CENTER FOR THE
STUDY OF INTELLIGENCE

Emerging Trends:

The Future Workforce

November 2012

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Foreword

In previous Emerging Trends scans and deep-dive studies on identity and wireless communications, the Center for the Study of Intelligence has focused on dozens of trends ranging from crowdsourcing to cloud computing that are already providing challenges and opportunities for how we do our work.

Future Workforce takes a closer look at just who will be doing that work. It identifies 10 trends that currently are shaping the character, habits, and expectations of the Millennial generation, whose members will constitute the majority of our workforce by the end of this decade. It asks: who are these young workers; how do they differ from older generations; and what might be their impact on hiring, training, retention, compensation, organizational culture, security, technology, and other areas?

Research for this paper began with visits to traditional companies, technology startups, and nongovernment organizations to learn more about steps they are taking to help attract and retain the best and brightest workers. Dozens of examples of new policies and programs are presented here with the understanding that, while there is no one-size-fits all workforce strategy, these might offer managers who are seeking ways to meet workforce goals new tools for doing so. Some—but by no means all—of the challenges and opportunities for the IC that seem to emerge from this study are offered in this paper's appendix.

The project continued with interviews of university professors and administrators, recent graduates, and young college students. "The young are not like you and me," as one technologist told us, referring to common characterizations of the Millennial generation as impatient, multitasking, digital natives who are collaborative, socially-conscious, insistent on flexibility, and globalized. This paper offers several, perhaps surprising, comments from Millennials about their views on diversity, debt, and workplace loyalty.

Future Workforce is intended to be a primer for organizations, managers, and individuals who wish to stay abreast of potential changes that young workers might bring to the workplace. If organizations don't understand the trends that are shaping the future workforce, they risk imposing paradigms of employee hiring, development, and management that are fast becoming obsolete.

For additional copies of this and other Emerging Trends reports, please contact us at ⬚ CSI welcomes **(b)(3)** comments on this report and the work of CSI's Emerging Trends Program in general and would be pleased to work with any IC component interested in identifying implications of emerging trends on intelligence work.

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Director, Center for the Study of Intelligence
November 2012

Table of Contents

Executive Summary

Over the next several years, we will fold into our workforce a growing number of employees from the Millennial generation – those born between 1980 and 2000. Millennials already outnumber Baby Boomers in absolute numbers, and it has been projected that by 2025 they will constitute 75-percent of the workforce.[1] This paper asks: Who are the Millennials? Do they differ from those likely to be reading this paper today— and how? How is the corporate world reacting to the arrival of this generation and are there lessons we can learn from that? What might be the impact for hiring, training, retention, security, technology, and organization?

A number of recent and emerging trends are shaping the workforce of tomorrow. Among them are:

> **The recent financial crisis**, which slowed the retirement of older workers seeking to rebuild eroded savings, resulting in headroom issues for young employees. As a result, organizations are facing growing challenges motivating and retaining younger workers who are eager to make their mark. Many young people still seeking employment require high-paying jobs and/or generous loan repayment programs to address crippling educational debt burdens. Those who have slipped into default on school loans have a hard time finding jobs with organizations unwilling to consider applicants with poor financial histories.

> **Rapid technological advancements**, which have resulted in a generation of "digital natives" who seamlessly incorporate new technologies into their everyday lives. Members of this generation are impatient with organizations that deny them access to the tools they see as necessary to make their personal and professional lives most efficient. The biggest turnoff for some Millennials, however, is not the lack of the latest technology, but an organization that creates rules that stand in the way of their own vision of success. For example, tech-savvy young workers are accustomed to downloading or hacking their own fixes for computer problems and might be unwilling to understand or comply with corporate security policies.

> **Shifting gender and family dynamics**, which are challenging all employers. As female graduates outnumber male graduates at US colleges and universities, there is a growing feminization of the US workforce. Meanwhile, increased eldercare responsibilities and changing gender norms related to household duties are driving demand for more flexible work arrangements. In the near future, we could see work-related travel and relocations falling disproportionately on younger employees.

> **Health issues**—such as the trend toward medicalizing depression and obesity, and the increased off-label use of stimulants and other neuroenhancing drugs—are requiring organizations to make ethically and legally complicated choices about hiring and managing employees.

Millennials have strong values against which they will judge future employers, including:

> **Collaboration.** As a result of their access to collaborative technologies and academic training, Millennials are used to working in teams. Many expect open and flat organizations that allow iterative, entrepreneurial, and risk-tolerant approaches. They often advocate for open workspaces and flexible organizational structures. Employers will likely need to adopt some new work processes—and more established employees will need some new skills and training—to work most effectively in these collaborative environments.

