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"The Economic Imperative for Immigration Reform – High-Skilled Immigration as a Driver of Economic Growth"

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Chairman Schumer, Ranking Member Cornyn, and distinguished members of the subcommittee, I'm grateful for the opportunity to join you at this hearing. My name is Brad Smith, and I am the General Counsel and Senior Vice President for Legal and Corporate Affairs at Microsoft Corporation. We at Microsoft appreciate your continued focus on the need to reform this country's immigration laws. Reform is long overdue, and postponing it only works against the national interest. Microsoft especially appreciates the recognition that a new policy approach to attracting the world's talent into our workforce is critical if we are to both keep and grow jobs in this country.

The path to this new approach should be based on some key points.

- In today's economy, jobs often follow the talent supply, not the reverse.

- This means that countries with the strongest talent supply will have an advantage in attracting and keeping jobs; it will be those countries whose economies thrive.

- Building this talent supply depends, foremost, on education.

- Particularly where shortages of core expertise exist, though, local talent needs should be supplemented in part by attracting experts from other countries.

- If done right, attracting the talents of the best and brightest from other countries can help, rather than hurt, prospects for American workers, because in an innovation economy, jobs often beget jobs.

The New World Economy: Jobs Follow Talent

If we're going to devise policy reforms that will spur economic growth in this country, we need to start with a clear understanding of the talent supply and the emerging patterns of job flows in today's world. The world economy has changed in a way that often causes jobs to move to where the talent is. This reflects a fundamental economic shift that in turn reflects the technological changes of the information era.

Since the early 1700s, a predominant economic fact of life was that people moved to where jobs were located. This gave rise to a steady global trend of population movement from rural to urban areas and large-scale migrations across the Atlantic and to some degree across the Pacific. While economic migrations have by no means disappeared, the information age has enabled people to work from anywhere to a much greater extent than ever before. Now jobs often move more readily in search of the best talent. Wage competition, though still relevant, is decreasingly a factor. We are in fact seeing wages equalizing across the globe in the information technology sector much faster than people would have predicted a decade ago. For example, information technology salaries in India are expected to rise 12 percent this year. In China, the median pay for software engineers rose by an average of 13.8 percent each

year between 2006 and 2010, with a total increase over that period of 67 percent. In Brazil, the median pay for software engineers rose by an average of 9.6 percent each year between 2006 and 2010, with a total increase of 43.7 percent.

These trends make it clear that we should not base our thinking on innovation and high-skilled immigration policy on the misperception that, if jobs go to another country, it is a simple matter of wage competition. When jobs flow elsewhere, it increasingly reflects the fact that there is an overall shortage of certain talent. While traditional labor market forces would normally draw the talent to the places where labor was needed, technology has made a wide range of high-skilled jobs far more portable, so that jobs can move quickly and globally to where the talent is located.

In short, in some fields such as computer science and engineering, jobs can move more quickly across borders than people. This is a profound technological and economic change that governments are beginning to recognize. Increasingly, it highlights the central challenge we face: how do we develop the best possible talent pool in the United States? The country with the best talent within its borders will have the strongest economy.

The Talent Supply and the "Dual Unemployment Rate" Paradox

Any economic policy adjustment, including high-skilled immigration policy, must be made with a careful eye on the country's serious unemployment rate. Too often, the debate on high-skilled immigration reform has bogged down based on the view that the unemployment problem is solely a jobs problem. Increasingly, however, the unemployment problem in the United States is also a skills problem.

We see this in the markedly different unemployment rates for different groups of Americans. For example, the Bureau of Labor Statistics last month estimated that the unemployment rate for individuals with only a high school diploma is 10 percent. In contrast, unemployment for individuals with a college degree or more is only 4.4 percent.

This education-based difference in unemployment rates is mirrored in the IT job environment. In April, for example, the unemployment rate for computer and mathematical operations hovered around 4 percent, under half the overall unemployment rate. What is clear is that our country is operating with a "dual" unemployment rate, one for those with a strong postsecondary education, and another starkly different one for those without it.

