



Brawn from brains

Talent,
policy and
the future
of American
competitiveness

A Deloitte series on
making America stronger

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Executive summary

THE American workforce has reached an inflection point. Record-high levels of unemployment continue to plague the U.S. economy. Traditional mainstay industries are contracting, while our competitive advantage erodes under pressures from new global markets. And in the past five years, the United States has fallen from first to seventh place in the World Economic Forum's Global Competitiveness Report.

Despite all of these warning signs, our country lacks the cross-cutting policies needed to develop the most valued American commodity of all: good jobs.

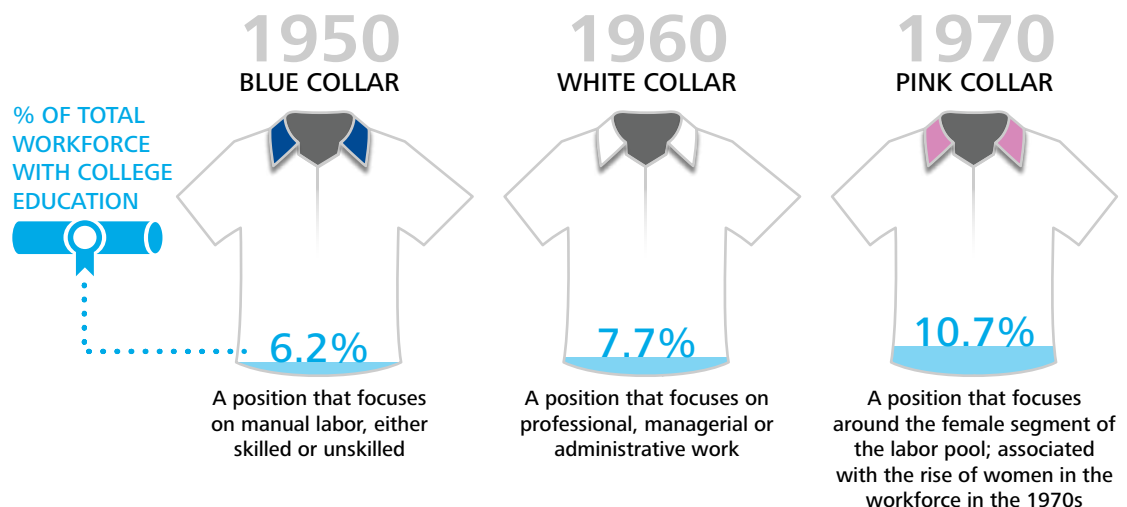
The reasons are clear. Today, there is a significant and growing mismatch between the country's demand for talent and its current supply. The type of talent demanded today—and needed tomorrow—is increasingly either *outdated* or *out of stock*.

On the demand side of the curve, the need for high-end skills is accelerating rapidly. For instance, the skills that graduates acquire after four years of college will soon have an expected shelf life of only five years, meaning that skills learned in school can become outdated long before the student loans are paid off. However, these new demands are not only applicable to college-educated professionals. Both white- and blue-collar (and even no-collar) workers must acquire and *maintain* high-tech skills to remain relevant in America's growing knowledge-based economy.¹ Today's knowledge economy is said to represent somewhere between 28 and 45 percent of the entire U.S. labor force.

Meanwhile, a new class of free agents is revolutionizing the traditional 9 to 5, pensioned, employee-for-life employment picture of the 20th century. The era of the 40-year job

The evolution of the collared economy

Americans are becoming increasingly educated as we move beyond traditional blue-vs.-white collar archetypes. In order to stay competitive in a shifting world, our talent pool will need to constantly retool their skill sets.



Source: Bureau of Labor Statistics, "Educational Attainment," <http://www.census.gov/hhes/socdemo/education/>.
Forrest Wickman, "Working Man's Blues," Slate (May 1, 2012), http://www.slate.com/articles/business/explainer/2012/05/blue_collar_white_collar_why_do_we_use_these_terms_.html.

is becoming an anachronism, with the average mid-20s employee changing jobs every 16 months.

On the supply side, America's talent pool is not poised to adapt to these new demands. Skill shortages plague many U.S. employers, creating obstacles for several strategic industries including manufacturing. America has lost 6 million manufacturing jobs in the last decade, yet today 600,000 jobs are unfilled because manufacturers can't find people with the right skills.

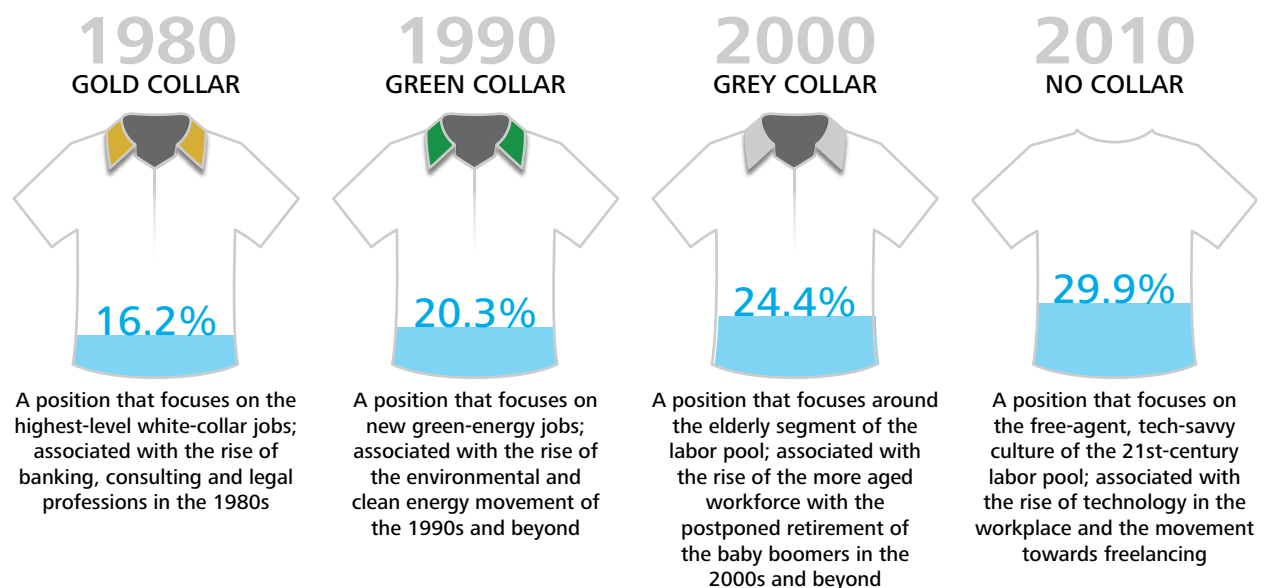
At the same time, our workforce is going grey. By 2018, almost 40 million working Americans will be 55 years or older, an increase of 5.8 percent in a decade.

As we face these internal challenges, our nation also must cope with greatly increased competition from abroad. Emerging markets such as Brazil, India and China are becoming key players in the global war for talent. More developed nations such as Germany, Australia and Canada are also stepping up their game, recruiting skilled talent through more competitive immigration policies. It was once fairly easy for U.S. firms to attract the world's best workers, but not anymore. As emerging

markets liberalize their economies, more of them can compete with the United States for high-value-added, skill-intensive jobs. Brain drain is *no longer* a one-way street.

If we are serious about developing talent as a competitive advantage, America must reconsider a wide variety of key public policies affecting its talent pool. Three policy issues—education, employment regulation and immigration—often are associated with talent development. Three other policy areas, however—foreign investment, unemployment insurance and intellectual property—are typically not thought of in terms of their impact on talent.

All of these policies, however, seriously affect our talent competitiveness. We examine each, and propose recommendations based around one simple question: Which options will accelerate talent development, and which will impede talent development? The resulting proposals could help the United States develop a comprehensive talent policy for the 21st century—one that promotes a more highly skilled, more adaptable and more competitive American workforce.



Introduction

THIS paper focuses on America's *talent competitiveness*: our ability to foster, develop and maintain generations of educated, skilled employees. Due to how world economies are evolving and changing, both blue- and white-collar employees will need increasingly sophisticated and technologically attuned skills for the foreseeable future. With U.S. unemployment still at record highs, there may be no more important issue.²

It has become commonplace to focus on talent as a driver of global competitiveness.³ Yet these discussions typically focus only on initiatives to strengthen our educational system. Education reform alone, however, as important as it may be, will not meet our future challenges. If we are serious about developing talent as a competitive advantage, we must reassess a whole host of public policies.

Such a focus would help us see many issues in a different light, and point toward new ways to overcome barriers created by existing policies. The public debate concerning many national issues might be different if our policies were explicitly aimed at boosting talent competitiveness.

Such a reassessment would have welcome side benefits. Many public policy debates have devolved into increasingly polarized, zero-sum games. Yet talent development by its very

nature creates a positive-sum game—we *all* benefit when our nation develops talent more broadly and more rapidly. Talent expands the sum of economic rewards. Instead of debating who will get what slice of the pie, we can work together to find more creative ways to boost employment and make the pie bigger.

In one sense, most public policy debates can be reframed around one simple question: Which options will accelerate talent development and boost highly productive employment—and which will impede talent development? This question could become the basis for a much more productive policy consensus that would help us compete more effectively. Such a reframing is not only desirable, but *essential* if we wish to succeed in an increasingly competitive global economy.⁴

The rewards could be significant, particularly if we recognize that talent is not solely the province of highly educated knowledge workers, but an opportunity that extends to *all* Americans, regardless of their present station in life. We all have unrealized potential to develop our talents and deliver more economic value to our communities. We would be a far more prosperous society if we could develop policies that help us realize our talent potential, both individually and collectively.

The talent imperative

What is talent? How is it changing?

TO see how public policies affect talent, we must begin by understanding how the shape of U.S. talent supply and demand has changed over the past several decades.

In just 10 years, we have seen emerging demands for new skills from entirely new industries, and, just as importantly, from a rapidly evolving global economy. Countries that only recently began developing in earnest now compete for the best talent, wherever it can be found.

The types of talent in high demand have changed as well. Professionals are more mobile, and many are willing and able to pursue multiple income streams. And the best talent is constantly learning. Today's graphic designer may be a software engineer in two years.

Unfortunately, the type of talent and the more flexible, dynamic disposition towards work demanded today—and tomorrow—often is in short supply in the United States. Our economy, known for its flexibility and resilience, must learn how to adapt.

Changing demand for talent

AMERICA'S demand for talent has changed in dramatic ways:

The shelf life of desirable skills is shrinking.

Once, a college degree provided enough basic training to last a career. Today, the skills that college graduates acquire have an expected shelf life of only five years, meaning that skills learned in school can become outdated long before the student loans are paid off.⁵

And this trend is not restricted to white-collar professions. The economy emerging after

the recent recession is being driven by “smart jobs,” even in traditional blue-collar settings.⁶ Consider, for instance, the new metering systems and sensors added to our utilities. In many modern homes, office buildings and entire city blocks, plumbers and electricians need a different kind of know-how than did their colleagues just a decade ago. Think also of the wind turbine companies whose welders need specialized degrees and the ability to read computer-aided design (CAD) blueprints.

