrictions and Requirements**

Given the number of new restrictions and requirements included in the proposed legislation, it is important to ensure that the provisions are crafted with an appropriate scope and breadth that enables compliant, job-creating U.S. employers to continue to use the H-1B program. Two important areas would benefit from further clarification and refinement to ensure these goals are achieved. These relate to the recruitment requirements and nondisplacement provisions included in this bill.

Recruitment

For the first time, the bill includes a recruitment requirement even for employers with a small overall population of H-1B workers. For each H-1B petition—including petitions seeking to extend the H-1B status of existing employees—every employer would need to attest that it has advertised the job on a new website created by the Secretary of Labor, and has offered the job to any U.S. worker who applies and is equally or better qualified for the job than the H-1B worker. Employers that are H-1B dependent would have to make an additional attestation that they have taken good faith steps to recruit in the U.S. using procedures that meet industry-wide standards and are offering compensation that is at least as great as that required to be offered to the H-1B nonimmigrant.

As a threshold matter, it is important to understand that we are not dealing with a choice between hiring U.S. workers and hiring foreign workers. The talent shortage is so acute that we need *both* to address today's workforce needs. And, to be clear, Microsoft endorses the idea of requiring that H-1B employers make good faith efforts to recruit U.S. workers in the occupations for which H-1Bs are sought, using industry-wide standards and offering the same level of compensation. At Microsoft, we do this already, not just because it is the right thing to do, but also because it is a necessity to meet our business needs. Microsoft engages in massive recruitment efforts for talent—including U.S. workers— on a daily basis. We spend millions of dollars each year in our recruitment efforts, with a staff of over 300 recruiters whose key assignment is to find qualified candidates for our job openings. We hire people from hundreds of U.S. universities, and we conduct significant targeted recruitment efforts at 100 of those schools with whom we have cultivated deep connections and relationships over the years to ensure the opportunities available at Microsoft are widely known. We also dedicate significant resources to the recruitment of experienced candidates within the industry, and we leverage a multitude of connection points, including professional networks and associations, a robust employee referral program, dozens of job search websites, social media and our own careers website. We even have a blog at www.microsoftjobsblog.com that is devoted to generating as much visibility as possible for our opportunities. We don't just wait for potential candidates to find us. We do everything we can to find them.

When we make our hiring decisions, we evaluate our candidates thoughtfully to ensure that the candidate with the best qualifications receives an employment offer. We are confident in how we hire and the opportunities that we provide to American workers. Our main concern is with having those hiring decisions second-guessed years after they are made. This introduces a deep level of uncertainty, particularly with regard to how regulators would make appropriate assessments of employers' hiring

decisions. The imposition of new requirements on non-dependent employers—whose workforces are already comprised primarily of U.S. workers—to keep voluminous records on each applicant and every hiring decision would also add a significant level of administrative overhead and expense without improving protections for U.S. workers or helping drive innovation and business growth. This level of regulation would certainly create substantial new resource demands for the government as well, and in the context of compliant, non-dependent employers, may not be the best use of limited enforcement resources. Ultimately, employers are in the best position to assess applicants and their qualifications in relation to their workforce needs, and it is already in our clear business interest to hire the most qualified candidates. We believe that this provision must recognize that reality.

Nondisplacement

The bill also includes a requirement that even companies with very small percentages of H-1B workers not have displaced a U.S. worker within the 90 days prior to an H-1B petition, and that they will not do so within 90 days following a petition. Again, we fully endorse the principle that H-1B visas should not be used to displace U.S. workers, but we should be certain to focus the restriction on the practice we all want to prohibit—replacing an American worker with an H-1B worker. But as drafted, this provision could disrupt a number of situations that Congress would consider to be both legitimate and important business options—such as changes in the number of U.S. workers due to acquisition or divestiture activity—none of which would involve actual displacement of U.S. workers. Particularly for companies like Microsoft with a well-documented record of job creation and hiring U.S. workers, these provisions should be carefully crafted to preserve the critical flexibility that employers need to make workforce decisions that enable important strategic business decisions.