Evolving job skills requirements will only deepen this divide. In a recent study released, the Georgetown University Center on Education and the Workforce estimated that, by 2018, the large majority of new jobs will require more education and greater skills than was the case even a few years ago. Between 1973 and 2008, the share of jobs in the U.S. economy that required postsecondary education rose from 28 percent to 59 percent. This share is projected to rise even further, to 63 percent, by 2018. Postsecondary education, as the study's authors put it, has become the "gatekeeper to the middle class and upper class."

When one considers that full employment is traditionally defined as unemployment at a rate of 5 percent, this explains the paradox we are seeing in the economy. We're currently experiencing both persistently high unemployment overall and increasing wage inflation in the IT sector at the same time. In reality we currently have two economies and two separate categories of demand: one for those with a postsecondary education and another for those without. We will not bring unemployment down to the extent desired until we skill up the population to attract the jobs that otherwise will be located elsewhere.

"Skilling" up the American Workforce

Our first priority should be to elevate and enhance the skill set of American citizens so they can compete for the higher-skill jobs in today's economy. We need to bring more Americans up to at least the postsecondary level that makes such a major difference in employability. We must also do more to ensure that our students are focused in the fields that our economy needs.

Unfortunately, this is an area in which the country is falling dangerously short. The Georgetown study projecting jobs and education requirements shows that by 2018, the United States will need 22 million new college degrees, but that the country is on course to fall short of that number by at least 3 million. Moreover, we are falling short in many of the fields we need the most. Computer-related bachelor's degrees awarded in the United States – about 60,000 in 2004 – had dropped to 38,000 by 2008. Nor are these shortfalls limited to the bachelor's degree level. Last year only about 1,600 computer science Ph.Ds. graduated from U.S. universities. Of these, some 60 percent were foreign nationals. This leaves only a very small pool of talent for the private sector, government, and academia to recruit from in this critical area.

Not surprisingly, companies that rely heavily on higher-skilled labor are among those most acutely affected by higher-skilled labor shortages. This is also why Microsoft and many other technology-based companies increasingly are making investments to help strengthen education in the United States.

For example, this spring, Microsoft came together with a number of other co-founders to launch Washington STEM, a new privately funded program to improve teaching and learning in science, technology, engineering and math. Mirroring the national education gap described above, Washington State ranks fourth in the nation in technology-based corporations, yet is near the bottom in student participation in science and engineering graduate programs. America must do a better job of preparing our students for the opportunities that await them. Washington STEM aims to tackle this challenge starting when students are in elementary or middle school. Our $6 million commitment will help this program make focused investments in programs that will improve student learning in these crucial fields in our home state. We hope as well that it will serve as a shining example of what can happen when businesses, non-profit groups, and educators join forces to improve educational opportunities to the students of our nation.

Similarly, last month Microsoft pledged $25 million over the next five years to a new public-private Washington Opportunity Scholarship, an innovative approach to provide funding to help stabilize the higher education system and increase the number of students earning bachelor's degrees. Together with a similar pledge by our partner The Boeing Co., and with matching state contributions, this program will raise $100 million for scholarships for low- and middle-income students. It is expected to blossom into a billion-dollar endowment for financial aid by the end of this decade

And just last week, Microsoft Education announced a new $15 million investment in research and development for immersive learning technologies, including game based instruction and the creation of a lifelong learning digital archive. Over the next three years, Microsoft is committing to train over 150,000 educators and leaders and to provide access to professional learning communities and training to every teacher in the United States through the new Partners in Learning Network.

In addition to these investments in improved educational strategies, Microsoft has also invested heavily in programs to provide technology training and resources to help people find employment in a knowledge-based economy. Against the backdrop of the deep national recession that put millions of Americans out of work, Microsoft launched Elevate America. This program included a voucher program in participating states across the country to provide no-cost technology skills training for over 900,000 workers; a veterans initiative, to help U.S. veterans and their spouses transition from military to civilian employment; community initiative partnerships with non-profit organizations that provide technology access, training, and resources for persons seeking employment; and no-cost and low-cost online resources to help people gain the basic- to intermediate-level computer skills that so many of America's jobs require.