Markets for specialized skills are on the rise.

The knowledge economy is creating a constant series of niche markets, ushering in an age of hyperspecialization.⁷

“There is absolutely no way anybody can be an expert in a substantial part of the total field,” explains Hans de Zwart, senior innovation advisor at Shell. “The modern-day Renaissance Man just can't exist.”⁸ The solution is not simply more education, but *ongoing* and more specifically tailored professional development for a new generation of talent.

Such specialized expertise can have significant economic advantages. The highly skilled can earn more, and companies can subdivide tasks among those who can execute each one perfectly. But highly specialized skills inevitably lose their relevance and niche abilities may be difficult to apply as opportunities evolve. As we specialize, it is important to retain transferable skills.

Individuals must also become more disposed to much greater professional flexibility. For the highly skilled generalists educated in the liberal arts from the nation's top universities, this means they need to be quick to adapt

to changing markets with specialized skill sets. This entails leveraging their BAs as a foundation while they continuously acquire new skills that emphasize social intelligence, computational thinking and a design mindset. (For a list of top requested skills in 2020, see appendix A.) Also important will be the ability to see across economic sector silos and connect the dots between how innovations in one industry can be applied to another.

The demand for high-end skills is accelerating.

The rapid evolution of technology has pushed the demand for high-end skills past the supply. In an Economist Intelligence Unit survey of more than 350 executives from multinational companies, more than 60 percent of respondents feared that “talent shortages are likely to affect their bottom line in the next five years”—with most shortages in the highly skilled talent pool.⁹ Highly skilled workers are projected to continue to earn higher wages and maintain their bargaining power, while less-skilled workers are more likely to be left out of the equation. This notion is further supported by our analysis of U.S. Department of Labor occupational data; only 8 percent of “bright outlook occupations” between 2010 and 2020 will require “little or no preparation” compared to the 28 percent of positions that will require “considerable to extensive preparation.”¹⁰ (For a full analysis, see chart on page 14.)

Demand for knowledge workers continues to grow.

Today’s economy depends on knowledge workers such as computer engineers and researchers with problem-solving skills and a willingness to update their knowledge constantly. Estimates suggest that anywhere from 28 percent to 45 percent of the U.S. labor force works in these types of jobs.¹¹ And knowledge industries are increasing in number—with up to 85 percent of new positions created since the turn of this century requiring specialized skill sets.¹²

Companies with the highest numbers of such workers tend to grow the fastest.¹³

As digital technologies continue to permeate our daily lives, the knowledge of individuals and teams will be worth much more than mere machinery. As more information jobs are created, the challenge will be to staff them efficiently and effectively. There is no longer a standard workforce manual. Top-down processes now intersect with bottom-up innovations. The new game is handling challenges and contingencies through improvisation and individualized solutions.

The demand for part-time and contract workers is skyrocketing.

In the wake of mass layoffs and buyouts, companies have begun hiring more part-time, freelance and contract workers to fill gaps. Part-time work is at an all-time high; 19.7 percent of all U.S. employees in 2010 were part time. In five years, 58 percent of firms expect to use more part-time, temporary or contract employees. According to the research firm Staffing Industry Analysts, such models are about 8 percent cheaper than staffing with permanent employees.¹⁴

Changing talent supply

OUR supply of talent has changed as well, in ways that provide strong reasons for concern.

Skill shortages persist.

While headlines are filled with news about high unemployment, a surprising number of industries and regions are finding it nearly impossible to obtain qualified workers.

Such talent shortages are increasingly common. While manufacturing unemployment is high, for instance, many American manufacturers cannot find enough employees with the skills and training needed to fill their jobs. About 67 percent of manufacturers report a shortage of available and qualified workers, and 56 percent anticipate that the shortage will grow worse in the next three to five years. Across the nation, 5 percent

The changing composition of the American worker

New demands placed on talent have changed the shape of the typical American worker. Our current talent supply is now in a race to keep up with these shifting demands.



of positions remain unfilled due to a lack of qualified candidates.¹⁵

The workforce is aging.

The United States will be forced to maintain high-end jobs with an older workforce that will be expected to work well into the retirement years. By 2018, almost 40 million working Americans will be 55 years or older, an increase of 5.8 percent in a decade. Workers aged 16 to 24, by contrast, are expected to make up only 12.7 percent of the labor force.¹⁶

According to a report by the Center for Strategic and International Studies, in an aging workforce, “employees may become less adaptable and mobile, innovation and entrepreneurship may decline, rates of savings and investment may fall, public-sector deficits may rise, and current account balances may turn negative. All of this threatens to impair economic performance.”¹⁷ The grey-collar generation must react appropriately to changes in the talent pool, especially as they work longer and longer. Continuing to refresh one’s skill set has become a lifelong undertaking.

Freelancing has become mainstream.

Worker supply will be more difficult to manage and monitor in a new economy that is much less rigid and less dependent on large companies. In fact, a “freelance economy” is emerging quite rapidly.¹⁸ Already, about a third of U.S. workers participate in this economy of entrepreneurs, freelancers, coffee-shop app developers, bloggers, consultants and designers, among others.

Many are finding incomes in completely new industries and fields. The app economy barely existed five years ago, spurred by the 2007 introduction of the iPhone. A recent report from economist Michael Mandell estimated that apps have created 470,000 jobs in the last five years.¹⁹ New fields are generating the need for talent with new skills.

Top talent—not firms—increasingly calls the shots.

A disparity between low-end and high-end talent is emerging, and those at the high end have gained more power over their employers.

Deloitte’s Shift Index, a report examining long-term economic trends, found that

the profitability of U.S. firms has steadily declined in the past 45 years, to just a quarter of what it was in 1965.²⁰ Labor productivity, by contrast, has increased 2.5 times since 1965.²¹ Surprisingly, the financial performance of American firms has declined even while skilled professionals see their total compensation rise. This suggests that top talent has far more bargaining power. Aware of their value and options, these individuals can extract more value even as companies experience deteriorating profitability.

Career “lattices” are replacing ladders.

The era of the 40-year job is becoming an anachronism; the average person spends only 4.4 years at one job and can expect to work at 11 companies in the span of a career.²² And this trend is accelerating. Patricia Sellers, a celebrated business columnist, says that the average mid-20s employee changes jobs every 16 months.²³ With these frequent professional shifts, the average “Millennial” will need to

remain resilient and open to change. They will need to know when to dial up and dial down their career. The new corporate ladder is not climbed rung by rung. Rather this ladder is being replaced by a lattice that requires talent to shift both laterally and vertically to get ahead.

Multiple careers are becoming common.

Talented employees change careers across industries and even countries in pursuit of better opportunities, particularly for organizations or startups where they can make an impact quickly. As personal savings and IRAs come to matter more than pensions, it also becomes easier to move from one company to another.

Clearly, America faces some major problems in acquiring and retaining the type of talent needed by the broader economy. And the competition from abroad for top talent is accelerating rapidly. This skills gap and America’s talent competitiveness both are affected by public policy, which we turn to next.

AMERICA’S GLOBAL TALENT COMPETITIVENESS

In survey after survey, talent tops the list of the most important factors determining national competitiveness. The World Economic Forum says that a “strong innovation capacity will be very difficult to achieve without a healthy, well-educated, and trained workforce.”²⁴ Leading manufacturers identify talent as all-important to competitiveness.²⁵

Many executives in a recent Deloitte survey underlined that growth in emerging markets has placed “demands on talent managers to get new people in new jobs at new locations” as soon as possible, intensifying global competition. And 41 percent of these executives believe talent is their organization’s most pressing concern.²⁶ (For a list of top organizational concerns, see appendix B.)

Emerging economies are hunting for talent every day.²⁷ The ease with which talent can move or work remotely is making this competition truly global. America still has some distinct advantages over its competitors, but also faces some daunting challenges, from lagging test scores and stagnating graduation rates to immigration policies that make it extraordinarily difficult for talented, foreign-born professionals to stay here.

The global competition for talent amplifies these trends in the following ways:

The new comparative advantage.

Talent can move with relative ease, and an increasing number of countries can compete with America in attracting, retaining and developing talent.

In September 2011, for instance, India’s top five IT companies were hiring 10,000 people from Europe.²⁸ In 2011, 600,000 foreign professionals stayed in China for more than six months. Moreover, in April 2012, China announced a new visa category created to attract foreign talent. A senior

official said the program is aimed at professionals that would “make the country more competitive in bringing foreign investment and talent into the country.”²⁹ China is also among several emerging markets making efforts to persuade their own expatriated nationals to return home.³⁰

Competition for talent is intensifying, and the returns on the right talent are increasing.

It was once fairly easy for U.S. firms to recruit the world’s best talent. Not anymore. The race for talent recruitment is heating up in every region, making it increasingly important to focus on domestic talent development. The fast-growing economies of Brazil, Russia, India and China accounted for 47.5 percent of new jobs created by foreign subsidiaries of U.S.-based companies from 1999 to 2009.³¹ These trends are sure to affect U.S. competitiveness rankings.

As emerging markets liberalize their economies, more of them can compete with the United States for skill-intensive jobs.³² A study by ManpowerGroup, a global workforce solutions provider, recently found that Chinese firms are “gaining prestige on the international stage and are enjoying a better reputation among workers.”³³ Increasingly, Chinese talent wants to work for Huawei instead of a major Western multinational.

China’s Neusoft Corporation, for example, began as a university venture at Shenyang’s Northeastern University and quickly expanded to become one of the leading global providers of IT solutions and services. Today, Neusoft employs more than 20,000 people and has major offices in more than 40 cities in China as well as subsidiaries in America, Asia, Europe and the Middle East.³⁴ The company’s CEO, Dr. Liu Jiren, says that “talent is the most important core competitiveness for companies” like Neusoft. And his and other Chinese companies are offering highly competitive compensation and benefit packages to foreigners to retain skilled talent.^{35,36}

U.S. multinational firms increasingly look abroad for talent.

Between 2004 and 2007, 83 percent of all research and development sites opened by global multinationals were in China or India.³⁷ R&D spending is rising dramatically in emerging markets to attract such investments. Chinese R&D spending already exceeds Japan’s and will soon eclipse that of the European Union.³⁸ This R&D is focused on the newest advances in science, medicine and technology, with overseas research centers positioning themselves against American R&D hubs such as Boston, Raleigh and the Bay Area.

A Harvard Business School survey of 10,000 alumni assessed this trend. More than 1,700 respondents were directly involved in location decisions for companies. Of the respondents, 31 percent said that better access to skilled labor was a reason for them to go abroad.³⁹ In fact, when companies make location decisions, 57 percent of them consider whether to relocate outside the United States. And among those 57 percent, after weighing competitive factors, the companies decided to stay in the United States only 16 percent of the time.⁴⁰

Furthermore, 71 percent of respondents to the same survey expect a decline in U.S. competitiveness in the coming years.⁴¹ With over 50 percent of PhDs in the science, technology, engineering, and mathematics (STEM) fields granted to foreign nationals, the hunt for highly skilled talent is going global. In today’s economy, top-tier positions are no longer limited to U.S. citizens.⁴² (For a rationale of company location choices, see appendix C.)