The bill recognizes these types of situations and includes an exemption for situations where the number of U.S. workers in the professional ranks has not decreased in the prior year. This is a sensible exemption, but it may not be broad enough to accommodate for common situations such as divestitures, acquisitions, and other noncontroversial occurrences in the corporate ecosystem. The framework of the exemption—based on job zones—also creates challenges in calculating the qualifying metrics for the exemption. There are simple refinements to address this concern. One option would be to require an attestation of nondisplacement that more precisely provides that the employer is not filing an H-1B petition for the intent or purpose of displacing a specific U.S. worker. An alternative approach would be to apply the nondisplacement provisions to employers whose layoffs exceeded their net hiring of U.S. workers. We recognize that compromises are necessary for a bill of this scale, but we are optimistic that this provision can be refined while still ensuring strong protections against the displacement of U.S. workers.

SIGNIFICANT, LONG TERM INVESTMENTS IN THE U.S. STEM PIPELINE ARE CRITICAL

As I expressed at the outset of this testimony, there is an urgent demand for workers trained in the STEM fields, throughout the nation and in a wide range of industries. Yet there simply are not enough people with the necessary skills to meet this burgeoning demand. Even more troubling, too few American students are achieving the levels of education required to secure jobs in innovation-based industries, especially students who have historically been underserved and underrepresented. This trend is compounding our economic challenges and limiting our nation's full economic potential.

High skilled immigration alone is not the solution to the skills shortage. We need to make deeper investments in the U.S. STEM education pipeline to ensure that Americans have access to these crucial opportunities in our economy. While I'm pleased to see a STEM fund included in this initial bill, a more robust national education fund would go further in growing the pipeline of qualified workers and keeping these high skilled, high wage jobs in the U.S. There is a real opportunity before us to address the threats to employment and economic competitiveness our country faces at its source, and we need to ensure the level of our investments in STEM are sufficient to make a long-term difference.

Experts have reached consensus around the key needs in the STEM pipeline. In K-12 education, we need to recruit and train more qualified teachers and help more students prepare adequately for college and careers. There also needs to be increased access to computer science in our nation's high schools to ensure that all students have the opportunity to gain this foundational knowledge and explore promising and fulfilling careers in computing. Within the higher education system, we need to address challenges in college completion rates and the ability of higher education to produce more graduates in critical STEM degrees, with a particular focus on computer science. Targeting efforts to address each of these areas in the pipeline is essential if we are to ensure that all students have the opportunity to achieve their dreams and industry has the opportunity to innovate and thrive.

Here, we can draw from the principles outlined in the I-Squared Act—which has the support of the National Governors Association and The Council of Chief State School Officers—with its model of a larger national STEM education investment that is urgently needed. That bill contains the "Promoting American Ingenuity Account" funded by fees from companies that pay for the additional green cards and H-1B visas. The combined fees would generate as much as $500 million dollars each year for the U.S. STEM pipeline, a substantial increase from the fund proposed in this legislation. The I-Squared Act calls for the money to be state-directed and used for teacher training, post-secondary STEM programs, computer science and community college STEM training programs. This level of investment is desperately needed by U.S. students, educators and employers.

Ultimately we cannot expect to build the economy of the future without empowering our people to grasp the opportunities that the future promises to provide. With greater investment in STEM education, we know we can better prepare the next generation for the waves of technological innovation that are on the horizon in every field. If we do, our future is a bright one, not only in information technology, but in all kinds of scientific and technological innovation. And more of our people will share in, and contribute to, the resulting economic strength and prosperity for our nation.

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I want to reiterate that the introduction of the bipartisan Border Security, Economic Opportunity, and Immigration Modernization Act of 2013 is a major step forward in the collective effort for comprehensive immigration reform. The bill provides sensible solutions not just for high skilled immigration, but for our nation's immigration policy as a whole. The Congress has a rare opportunity to position our country for leadership in technology and innovation, foster sustained economic growth and enhance our global competitiveness. We should not let this moment pass.