Given the magnitude of the skills gap in the United States, it is apparent that a sustained commitment and private-public partnerships will be needed in order to fundamentally improve the country's competitiveness. Microsoft is but one of many companies that increasingly are stepping forward with commitments to help the country move forward.

Attracting Skilled Workers to Meet Unfilled Talent Needs and Remain Competitive

Improving education strategies is a first-tier need but a longer-term process. Skilling up the population also involves focused and targeted efforts to attract relatively small numbers of the best people from elsewhere in the world, so we can persuade them to bring their special skills and put them to work for the U.S. economy. As we consider the reforms needed to our high-skilled immigration policies, we need to recognize that bringing more smart people to work in this country does not necessarily take jobs they occupy away from American workers. A strategic high-skilled immigration policy can create more new jobs in this country for American workers to take up.

Microsoft's experience helps illustrate this phenomenon. Microsoft has been a major job creator in this country. When Microsoft moved to Washington State in 1979, it was a $3 million

company employing 30 people. Today it is a global company operating in over 100 countries, with more than 90,000 employees worldwide and a U.S. workforce of 54,000 employees.

Although Microsoft has directly created U.S. jobs at a significant rate, this is not where the economic effect ends. A 2010 study by the University of Washington's Economic Policy Research Center illustrates the powerful downstream economic effect of high technology jobs. This study found that the $9.16 billion Microsoft injected into the state's economy in 2008, through total compensation to its Washington employees and local operating expenditures, in turn created job opportunities for other state businesses through a "multiplier effect" amounting to 267,611 jobs in that year. Through this multiplier effect, every job at Microsoft supported 5.81 jobs elsewhere in the state economy.

Microsoft's economic contributions have been possible by combining American brainpower with the talents of some of the brightest professionals from around the world. Our U.S. workforce is made up overwhelmingly of U.S. workers, but as part of our talent recipe, we have also relied on our ability to attract an essential complement of the best minds from other countries.

Microsoft and other technology companies have a powerful ongoing capacity to create jobs in America. This capacity is fragile, however, because of our persistent and ongoing need for talented high skilled workers in order to compete. Microsoft is innovating in incredibly competitive markets, and we struggle, just as our peers do, to fill all of the research and engineering positions needed to stay at the forefront of that competition. In what we call our "core tech" positions—those involving research and engineering—we have had consistent growth in head count from 2007 through 2011, even during the down economy. And we have kept our focus on jobs in this country, with more job growth and hires in the United States than internationally in core tech positions, when measured in real numbers.

Because of shortages and intense competition, however, filling our talent needs remains a serious challenge. For example, in May, Microsoft had 4,551 unfilled job openings, of which 2,629 were for computer science positions. In 2011, it has taken us on average 65 days to fill openings for experienced candidates in core tech positions in the United States. Our continued ability to help fuel the American economy depends heavily on continued access to the best possible talent. This cannot be achieved, and certainly not in the near term, exclusively through educational improvements to "skill up" the American workforce. We need to be able to attract – and have adequate access through the immigration system to – skilled workers from abroad.

Keeping Room for the Best and Brightest

As Congress grapples with designing a new, smarter high-skilled immigration policy, we must not treat that policy exclusively as a means of filling shortages that cannot be fully filled by U.S. workers. A baseball team aiming to win the World Series will use the midseason trading period to recruit the top player available to fill a gap, whether he is from the United States or the Dominican Republic or Japan, and even if qualified American players are available. We must preserve our ability to do some of the same with intellectual talent. If American technology

companies are going to continue to lead the world, they need to remain free to attract the best in the world – that echelon of "impact talent" with a special capacity for innovation and for the U.S. job creation that follows.