Talent is globally mobile.

A study by Roger Martin and Richard Florida found that creative jobs requiring highly skilled talent have grown from 10 percent of the economy to more than 30 percent. Filling these creative opportunities represents a new economic opportunity. But Martin warns that mobility and digital technology have put this contest up for grabs. Many businesses that operate in the new economy are mobile and do not require major industrial plants. They are “tied neither to customers nor to resources,” and can be located anywhere.⁴³

For decades, foreign nations blamed the United States for stealing their best and brightest. This brain gain for the United States resulted in almost immeasurable benefits. 52 percent of Silicon Valley’s companies were created by talented immigrants to America. Today, many are leaving thanks to immigration that have made it harder to stay here.⁴⁴

Examining major policy issues through the talent lens

AMERICA *can* continue to lead the world by training, retaining and attracting the best talent.⁴⁵ To adjust to a new economy, however, as Sara Horowitz argued in a special report in *The Atlantic*, the United States will need a *new* New Deal—a jobs plan that recognizes the paramount importance and changing nature of talent.⁴⁶

Our government needs to reframe its existing policies. Traditional attitudes toward immigration and foreign direct investment (FDI), for instance, often represent the *wrong* approach for the 21st century. The global contest for talent is likely to define which countries lead the world economy for years to come.

The global contest for talent is likely to define which countries lead the world economy for years to come.

Applying the talent lens to a number of public policies will require an emphasis on new perspectives from government, businesses, education and innovation communities. Talent

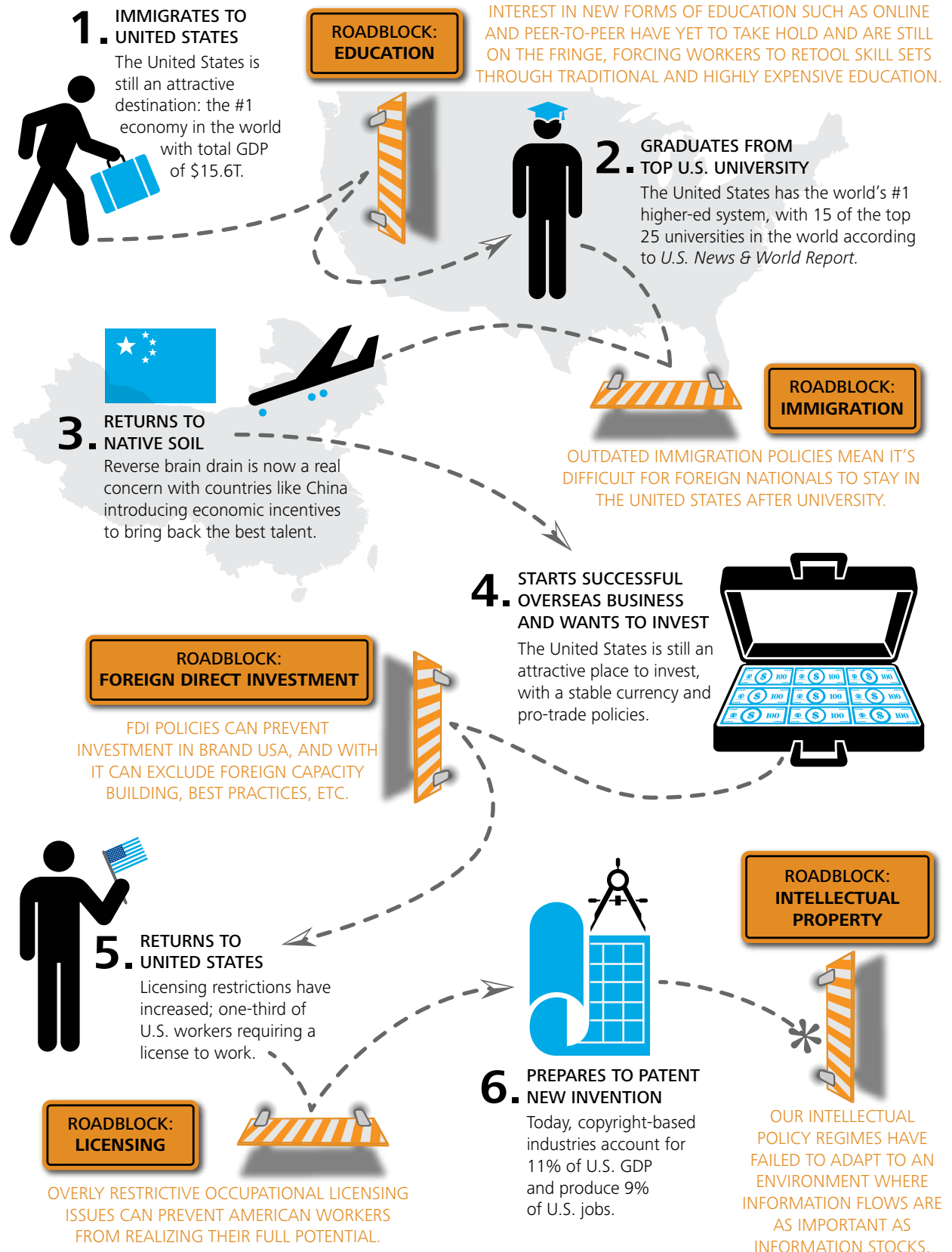
competitiveness represents a multidisciplinary policy challenge.

Three major policy issues—education, employment regulation and immigration—are commonly associated with talent development. Three additional policies, however—foreign investment, unemployment insurance and intellectual property—rarely are examined through the talent

lens. All of these policies dramatically affect U.S. talent competitiveness. We will examine each, and propose recommendations aimed at improving them.

The challenging journey to success: Barriers to talent development

Examining one's career path through the talent lens highlights several policy roadblocks to the competitiveness of the U.S. labor pool.



Beyond K-12 education

It's lifelong learning, stupid!

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, relearn, and unlearn.”

— Alvin Toffler

KNOWLEDGE and skills are the global currency of 21st-century economies. And according to Andreas Schleicher of the Organisation for Economic Co-operation and Development, “there is no central bank that prints this currency, you cannot inherit this currency and you cannot produce it through speculation, you can only develop it through sustained effort and investment by people and for people.”⁴⁷

A growing skills gap and persistently high unemployment may suggest that the U.S. education system is not producing enough of this “currency” to compete in a rapidly changing world economy. While policy discussions continue to focus on how the United States can improve the performance and quality of K-12

and higher education, they must *also* zero in on ways to meet *ever-changing* skills needs and encourage lifelong learning. The former can help ensure that students grow into productive workers, while the latter can help them evolve to meet future challenges.

Continuous development is particularly important given that the knowledge learned in school depreciates faster and faster in an evolving technological landscape. As the average lifespan of the professional skills required to execute a particular job continues to contract, learning outside of formal schooling will become increasingly important. The ability to rapidly retrain individuals will act as a differentiator between successful and unsuccessful societies.

The long view on education

STUDENTS entering college today may graduate into jobs that did not exist when they enrolled. To keep up with this pace of change, they will need to continue learning over their lifetime.

So what does a world in which new skills have to be learned every few years look like?

Just a few years ago, to obtain new skills, professionals would have to enroll in night school, leave their jobs to obtain graduate degrees or participate in an expensive online education program. Time and cost constraints made these options difficult at best.

Fortunately, new technologies and services make such learning much easier to acquire—and it's an opportunity for America. According to Anya Kamenetz, author of *DIY University*, today's free education content, readily provided by the likes of Massachusetts Institute of Technology (MIT), Stanford and others, is

The idea is to essentially crowdsource not just education, but teaching itself.

but “step one in a much longer endgame that transforms everything we know about higher education.”⁵⁰

The idea is to essentially crowdsource not just education, but teaching itself. Such peer-to-peer teaching starts with an understanding that often the best person to teach you something is someone who just mastered it. It isn't

difficult to imagine an engine similar to Facebook's driving a peer-to-peer learning network. One subscriber posts a skill he or she seeks to obtain, while another provides the tutoring in exchange for learning from others in the network. A computer could match people based on their desired topics quite easily.⁵¹

Organizations such as the School of Everything and Skillshare already capitalize on these trends. Sebastian Thrun, a Google Fellow and Stanford University professor, has launched an open-source university, Udacity,

ALIGNING BUSINESS NEEDS WITH HIGHER EDUCATION

Corporate enterprises and academic institutions can produce powerful results when they collaborate to deliver academic initiatives that are grounded in practical applications. Take, for example, the collaboration between Clemson University and BMW, and that between North Carolina State University and Red Hat.

The Clemson University International Center for Automotive Research in Greenville, South Carolina, forms a bridge between academic research and practical applications in the automotive industry. It connects university researchers with work performed by companies involved in the automotive industry so that all testing can be done in one place. BMW and the university worked together to develop the center's curriculum.