> **Diversity.** While workers today value and expect diversity as much as ever, the definition of diversity is shifting. For Millennials, diversity is a question of whether the organization has the right mix of people necessary to fulfill its mission and avoid groupthink. For them, requisite diversity includes cognitive diversity—varied perspectives, backgrounds, experiences, and in some cases international experiences and connections. This new generation also is keenly aware of and likely to press employers on gender equity issues.

Public Service. Commitment to public service seems stronger than ever for a generation that is marked by 9/11 and is used to school and religious community service requirements. But young people's definition of public service increasingly extends beyond government jobs to include employment with nonprofits, NGOs, and even the private sector. Consequently, the government will face increased competition for employees motivated to have a positive impact on the world.

Global Connectivity. The future workforce has extensive international experience and contacts from time spent studying or working abroad and from participation in web-based networks that seamlessly cross international borders. Such relationships are easier than ever to maintain with tools like Facebook, Twitter, and Skype. Many young workers will be unwilling to give up these relationships. Many will be looking to join organizations that offer opportunities to travel or work abroad.

There are additional attitudinal trends among members of this generation that might have profound implications for how employers need to engage the workforce.

They see their career as something to be 'curated.' Just as individuals use new technologies to better manage the way they appear to the outside world, the incoming generation collects and edits skills and experiences to prepare for their next job. Rather than thinking of their careers as a linear *progression* up a professional ladder, young workers increasingly see their careers as a series of moves across a lattice of jobs and employers. This involves a fundamental reframing of how people evaluate job options and career choices. From an organizational perspective, workers might be seen less as "employees for life" or "family" and more as temporary "co-laborers."

Workers expect a holistic blend of corporate culture, technology, and mission. A deciding factor for young workers when evaluating prospective employers is how well they identify with and can embrace the corporate culture, and how successfully that culture is rooted in the mission of the organization. Businesses that create fun products, for example, should have a fun and open culture; likewise, organizations whose products are based on expertise should provide technology that enables the maximization of knowledge production and outreach.

Without understanding the trends that are shaping the future workforce, organizations risk imposing paradigms of employee hiring, development, and management that are fast becoming obsolete. This paper highlights the approaches some organizations are taking to attract and retain the best future workforce, while still fulfilling their current missions. Some of these practices might yield success stories, while others probably will come to be regarded as misguided fads. What is certain is that there will be no one-size-fits-all answer. The examples here are offered as food for thought for managers as they consider how their organization's specific goals and missions align with the challenges outlined in this paper, and as they design policies and procedures to meet those challenges.

In the Intelligence Community, these trends raise issues for the future of the intelligence profession. While many augur well for the profession—such as the availability of more potential employees who possess international experience, valuable language skills, and greater facility with social media and technology platforms—others portend shifts that necessitate the dismantling and review of some of our most basic assumptions, particularly those involving security clearances, background checks, social media, and employee retention. The last section, "Workforce of the Future: Relevance for the Intelligence Community," treats these issues in detail.

Introduction

Research for this paper started with a broad consideration of trends in society, business, and technology that are likely to affect the workforce of the future. Noted developments include changes in educational patterns and outcomes, technology usage patterns, employment opportunities, perspectives on diversity and international affairs, and emerging health challenges.[2] Particular attention was paid to how the integration into the workplace of the Millennial generation—those born between 1980 and 2000—is likely to affect all levels of an organization.

The examination of these trends raised 10 critical questions for employers. Those questions fall into two broad categories.

For each of these questions, relevant trends and implications for organizations are identified, along with some ways that the private sector is beginning to respond. Some of these approaches are variations on old themes, while others seem truly novel. The examples in this paper are neither an exhaustive assessment of the possible range of options, nor necessarily "best practices." They are offered as food for thought for managers who are wrestling with these same challenges. Figuring out which solutions make sense requires an analysis of the specific requirements of particular organizations.

The first set of questions focuses on the beliefs, habits, skills, and expectations that the future workforce will bring into the workplace:

1. How will the explosion of consumer information and communication technologies (ICT) affect employee productivity and expectations for technological devices and information systems in the workplace?