Many of our top leaders at Microsoft prove this point. Qi Lu, the President of our Online Services Division, came to this country from China and earned a PhD at Carnegie Mellon. Dr. Lu holds 20 U.S. patents and was instrumental in the launch of our Bing search function initiative. Don Mattrick, the President of our Interactive Entertainment Business, came to the United States from Canada. He is responsible for the businesses that develop key entertainment experiences such as Xbox 360 and Kinect. Earlier in his career he was named one of America's "Top Ten Influentials" in Fortune Magazine's "40 Under 40" list and was appointed to the World Economic Forum's Forum of Young Global Leaders.

Another important example of this "impact talent" phenomenon is Alex Kipman. Alex came to this country from Brazil, where he had become enthralled with the idea of software development as a child of five, when he started playing video games. He studied in the U.S. at the Rochester Institute of Technology. From the time he graduated and joined Microsoft in 2001, he has been the primary inventor for 60 patents filings; 14 have been granted in this year alone. Alex is one of the fathers of Kinect, and is the director of the team responsible for "incubating" the project: he and his team took the vision and drove it through proof and execution. Kinect, if you are not yet familiar with it, is the device that enables a person to control through voices and gestures the software and games for Microsoft's Xbox. It is also incredibly fun.

This is a good example of the multidimensional ways that innovation and innovators – often innovators from abroad – help generate jobs and growth and opportunity in the American economy. Kinect holds a Guinness World Record as the fastest-selling consumer electronics device, selling an average of over 133,000 units each day during its first 60 days on the market after it launched last November. It has therefore been a key revenue driver, generating more than $1.2 billion in revenues in its short life so far. Kinect is also an important job creator at Microsoft in its current application through Xbox Hardware and MS Game Studios, and will continue to be as well through extended future adaptation in our core businesses, as the next level of Natural User Interface.

There is also an important downstream economic effect for the creation of a product like Kinect: packaging; transportation; buyers and stock clerks and salespersons in the stores that sell it; the list goes on. This is the real-life case study of the multiplier effect that the University of Washington researchers demonstrated.

Beyond the multiplier effect, there are also the avenues of innovation, not yet even imagined, that this revolutionary technology will open for others. As just one example of its game-changing potential, Kinect is being used by surgeons for no-hands operation of computers displaying CT images during surgery. This frees them of the need to leave the sterile surgical field and then re-scrub after using their hands to manipulate and consult the computer image.

Kinect acts as a job creator in the U.S. economy as companies and developers capitalize on the technology, whether through games or novel applications such as health care, robotics, and more. On this point, Alex has said it best: "This is a new era, and it's going to require a ton of pioneering, a ton of innovation, and a ton of incubation. That's not going to happen all within Microsoft."

Finally – and this is perhaps the most important point for a smarter high-skilled immigration policy – we as a country should be doing everything we can to make sure that ideas like Kinect bloom here, in the United States. This means making sure that people like Alex, who sits near the top of Fast Company magazine's list of the Hundred Most Creative People in Business for 2011, are attracted to study in this country and bring their talent to bear in the American workplace, with a ready path to permanent residence in the United States.

Enabling High-Skilled Immigration to Drive Economic Growth

For a country to remain competitive in a changing environment, its laws need to evolve to address changing economic realities. It is striking that despite the fundamental changes in the global economy, there has not been a major structural change in U.S. immigration law since 1990 – more than 21 years ago. Entire industries now exist that were only in their infancy in 1990, creating hundreds of thousands of new jobs. Other countries now compete vigorously for high skilled workers. Many of these countries had few if any jobs to offer in key sectors two decades ago, yet today they provide an attractive alternative to a career in the United States. We are hopeful that today's hearing propels a legislative effort to reform and modernize our immigration laws in a meaningful way that will benefit the country, encourage investment, retain and attract high-skilled talent, and create jobs.