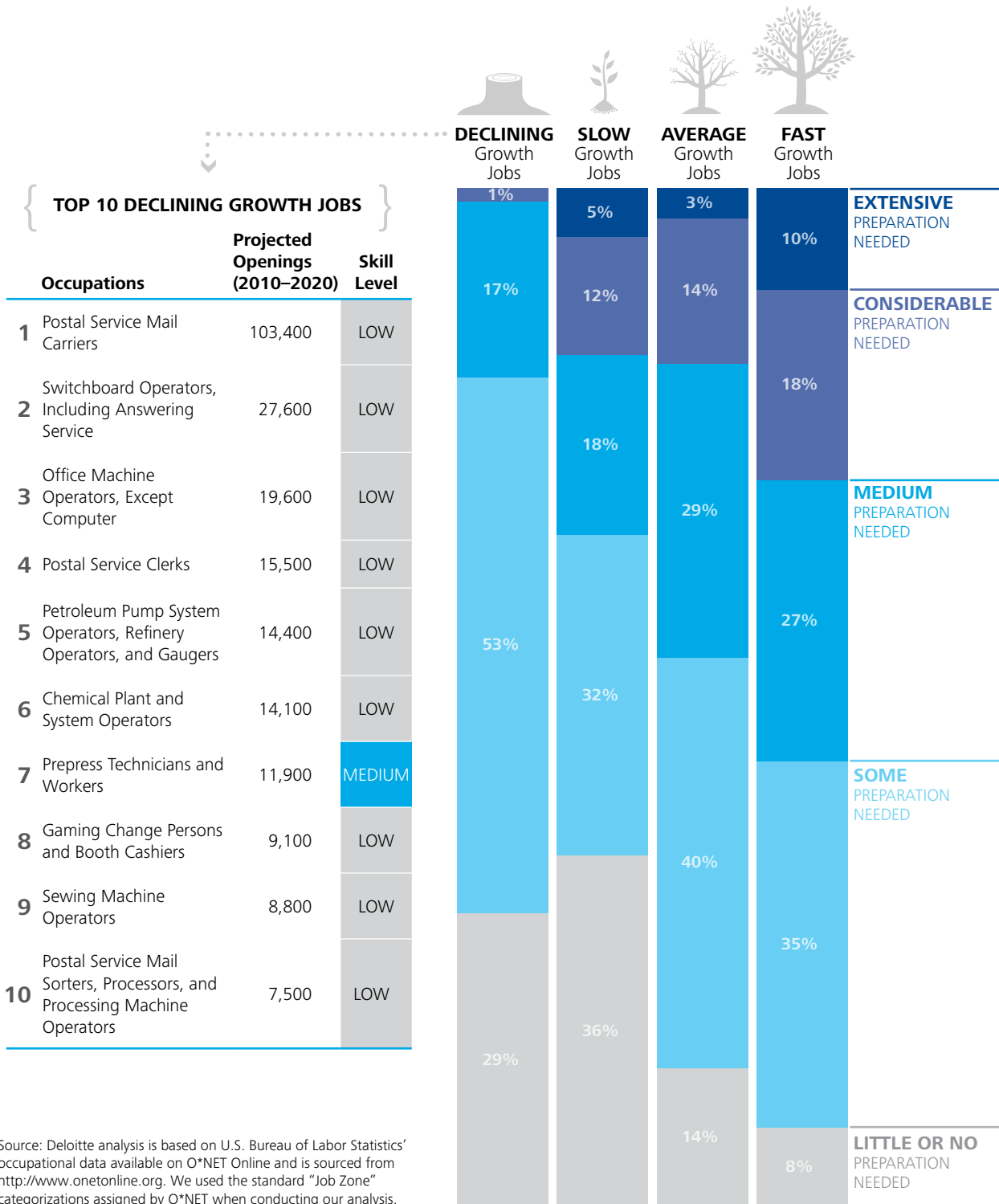
As a leading land-grant university, NC State is developing key links between the academy and industry.⁴⁸ The world's largest open-source software company, Red Hat, moved its headquarters to NC State. The two maintain a symbiotic relationship, sharing resources and creating “a robust ecosystem” between the company and the university.⁴⁹

Shifting four-year college programs toward knowledge-creation centers of this sort can benefit companies seeking fresh, highly skilled talent while encouraging healthy competition.

Skill levels required for jobs of the future

The jobs of the future will require more and more advanced skills. U.S. Bureau of Labor Statistics data shows that 28 percent of all fast-growth jobs (what they refer to as "Bright Outlook Occupations") will require some sort of high-level skill compared to only 1 percent of jobs in the declining growth category.

The advent of new technology is pushing many of the low skill level jobs out of the system; nine of the top ten jobs in the declining growth category require a low skill level. While these jobs are predicted to grow in number, their overall growth is slowing over time—a trend that will disproportionately affect America's low-skilled workers. They will need to continuously adapt and retool their skill sets to stay relevant.



Source: Deloitte analysis is based on U.S. Bureau of Labor Statistics' occupational data available on O*NET Online and is sourced from <http://www.onetonline.org>. We used the standard "Job Zone" categorizations assigned by O*NET when conducting our analysis.

which is quickly gaining traction. Besides interactive coursework, Udacity offers its pupils the career services once exclusive to brick-and-mortar institutions—with an option to pass enrolled students’ resumes to one of its 20 partner companies.⁵² Coupled with the free courses being made available by universities, such as the Stanford d.school’s “Virtual Crash Course in Design Thinking,” the future seems to offer an infinite potential for acquiring valuable skills.

Talent-boosting reforms

⊕ **Align education and career pathways.**

Current academic R&D is expensive and fails to produce enough innovation and return on investment. About \$53.5 billion in sponsored research funding to 181 universities in 2009 produced just \$2.3 billion in licensing revenue. Intensive networks between a university and allied companies—what Rosabeth Moss Kanter calls “knowledge-creation centers”—create direct links between new ideas and the market-ready enterprises that can deploy them.⁵³ They also increase collaboration, and produce more connected students and more useful innovation and R&D.

⊕ **Expand vocational education.**

K-12 reforms should focus on expanding technical and vocational training as an alternative pathway to highly specialized skills. New York City has embarked on an ambitious plan to implement new career and technical education (CTE) schools.⁵⁴ Arizona is also pursuing expanded vocational opportunities. A recent *Time* article highlighted Arizona’s success: “About 27 percent of the students in Arizona opt for the tech-ed path, and they are more likely to score higher on the state’s aptitude

tests, graduate from high school and go on to higher education than those who don’t.”⁵⁵

⊕ **Promote apprenticeships.**

A large part of the skills gap is due to weak training programs for high school graduates who don’t wish to pursue four-year college degrees. To aid such students, our educational policies could support more apprenticeships. In Germany, for example, students after ninth or tenth grade graduate with *Hauptschule* or *Hauptschulabschluss* diplomas. They can then pursue *Berufsfachschule*, a job-training program. Essentially, it is a three-year paid internship that includes on-the-job training and classroom instruction, designed to prepare German students for technical roles in the nation’s manufacturing industry.

Although the U.S. National Apprenticeship Act allows 850 occupations to certify graduates of apprenticeships, a small minority of occupations, mostly in construction, account for 80 percent of all apprentices.⁵⁶ Several of the fastest-growing professions, according to the U.S. Bureau of Labor Statistics, are apprenticeship-based professions including brickmasons, glaziers and iron workers.⁵⁷

⊕ **Encourage, promote and accredit peer-to-peer networks.**

Teaching as soon as you learn is the pedagogy of the future.⁵⁸ Online courses provided by institutions such as MIT, and soon hundreds of others, point the way forward. Many high school students and working professionals may choose to pursue self-learning and experience-based models of education over traditional education experiences that are increasingly unaffordable. The government could play a role in endorsing this style of education.

LIFELONG LEARNING STARTS EARLY

While more and more aspects of our education system seem to lie beyond traditional brick-and-mortar establishments, millions of students in the United States still are unprepared to study on their own. Many communities struggle to encourage a culture of learning *in* their schools, let alone afterward. Many students drop out. A Northeastern University study showed that every student who drops out of high school in America costs the country about \$300,000 in lost wages, incarceration costs, lost taxes and medical expenses.⁵⁹

Today, American public schools continue to struggle, particularly in math and science. Little improvement was seen in the United States between 2005 and 2010.⁶⁰ Meanwhile, many other nations continue to outperform the United States, undercutting our ability to develop a globally competitive workforce.

Some nonprofit organizations, however, have done promising work with students from low-income, high-need neighborhoods, with the intent of developing and fostering a learning culture, preventing dropouts and sending more kids to post-secondary education.

College Summit, one of these nonprofits, aims to create lasting change by helping high schools and their surrounding communities develop college-going cultures in underrepresented areas. College Summit's program, focused on year-long seminars and a summer writing and postsecondary planning workshop, worked so well in Washington, DC, that it has been replicated at hundreds of high schools across the country. College Summit combines teacher training, community outreach, coaching and counseling, as well as robust data tracking that facilitates accountability in high schools. The organization's workshops are effective: according to its website, "College Summit participants enroll in college at a rate 22 percent higher than students who do not participate."⁶¹

Still, in many high-poverty urban schools, half of the students don't even graduate high school. City Year, another national nonprofit organization, is working to overcome this trend. Statistics show that sixth-grade students from impoverished neighborhoods exhibiting at least one of four basic indicators (attending class less than 80 percent of the time, receiving a poor final behavior grade, failing math or failing English) had only a 29 percent chance of graduating.⁶² City Year trains a corps of young professionals to go into such underprivileged schools as tutors, mentors and role models to help reverse this trend early. From fourth grade through tenth grade, City Year helps kids develop good learning practices, including literacy, math skills, leadership, better attendance and an appreciation for learning.

Community colleges provide another vibrant option for students not yet ready to attend a four-year institution. Today, community colleges enroll around 7 million pupils annually, the equivalent of 40 percent of all the post-secondary students in the United States. Yet our community colleges "sit at the bottom of the social status and financial priority list," according to a Brookings Institution study.⁶³

But the picture is changing. In February 2012, President Obama "asked Congress to create an \$8 billion fund to help community colleges train up to 2 million workers for jobs in high-growth fields." Empowering such colleges may be a catalyst to economic recovery, particularly in industries such as manufacturing that rely heavily on the technical training provided by community colleges.⁶⁴

A stronger commitment to America's community colleges, and the promotion and replication of programs such as College Summit and City Year, can help us cultivate a better-educated workforce.

Occupation and employment regulation

Sometimes we climb the ladder from the bottom rung

DISCUSSIONS of talent tend to focus on ensuring a strong enough education system to train a highly skilled workforce. Today, for example, the focus is on science, technology, engineering and mathematics (STEM) degrees (which makes sense given that America accounts for only 4 percent of the total engineering degrees awarded globally compared to the 56 percent of degrees granted in Asia).⁶⁵

But our economy is not driven solely by the top rungs of the employment ladder, scientists or Silicon Valley technologists. It is *also* propelled by real estate agents and food truck operators, contractors and skilled craftsmen. They represent talent too.

Many of them could be innovators and entrepreneurs. But much of this workforce comprises professions that require extensive

occupational licensing. In 1950, only 5 percent of the American workforce was licensed. Today, nearly a third of U.S. workers require an occupational license.⁶⁶ And these guilds can often be a challenge to break into.

Occupational licenses are an important government regulatory function that can protect consumers. Few of us would choose to visit an unlicensed doctor, for instance. But many professions that should offer low costs of entry, from food truck operators to landscape architects, are increasingly subject to a sheer weight of regulation and licensing that can deter many from entering.

This conversation around America's outdated occupational regulations is gaining increased public traction. Several high-level NPR stories have highlighted how arbitrary and restrictive licensing stifles many American

In 1950, only 5 percent of the American workforce was licensed. Today, nearly a third of U.S. workers require an occupational license.

The 102 occupational licenses studied require of aspiring workers, on average, \$209 in fees, one exam, and about nine months of education and training.

— Institute of Justice⁷⁶

entrepreneurs.⁶⁷ Even the First Lady is weighing in. In a July 2012 op-ed, Michelle Obama called for an easing of licensing restrictions for military spouses—a segment of society often affected by overly complicated and geographically restrictive professional licensing.⁶⁸

Congress, too, is getting involved. The bicameral approval of the Veteran Skills to Jobs Act centers on this very issue, allowing returning veterans to receive credit applicable toward occupational licensing requirements for relevant military training.⁶⁹

At the heart of the debate are two issues: whether occupational licensing is increasing, and if so, does it prevent competition and stall economic growth. According to University of Minnesota professor Dr. Morris Kleiner, between 1970 and 2008, the proportion of the U.S. workforce requiring licenses rose three-fold. Kleiner suggests there is a direct link between licensing and employment levels and economic growth rates as well, noting that “a licensed occupation that grew at a 10 percent rate between 1990 and 2000 would have grown at a 12 percent rate if it were unregulated.”⁷⁰ Like the First Lady, Kleiner also points to the

reduced geographical mobility inherently tied to an overly licensed economy.

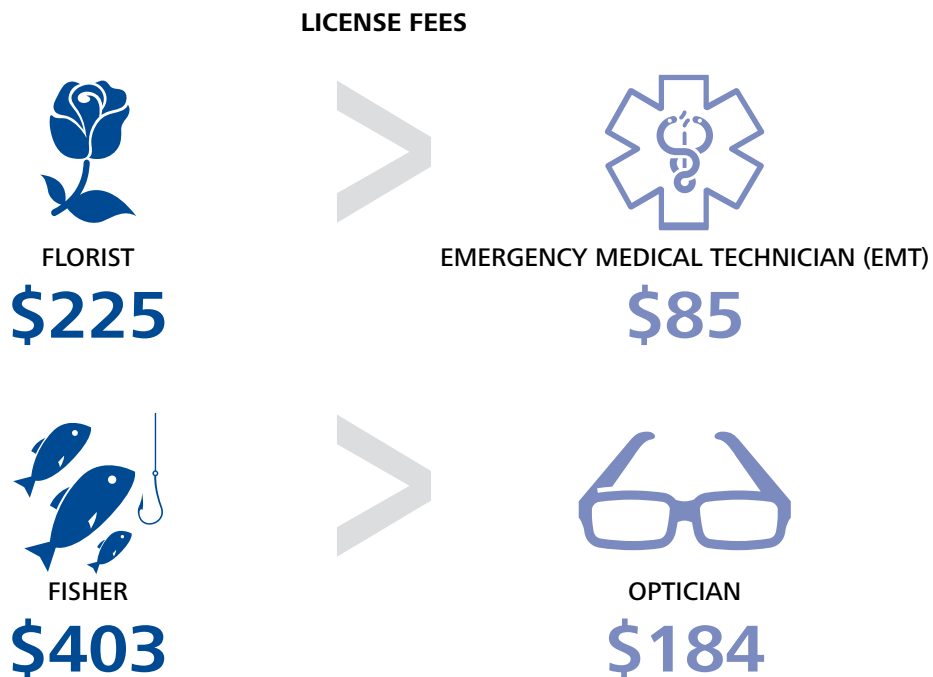
These restrictions prevent opportunity. Today, some occupations develop challenging barriers that can often reduce competition. In fact, in many states, it takes longer to become a cosmetologist than an emergency medical technician.⁷¹ Such regulations can seem simply unnecessary. In some states, for instance, a license and formal training is required to wash hair at a salon—a skill we all clearly can master, and one that can be perfected on the job in a course of an hour.⁷²

In New York City, a taxi license can cost as much as \$1 million.⁷³ While it may not cost a million dollars to get a food truck license, as a PBS series on the business says, “good luck getting one.”⁷⁴ Most cities have caps. In at least 10 U.S. cities, food trucks are not allowed on public property. In 34 cities, street vendors are prohibited in public areas. In 20 cities, street vendors cannot operate near “real” stores or restaurants.⁷⁵

This trend extends to other industries. In Utah, becoming a licensed hair braider requires two years of school at a cost of

Licensing overkill?

A recent report by the Institute of Justice illustrates surprising inconsistencies in average occupational licensing fees across the United States.



Source: Institute for Justice, *License to Work: A National Study of Burdens from Occupational Licensing*, by Dick M. Carpenter II, Ph.D., Lisa Knepper, Angela C. Erickson and John K. Ross (May 2012), http://www.ij.org/images/pdf_folder/economic_liberty/occupational_licensing/licensetowork.pdf.

approximately \$16,000. In Washington, DC, you would need more than 2,000 days of education and a passing grade on an exam to become a licensed interior designer.⁷⁷

Occupation license regulations, unlike the law, can even be retroactive. North Carolina, for example, passed a law requiring existing occupations to become licensed.⁷⁸ This included everyone from hair braiders to physical trainers, from landscape professionals to locksmiths. Continuing to practice your trade without a license can lead to a felony charge.

Employment regulations have not kept pace with the times. In some cases, they can impede upward mobility, an integral part of the American narrative.⁷⁹ In today’s economy, many people have become part-time workers or engage in a variety of different income-earning activities.⁸⁰ The number of what author Dan Pink has dubbed “free agents”—the self-employed, contractors and temporary

workers—has skyrocketed with the emergence of the Internet and alternative marketing models such as eBay and Amazon Marketplace.

LiveOps and Elance are two online platforms that underscore the emergence of a “free agent” nation. LiveOps provides the infrastructure for call-center outsourcing, allowing self-employed individuals to run their own call centers from their living rooms. Elance allows talent to connect with potential clients via an online platform. Both leverage the power of cloud computing to the benefit of a growing freelance workforce. Regulations, however, mean that if these companies provided any training to these free-lancers, the government would consider them “employees.”

“For occupations regulated in some U.S. states and not in others ... employment growth was about 20 percent greater in unregulated states from 1990 to 2000.”

— Professor Morris M. Kleiner⁸¹

Talent-boosting reforms

⊕ Review occupational licensing regulations for their impact on talent development.

Regulations can provide significant barriers to entry in occupations such as landscaping or food trucks. This stifles economic growth as it limits competition. Letting vendors operate without slews of arbitrary rules could revitalize communities. And policymakers can make quick fixes to chip away at regulatory barriers. If licenses *are* necessary, for instance, their prices can be reduced.

⊕ Encourage the development of talent ecosystems.

Every major company relies on its contractors, consultants and suppliers. As Silicon Valley icon Bill Joy has remarked, “There are

always more smart people outside your company than within it.”⁸² When considering their training needs, companies should embrace this axiom and consider their whole ecosystem, using technology to make training available to their partners at a minimal additional cost. Today, however, companies often face policies that restrict them from providing training to individuals outside the organization. For example, in many states, if a company provides training to outside contractors, they are legally considered to be employees.⁸³

⊕ Ask the right questions.

Policymakers should ask whether an occupation is licensed in all states or just some, which could indicate that its need is arbitrary. Governments also could gauge the differences between states in the price or time required to obtain a license, promoting an environment of interstate license reciprocity.

Reframing immigration

Recruiting skilled talent

THE United States last overhauled its immigration policies with the Immigration Act of 1990.⁸⁴ While the United States has let its policies stagnate, nations such as Australia, Canada and the United Kingdom have enacted immigration policies that are helping them attract talent from abroad.⁸⁵

Singapore too is rapidly developing immigration policies that attract top talent.⁸⁶ In fact, it is one of the island state's primary policies. And in the Middle East, nations such as Saudi Arabia are building entire cities such as the King Abdullah Economic City to attract foreign talent and investment.⁸⁷ Other "smart cities" such as Masdar City in the United Arab Emirates are being developed specifically as centers where large technology firms and new startups can open offices and bring with them innovative professionals.⁸⁸ Education City in Doha, Qatar, hopes to bridge the gap between elite foreign universities and institutions in the public and private sector, creating a knowledge-based economy in the middle of the desert.⁸⁹

In the United Kingdom and Canada, foreign nationals can self-petition for a work visa based on their skills and experience, without a job offer or sponsorship from a company.⁹⁰ Holders of such visas are not eligible for state welfare benefits. And in October 2011, Australia introduced sweeping reforms to streamline its visa process and make it less financially burdensome. Australia also has introduced post-study work visas that allow graduate students who obtain degrees in Australia to stay down under.⁹¹

Canada's innovations are even more sweeping. In April 2012, Canadian Minister of Citizenship, Immigration and Multiculturalism John Kenney introduced a new system to

involve the private sector in immigration policy. His approach would have companies and professional organizations, rather than the government, assess the credentials of visa applicants. Under the new system, says Kenney, "employers, not bureaucrats, will decide who comes to Canada and they will do a much better job...because they can't afford to recruit people...who can't work at their skill level on arrival."⁹² This approach may reduce the government's involvement while ensuring that candidates are appropriately vetted.

Even China and India have enacted incentive programs to win top global talent.⁹³ For example, China has successfully attracted more than 4,000 expatriate researchers back home through initiatives such as its Thousand Talents Program.⁹⁴ In 2009, after the recession set in, 60,000 Indians living in the United States returned to India to seek better opportunities.⁹⁵

The United States should reshape its immigration policies as a tool to build a globally competitive American workforce.

Keeping talent in the United States

A 2005 study by Anna Lee Saxenian showed that "foreign-born immigrants helped start one of every four U.S. technology startups."⁹⁶ These companies employed nearly half a million people and generated more than \$52 billion in sales in 2005.⁹⁷ Entrepreneurs are the job incubators. A recent Kauffman Foundation study on the link between job creation and foreign immigrants in the United States underscores this point. The report highlights data that indicates that an entrepreneur has the potential to create, on average, 512 jobs in his or her lifetime.⁹⁸

“H-1B visas play a vital role in our economy... [immigrants] have the potential to come up with an invention that can save thousands of lives or jump-start a whole new industry. They also have the ability to found a company that can provide jobs to tens of thousands of American workers.”

— Congressman Lamar Smith¹⁰³

Silicon Valley, where more than 52 percent of companies were started by immigrants, is a global mecca for high-caliber talent. It's the home to dozens of world-reknowned companies launched with the help of at least one pioneering foreign national.⁹⁹ Yet the Valley is highly concerned that talented professionals cannot come to the United States due to highly stringent visa requirements.¹⁰⁰ Making it easier to recruit and retain foreign talent could yield overwhelming benefits to the U.S. economy; the average immigrant with a STEM graduate degree creates 2.62 other jobs in the United States.¹⁰¹

But today, too many foreign graduates return home due to immigration rules.¹⁰² If a talented engineer fails to secure a job at a company that can sponsor her visa, she is sent back home. This happens each year to thousands of graduates from our most elite schools such as Stanford, California Institute of Technology and MIT. They return to China, India, Eastern Europe, Russia and other countries and join competing firms or start their own businesses. And they take their education, know-how and entrepreneurial spirit with them.

A more talent-friendly policy, one that rewards skilled talent from abroad, would make it easier to stay in America and easier for accomplished foreign students to attend U.S. universities. Other countries gain every time the United States fails to attract or keep

talent.¹⁰⁴ Every time foreign-born students leaves the U.S., the knowledge they gained here leaves with them.

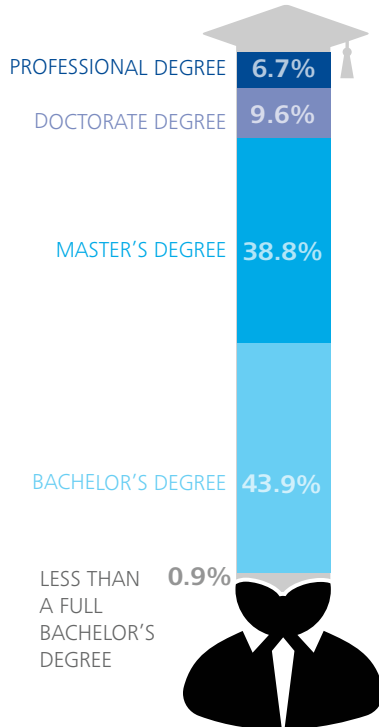
Talent-boosting reforms

⊕ Expand and reform the H-1B visa program.