There are clear policy steps Congress can take that will enable the country to do a better job of attracting and retaining foreign talent and putting it to work in a manner that will best serve the economy as a whole. We recommend that Congress should:

- ***Ensure that the supply of employment-based green cards matches the demands of a knowledge economy*.** The supply of employment-based green cards has not been brought up to date since 1990. That supply remains at 140,000 permanent visas per year, and the limit includes not just the workers we seek to attract, but also their family members, effectively shrinking the supply of green cards for professionals to less than half that number. Today's green card limits mean that it can take more than a decade to obtain permanent residence for highly valued professionals. Per-country limits that are overlaid on the overall cap result in particularly pronounced delays for those born in China or India, two of the most important recruiting pools for experts in the STEM fields. From these two countries, even those with advanced degrees must sit through a backlog lasting over four years. When it takes America's innovation employers many years to secure permanent residence for key foreign experts, it is more and more difficult to persuade the best and brightest to join the U.S. workforce in the first place. Retaining these employees through

the years of the green card backlog is a rising challenge. Prospects for permanent residence even affect the decisions of the world's top students about where to study. Especially as professional, economic, and lifestyle prospects improve in other countries around the globe, incentives are intensifying for the best and brightest to take highly sought-after skills to competitor countries, often even after they have gained those skills through education in this country's universities.

- ***Modernize student visa policies to attract the world's top talent to this country's universities and then, after they graduate, to this country's economy, rather than economies abroad.*** Today, in order to get a student visa, a person must demonstrate to a U.S. consular officer, and then again to an immigration inspector on arrival in the country, that he or she does *not* intend to stay here permanently. This is often backward. Our student visa policies should specifically welcome the prospect that the world's very top students should want to stay and work here when they graduate. We should facilitate their doing so, by recognizing that students may permissibly come with "dual intent" to study in this country and then, if the right job is available, remain to contribute their skills to the U.S. workforce. We should also extend the period that they can work here for post-graduation training. We should streamline the path to permanent residence for those who have gained the education and expertise we need. For many students with selected educational accomplishments, this would eliminate the necessity of relying on professional visas such as the H-1B or the L-1 as a many-year bridge to a green card.

- ***Keep the temporary professional visa programs healthy*****.** There will always be a need to use the nonimmigrant visa programs to get critical recruits on board quickly, no matter how effectively the green card process and the student visa program are reformed. Many prized recruits will have studied in other countries' universities, or have a particular expertise that can only come from experience in another market, or will be bringing critical knowledge that could only be gained through experience at a U.S. employer's operations overseas. Many important assignments in this country are truly temporary. Yet the visa programs that serve these important purposes have come under unnecessarily severe fire through overly broad concerns that the visas are being used to the detriment of American workers. To be sure, there are employers who violate program rules, including critical U.S. worker protections. Microsoft fully supports reforms to better enforce these protections and to ensure program integrity. Yet Congress must take care that any reforms to the H-1B, L-1, and other temporary professional visa programs ensure that these visas remain freely available to the compliant employers that can drive economic recovery, so that those employers can respond nimbly to new ideas and market opportunities.

Conclusion

Attracting in reasonably small numbers the best and brightest talent from around the world has been a key part of the country's economic growth ever since the large waves of immigration ended in the early part of the 20th century. We've seen this time and time again in key economic sectors. It was vital to the country's ability to win World War II. It was equally vital

to our ability to win the Space Race in the two decades that followed and spur American leadership in the aerospace, information technology, and other sectors. Given the new global mobility of jobs, the ability to add talent to our population is as important now as it has ever been.

We as Americans have been the best in the world at incorporating intellectual talent into our national fabric, for business purposes, academic purposes, and scientific purposes. We have done it across party lines, we have done it across regions, and we have done it across disciplines. It is one of the things that we do best, and we should continue this proud American tradition. Just as it took congressional and federal leadership in prior times to make sure the country could be successful in this area, the country needs leadership from Congress and the Administration to take the types of steps that will revitalize economic and employment growth. We look forward to working with you toward achieving this critical goal.

Thank you.