Doing so would be a *giant* step in the right direction. The H-1B, introduced in 1990 as a component of the Immigration and Nationality Act, allows U.S. employers to hire foreign workers in specialty occupations such as engineering and computer programming if an American worker cannot fill the open position. These positions are often in the highly-skilled, low-supply STEM fields—with STEM occupations accounting for around 64 percent of H-1B recipients.¹⁰⁵ According to a Brookings Institution report, private companies—which sponsor 90 percent of H-1Bs—leverage foreign talent to drive innovation and economic growth to “high-tech metropolitan hilltops” around the United States. Companies large and small are harnessing the power of this skilled talent pool to create waves of innovation in the advanced manufacturing, biotech and health care industries, among others.^{106,107} However, the current H-1B process is long and tedious and entails a restrictive quota system that American businesses have been attempting to expand for decades.

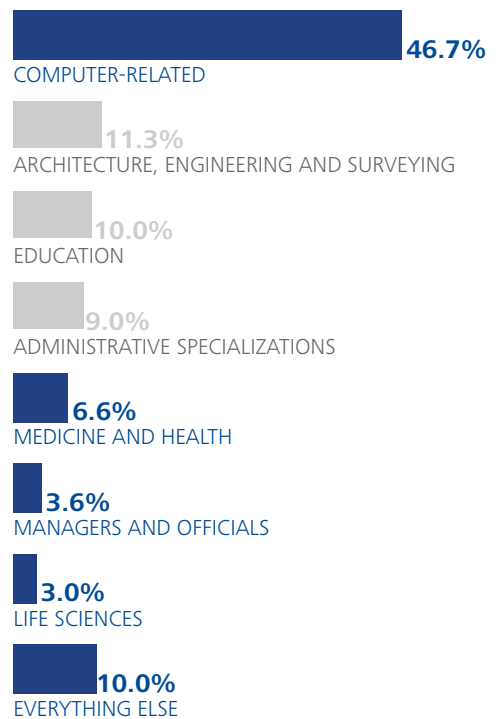
Jobs of the future (for immigrants)

EDUCATION OF H-1B APPLICANTS



OVER **92%** OF H-1B APPLICANTS HAVE AN ADVANCED DEGREE, AND ALMOST ALL OCCUPATIONS FALL INTO THE BUREAU OF LABOR STATISTICS' BRIGHT OUTLOOK CATEGORY AT THE HIGHEST SKILL LEVELS (LEVELS 3, 4 OR 5)

PROFESSIONS OF H-1B APPLICANTS



Source: U.S. Citizenship and Immigration Services (USCIS), Characteristics of H-1B Specialty Occupation Workers: FY2011 (March 12, 2012), <http://www.uscis.gov/USCIS/Resources/Reports%20and%20Studies/H-1B/h1b-fy-11-characteristics.pdf>. AND Historic USCIS data.

Unfortunately, despite increasingly dire warnings from American entrepreneurs, universities and companies, rigid caps remain on H-1B visas.¹⁰⁸

Reforming the way that H-1Bs are issued has the potential to pay dividends. First, a reformed H-1B system may drive further economic growth in the American industries struggling to find the right talent. Second, restructuring the program may allow the talent training funds, paid for by the H-1B visa fees, to be rerouted to key metropolitan areas of rapid growth. Here such programs can train a new generation of skilled American workers.

⊕ Keep foreign graduate students in the United States.

Expedite the immigration process for graduate students who earn a master's degree or higher, especially in STEM fields.¹⁰⁹ If you have paid to attend an American university and complete an advanced degree, you should be allowed to stay in the U.S. at least for a

period of time—and then qualify to stay longer and apply for a green card.¹¹⁰

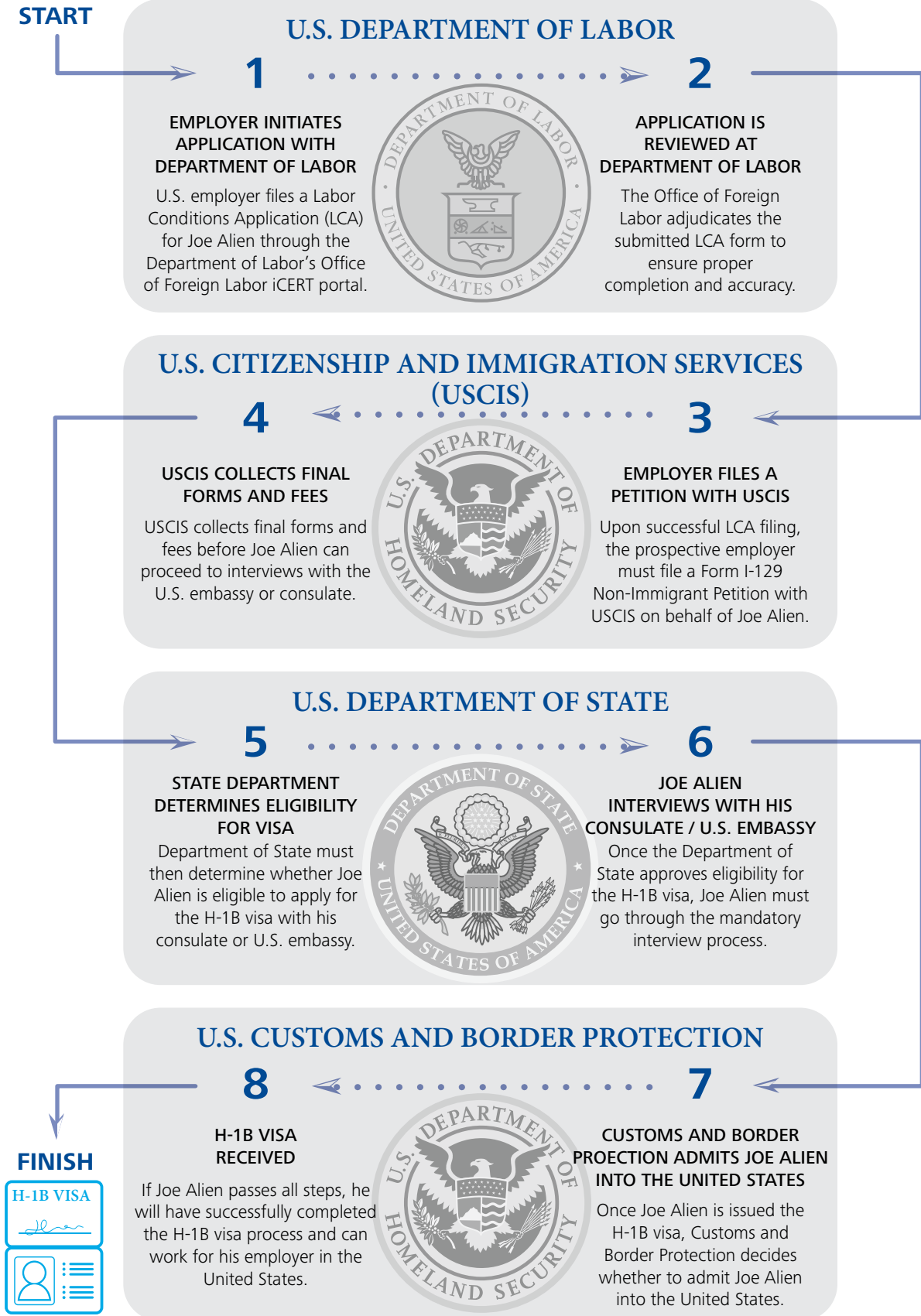
⊕ Consider input from the private sector.

Consider the Canadian model and make it easier for private companies to bring talent from foreign subsidiaries. Rely on companies to tell the government what skills they need. For the foreseeable future, the United States will require skilled workers at all levels to operate today's tools and devices. Our federal government could work with industry more cooperatively to understand labor supply issues and adjust quotas accordingly.¹¹¹

⊕ Provide more certainty.

Many talented professionals are denied permanent status after spending more than five years in the United States. Many don't want to settle or start families here only to risk being ejected. The federal government should consider rules to make the immigration process more reliable, such as a tiered, point-based system.

How to sponsor an immigrant to fill a temporary worker position (H-1B visa)



Foreign direct investment

Reframing from national security to training American talent

IN 2006, the Dubai Ports World, arguably one of the worlds' leading and logistically sophisticated port authorities, offered to purchase the British firm Peninsular and Oriental Steam Navigation Company. As part of the sale, Dubai Ports World would assume P&O's existing leases to manage major U.S. port facilities in New York, New Jersey, Philadelphia, Baltimore, New Orleans and Miami.

The proposed purchase sparked a firestorm of criticism on talk radio, in the newspapers and in Congress, which ultimately rejected the deal. The debate was framed almost solely in terms of security concerns about an Arab company operating U.S. ports.¹¹²

There may have been actual security concerns. But surely these could have been mitigated or hedged against. During the whole debate, a subject that was entirely overlooked was the benefits Dubai Ports World could bring to America from a talent perspective. There was no public debate on the potential benefits of having the company manage ports in America. American port workers could have benefited from the transfer of knowledge, expertise and operations excellence from a leading port operator. More broadly, domestic manufacturers could have benefited from

the enhanced ability to access export markets due to more productive port infrastructures, leading to more rapid talent development in the manufacturing sector. Furthermore, flows of cash from Dubai could have provided the U.S. economy with valuable capital and access to innovation.

This was not an isolated example, unfortunately. When policymakers consider FDI they typically do not consider its effect on domestic talent. Doing so makes it clear that the United States is losing out on opportunities to absorb and develop top talent in America with the aid of foreign investors who can offer deep coffers, cutting-edge technology and leading management expertise.

A recent study by David Marchick, a former Clinton State Department official, found that the federal approval process to ensure that national security is protected during foreign acquisition of U.S. assets has become overly difficult and increasingly uncertain, making it much riskier for non-Americans to invest here.¹¹³

Today, subsidiaries of foreign companies represent less than 1 percent of all U.S. firms, yet constitute about 5 percent of jobs, 11 percent of capital investment and 14 percent of all

“Rather than erecting barriers, America should be thanking foreign direct investors for investments that appear to be, on average, transferring wealth from abroad to the United States.”

— Prof. Mihir A. Desai¹¹⁴

corporate R&D in America. With more FDI, those numbers would increase.

In this vein, President Obama’s Jobs Council, headed up by GE CEO Jeff Immelt, recommended that the United States increase its FDI to the levels of the late 1990s—26 percent of the global share. The council suggested that the United States aim for \$1 trillion in FDI over the next four to five years, an increase 20 to 25 percent over current levels.¹¹⁵ This renewed emphasis on FDI would help bring skilled talent and best practices from all over the world to the United States, thereby strengthening American competitiveness.¹¹⁶

Talent-boosting reforms

⊕ Encourage “innovation investment zones.”

Innovation investment zones develop around universities and national laboratories. They provide a unique opportunity for companies to share resources and talent by involving themselves with academic research. Permitting foreign firms to enter this market would create jobs and opportunities for educated Americans here, while ensuring that foreign firms put

funds into the community by investing in the ecosystem around them.

⊕ Aggressively promote the advantages of the United States to foreign firms.

This should involve improving the capabilities of the SelectUSA program, which markets the advantages of doing business in America to foreign nations. We could help SelectUSA work more closely and effectively with cities and states by identifying exactly where the United States could offer the best locations. The program should help foreign firms recruit and retain talent in America for their U.S.-based operations, among many other advisory, educational and marketing services.

⊕ Strike a better balance between security concerns and talent priorities.

When considering investment from abroad, security may be a consideration, but there should be ways to mitigate security risks or to hedge against them. Policymakers should consider the benefits of investment and then conduct a proper threat assessment to determine whether or not to allow the investment to occur.

Unemployment insurance policy

Creating incentives for reskilling

In an economic downturn, it can be extremely difficult to speak about unemployment policy reforms in rational and productive ways. But it's a conversation worth having.

For all their good intentions, our current policies carry with them too many unintended consequences, the foremost being that they fail to create an optimal climate for talent to prosper. Unemployment insurance (UI) laws—which were created during the New Deal when the U.S. labor force and industrial structures were vastly different—should be updated to better suit today's talent needs and economy.

High unemployment and generous benefits have exhausted UI funds in many states, many of which have raised UI taxes on businesses to replenish their reserves.¹¹⁷ This increased burden reduces businesses' ability to create jobs in hard times when job creation is most critical.

Even though the UI tax is structured so that tax rates increase with the UI benefits paid out to employees, firms can be taxed only to a certain point. In Massachusetts, the limit is \$1,530 per employee per year at the highest possible tax rate; by contrast, the state's laid-off workers were receiving up to \$600 a week, the

highest rate in the country.¹¹⁸ The resulting structural deficit ends up on the tab of other workers and companies. Firms that are consistent employers end up subsidizing seasonal or irregular employers.¹¹⁹

Numerous empirical studies demonstrate that current UI policy *actually keeps the unemployment rate high* because it can dissuade workers from relocating and making other hard decisions when they can receive close to 50 percent of their former wage in UI benefits.¹²⁰

And sometimes these benefits are preferred to new jobs whose wages are less than previously received, creating an environment of underemployment.¹²¹

What does this have to do with talent? Our current unemployment insurance policies create *powerful disincentives* for the labor-force adjustments needed to remain competitive in the global economy. This has the unintended effect of contributing to the widening skills gap referred to earlier in the paper because individuals have less incentive to undertake the sometimes painful reskilling needed to secure jobs with today's more demanding employers.

Our current unemployment insurance policies create *powerful disincentives* for the labor-force adjustments needed to remain competitive in the global economy.

Fortunately, a number of practical policy solutions can help better balance compassion towards laid-off workers with efficiency, so that workers get back on their feet faster and retrain to make themselves more attractive to employers.

Talent-boosting reforms

⊕ Provide one-time unemployment benefits.

One potential reform is to deliver unemployment benefits in a lump sum. This would lower administrative costs of the program that currently pays UI benefits for as long as 99 weeks. It's also a simple way to incentivize laid-off workers to immediately begin their job search, skills retraining or to provide some start-up capital for a new business, with the knowledge that benefits are a one-time safety net, not a trampoline.

⊕ Link unemployment benefits to professional development.

Another option is to view periods of unemployment as opportunities to retool one's skill

set. A part of distributed UI benefits could be earmarked for approved training, continuing education and professional development. This would incentivize laid-off workers to develop new skills relevant to the shifting labor markets. Denmark and Switzerland's unemployment insurance programs are structured to reward individuals for seeking development opportunities.¹²²

⊕ Subsidize work, not unemployment, during downturns.

A further option is to help companies minimize layoffs during economic downturns. Germany has one of Europe's lowest unemployment rate. It has achieved this in part due to its *Kurzarbeit* economic scheme, which provides a short-term working allowance if an employer needs to cut wage costs and working times amid economic slowdown.¹²³ Thus the government, for a short period of time, will subsidize the wages of an employee in lieu of the employer laying off the individual.¹²⁴ Studies suggest the cost to government is much lower than paying unemployment benefits.¹²⁵

Intellectual property

More agile, more proactive, more competitive

FEW areas incite more contentious policy debate than intellectual property (IP) rights—and with good cause.¹²⁶ The IP environment is changing fast. The size and speed of information in today's interconnected world is revolutionizing the capitalization and protection of ideas. Moreover, new major players in the IP arena such as China and India are creating shockwaves in the patent and IP marketplaces. China recently announced that by 2015, they aim to file two million patents annually—four times the amount the United States registered in 2010.¹²⁷ Both factors could create serious dilemmas in defining IP rights. And both directly affect the talented professionals who fuel America's digital economic boom.

Historically, America's competitive advantage has relied—at least in part—on the creation and commercialization of new ideas. Our robust IP system has long been considered one of the nation's market advantages. In a Harvard Business School survey of managers, stronger IP protections were cited as a leading reason why companies choose to stay in the United States.¹²⁸ Copyright-based industries and interdependent sectors account for more than 11 percent of the U.S. gross domestic product. And such copyright-driven businesses also produce almost 9 percent of U.S. jobs.¹²⁹ The IP environment can be a powerful innovation engine if harnessed effectively.¹³⁰

In today's economy, however, being able to encourage the *flow* of knowledge is sometimes as important as *holding on* to know-how at any

cost.¹³¹ Today, we produce more information at a higher speed than ever before. According to Eric Schmidt, Google CEO, "We create as much information in two days now as we did from the dawn of man through 2003."¹³² In the past, knowledge stocks—repositories of proprietary information or intellectual capital—used to hold their value. Organizations could come up with an idea, and protect it and monetize it on the open market for lengthy periods. Today, this knowledge stock evaporates quickly. The world is changing at lightning speed, and the intellectual property rights regime is struggling to catch up.

This policy lag affects America's talent pool. In the information age, too much IP protection can be as damaging to innovation as too little. For example, small firms may fear going forward with a product because some component or function of it may be patented by another firm. This can be seen playing out in the patent wars mobile phone manufacturers engage in globally today.

At the same time, too little IP protection inhibits a business environment favorable to talent development, by failing to reward individuals for their inventions and innovations. The United States must find a way to balance the market of ideas with the speed of the information age. A more modern, dynamic, pro-talent IP regime would have the following characteristics.

Talent-boosting reforms

⊕ **First, do no harm.**

How can the United States guarantee that its creative, passionate and talented citizens are protected in a rapidly changing marketplace? Is there a way to ensure that what they create today is not destroyed by legal complications tomorrow? Sometimes the right public policy is to stay out of the way.

The Creative Commons movement, for example, can help resolve many of the issues we face today. Creative Commons lets creators themselves choose the levels of protection they want for their intellectual property. Creative Commons licenses, based on traditional copyright licenses, are issued by a nonprofit organization whose goal is to promote “universal access to research, education and culture.”¹³³

⊕ **Default to openness and transparency.**

Governments should set up default rules. For example, Dr. Yoshiyuki Tamura, professor of law at Hokkaido University, has suggested that Japan consider placing all “human creative intellectual labor” in the public domain unless otherwise stipulated.¹³⁴ Another option would be to adopt the Creative Commons license model as a default. In this capacity, the government could help foster the Creative Commons movement and legitimize it further while reducing the need to reinvent the wheel.

⊕ **Encourage open innovation.**

Companies are realizing more and more that innovation can come from anywhere—including their customer base. A growing movement towards open innovation is revolutionizing the IP marketplace. Many companies are outsourcing components of their R&D to the consumer through innovation portals where individuals can submit their invention and design ideas directly to the producer.¹³⁵ These companies understand that customers

themselves can provide the spark of creativity needed for future job creation.

⊕ **Protect knowledge flows, not just knowledge stocks.**

Technological progress and the social environment should be a much bigger consideration in adapting copyright to the digital era. Our IP policy should recognize the importance of protecting certain knowledge that keeps firms competitive without alienating customers and staunching the flow of knowledge so essential to developing talent.

⊕ **End abuses such as patent trolling.**

Today’s IP system is too slow to prevent foreign IP infringers from selling in the U.S. market, and is vulnerable to abusive practices such as patent trolling.¹³⁶

Consider smartphone technology. An estimated 250,000 U.S. worldwide patents cover the technology behind the devices and components that make them work. Yet if a U.S. court finds just one of the U.S. patents has been infringed, it has the right to banish the infringing handsets entirely. A patent that costs \$25,000, if infringed, can lead to millions of dollars in damages. When the target of a patent lawsuit is a start-up, the economic consequences can be crippling, in effect creating a confiscatory tax on the technology entrepreneurs who play a major role in revitalizing our economy.¹³⁷

Patent policy should strike a balance between protecting innovation—especially in long-term, fundamental R&D in domains like material science where a decade of investment may be required before key innovations are developed—and reducing the rewards for those pursuing litigation over small advances in complex technologies. The United States cannot afford to create an environment where our most creative entrepreneurs are fearful to innovate.

Conclusion

TODAY, the United States faces historic challenges in workforce competitiveness. Our students badly lag behind many of our competitors in K-12 math, science and reading. College graduation rates have stagnated for two decades. Our immigration policies make it extraordinarily difficult for talented foreigners to migrate to America—or stay after they’ve gone to graduate school here. And thousands of jobs go unfilled, or are moved out of the country altogether, due to a mismatch between the skills America companies need versus its available talent.

We have truly reached an inflection point. Individuals, firms and nations can no longer remain complacent about the talent required to succeed; they must constantly strive to refresh their workforce.

To remain competitive in the 21st century, policy agendas must focus much more aggressively on talent.

Public policy cannot solve these issues alone. It can, however, have a huge impact in creating a better environment for talent to thrive in this country, and for America to attract the most talented people in the world to its shores. To remain competitive in the 21st century, policy agendas must focus much more aggressively on talent.

In this paper, we have reviewed only a select set of public policies that affect talent development. In fact, though, virtually every domain of public policy ranging from the criminal justice system to urban policy, from trade policy to financial regulation, can contribute to or hinder a talent development agenda. The future is ours to win or lose—we simply need to better understand the implications of our policy choices.

Appendix A

The future of the American workforce

America's talent pool will need to ready themselves for a shift in the most demanded skills according to a study by the Institute for the Future.

TOP 10 REQUESTED SKILLS IN THE YEAR 2020

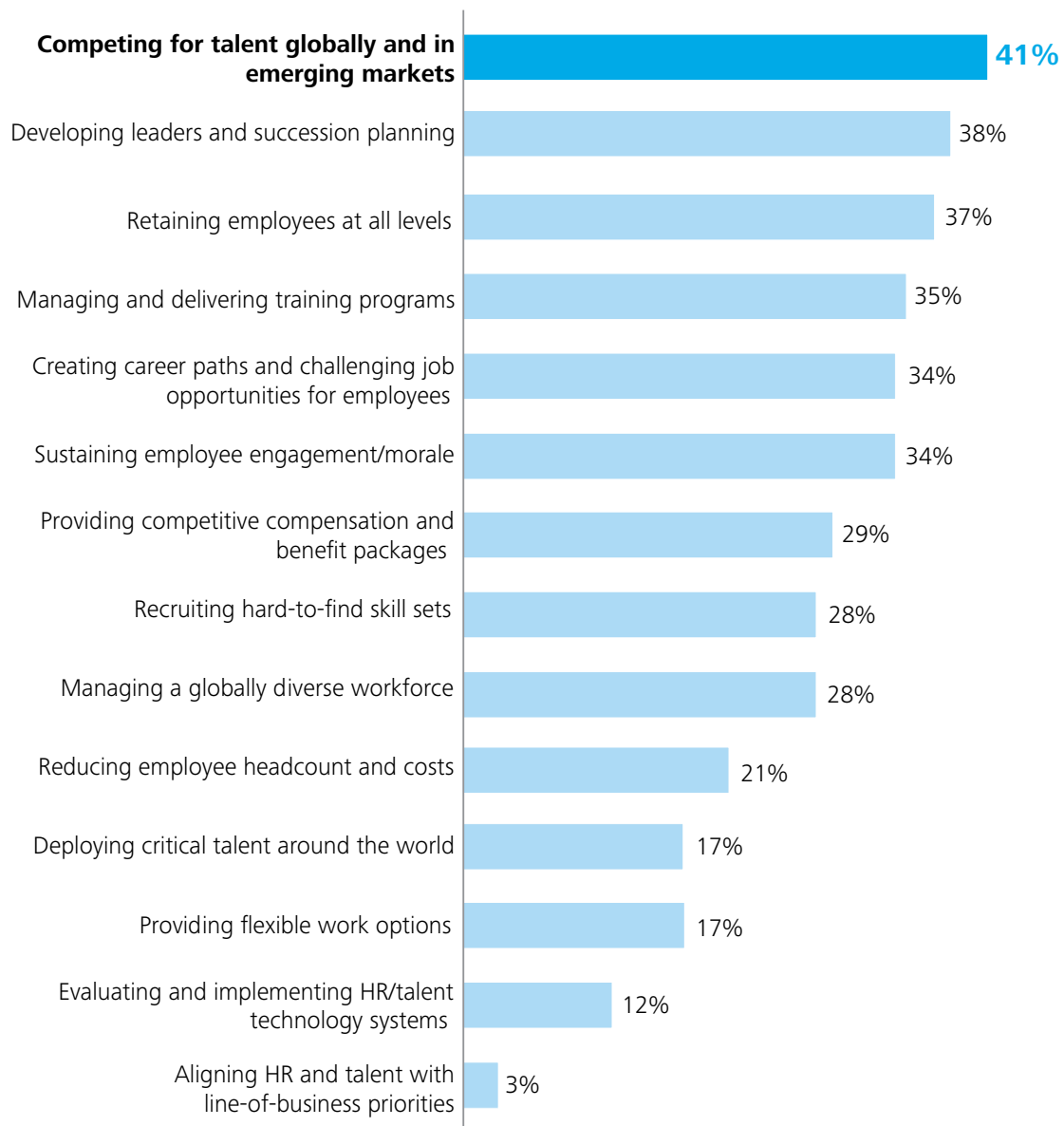
- 1 SENSE-MAKING
- 2 SOCIAL INTELLIGENCE
- 3 NOVEL AND ADAPTIVE THINKING
- 4 CROSS-CULTURAL COMPETENCY
- 5 COMPUTATIONAL THINKING
- 6 NEW-MEDIA LITERACY
- 7 TRANS-DISCIPLINARITY
- 8 DESIGN MINDSET
- 9 COGNITIVE LOAD MANAGEMENT
- 10 VIRTUAL COLLABORATION

Source: *Future Work Skills 2020*, Institute for the Future for the University of Phoenix Research Institute, <http://www.iff.org/futureworkskills2020>.

Appendix B

What are your organizations' most pressing concerns?

According to Deloitte research, employers are most concerned about the new global race for talent.

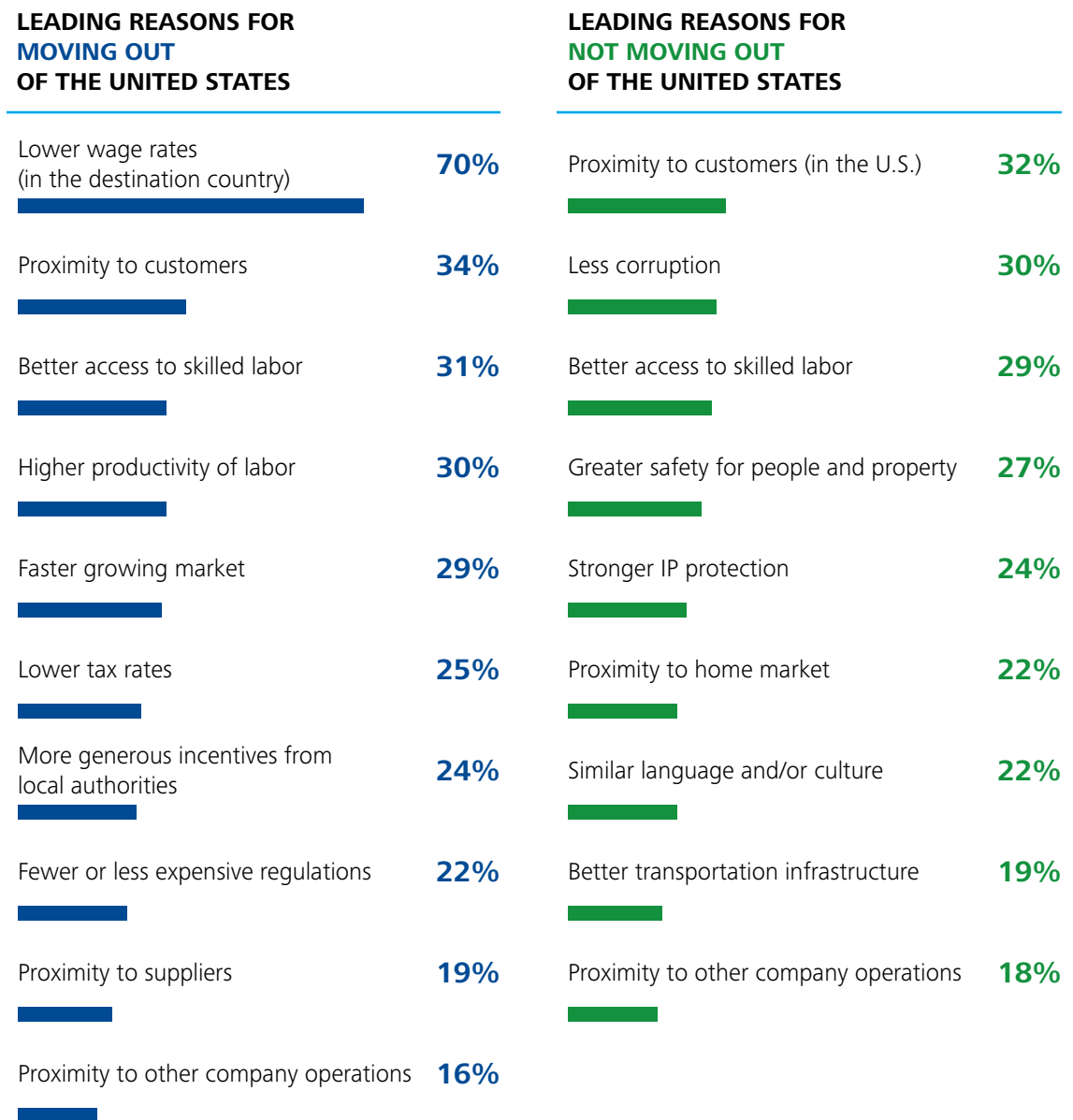


Source: "Talent Edge 2020: Blueprints for the new normal," (December 2010), p. 7, http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/IMOs/Talent/us_talentedge2020_121710.pdf.

Appendix C

Rationales for location choices

In deciding whether to move existing business activities out of the United States, Harvard Business School alumni respondents reported that certain factors made the difference.



Source: Michael E. Porter and Jan W. Rivkin, "Prosperity at Risk," *Harvard Business Review*, (January 2012), p. 15, <http://www.hbs.edu/competitiveness/pdf/hbscompsurvey.pdf>.

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110. Wadhwa, “We Need to Stop America’s Brain Drain.”
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112. New Jersey Senator Frank Lautenberg claimed that the transfer of title of operations at one of Newark’s four terminals constitutes an Arab “occupation,” adding that, “We wouldn’t transfer the title to the Devil; we’re not going to transfer it to Dubai.” In response to criticism of his comparison, Lautenberg defended his remarks by noting the failure of the United Arab Emirates to support U.S. policy toward Israel and Iran. See Stephen Zunes, “The Dubai Ports World Controversy: Jingoism or Legitimate Concerns?” *Foreign Policy in Focus* (March 13, 2006), http://www.fpif.org/articles/the_dubai_ports_world_controversy_jingoism_or_legitimate_concerns#_edn2.

Many lawmakers argued that allowing a foreign-owned company, particularly a company owned by the UAE, to run our ports would undermine national security, noting that two of the 9/11 hijackers came from the UAE and that they drew funding from Dubai banks before the attack. The UAE also was one of only three nations to recognize the Taliban’s regime in Afghanistan. Rep. Peter King of New York, a Republican and chairman of the House Homeland Security Committee, also charged that CFIUS did not conduct a thorough investigation into any terrorist ties DP World may have. See “Key Questions about the Dubai Port Deal,” *CNN* (March 6, 2006), http://articles.cnn.com/2006-03-06/politics/dubai.ports.qa_1_dp-world-uae-dubai-port-deal?_s=PM:POLITICS.
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- at the time, from 6.8 percent to 9.5 percent. He observed that, even though unemployment had peaked at a higher rate in the 1981 recession, the average duration of unemployment and the share of unemployment that was long term were much higher in the recent recession. See Robert Barro, “The Folly of Subsidizing Unemployment,” *Wall Street Journal* (August 20, 2010), <http://online.wsj.com/article/SB10001424052748703959704575454431457720188.html>.
121. Gallup, “U.S. Employment (Weekly),” <http://www.gallup.com/poll/127538/Workforce-Weekly.aspx>. Barro, “The Folly of Subsidizing Unemployment,” and Pioneer Institute, “Unemployment Insurance in Massachusetts.”
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 - ^a Matt Woolsey, “World’s Best Places for Unemployment Pay,” *Forbes* (June 6, 2008), http://www.forbes.com/2008/06/27/unemployment-benefits-world-forbeslife-cx_mw_0627worldunemployment.html.
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