2. How will changing ideas about racial and ethnic diversity affect the workplace?

3. How will the deepening and broadening of personal international connections affect workplace preferences?

4. How will changing perceptions of public service impact the future workforce?

5. What sorts of workspaces will those who value a "flat" organizational structure demand?

The second set of questions focuses on external trends affecting the future workforce and how newer workers might engage with their colleagues and employers:

6. How will changing expectations about retirement influence · intergenerational dynamics in the workplace?

7. How will the fact that an increasing percentage of college graduates are female affect dynamics in the workplace?

8. How will emerging health challenges affect employees' working relationships with one another, as well as with their managers?

9. How will changing family structures and dynamics affect demand for flexible working conditions?

10. How will increases in personal indebtedness impact the employability and career choices of incoming workers?
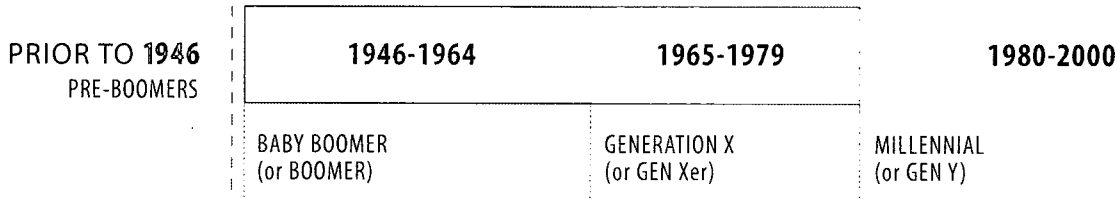
Who Is The Future Workforce?

Part of the largest generation in history, Millenials are just beginning to enter the workforce. But they are projected to represent more than half of the workforce by the end of this decade. Their values and experiences will, for good or ill, influence the culture of all organizations. So, who are the Millennials and what are they like?

PRIOR TO 1946 PRE-BOOMERS	1946-1964	1965-1979	1980-2000
	BABY BOOMER (or BOOMER)	GENERATION X (or GEN Xer)	MILLENNIAL (or GEN Y)

Millennials were born during a period of relative economic prosperity in the United States. The 76 million-strong generation was raised by Gen X and Baby Boomer parents who were well equipped to meet their children's physical needs while providing a great deal of emotional support and involvement. Much has been written about this generation's unique blend of characteristics. Some of the more common observations include:

Millennials Are Multitasking Digital Natives:
Having always had access to computers and the Internet, Millennials are comfortable with digital technologies and use them as a primary means of accessing information. They often employ these technologies to juggle several tasks at once across multiple media types (e.g., TV, computer, digital music player, cell phone, gaming device).

Millennials Are Impatient:
They have a low tolerance for delays and demand quick and constant feedback at work, as well as reliable processes and services to speed their interactions. Millennials are highly meritocratic, expecting high performance to be rewarded and frowning upon tenure-based promotion system. They dislike intermediaries and have limited regard for layered bureaucracy.

Millennials Demand Flexibility, Convenience, and Customization:
They expect to work hard, deliver results, and enjoy a balanced life. As such, they prefer to keep their time and commitments flexible, are always on the lookout for better options. They demand that organizations and individuals give them the ability to pursue these options.

Millennials Are Collaborative, Networked, and Transparent:
Collaborative learning became the norm in many academic institutions during their youth, a trend buttressed by the growth of collaborative spaces and tools. To Millennials, their "community" includes both face-to-face and social networks. As a consequence, they are inclined to share personal information on-line that older generations might consider "private," and expect that others will reciprocate.

Millennials Are Optimistic, Progressive, and Possess Strong Social Values: Like young people of any generation, Millennials are in search of meaning, particularly as they relate to their roles as citizens, students, and employees. They believe in contributing to the vitality and health of their local, national, and global communities and demand that organizations have strong corporate social responsibility programs.

THE YOUNG ARE NOT LIKE YOU & ME

In an attempt to better understand the "mindset" of young adults entering college, Beloit College each year publishes a list of facts about the entering class. Below are some of their observations for students born between 1986 and 1992 and entering the workforce roughly between 2006 and 2012. These facts are reminders that young workers have very different experiences and perspectives than the incumbent workforce. As one technologist interviewed for this paper said, "The young are not like you and me."

OVER THE COURSE OF THEIR LIVES:

Google has always been a verb.

Caller ID has always been available on phones.

The Soviet Union has never existed and therefore is about as scary as the student union.

Digital cameras have always existed.

They have never heard anyone actually "ring it up" on a cash register.

The US has always been a Prozac nation.

They have rarely mailed anything using a stamp.

The World Wide Web has been an online tool since they were born.

Starbucks has always been around the corner.

The European Union has always existed.

There has always been only one Germany.

Computers have never lacked a CD-ROM disk drive.

Nelson Mandela has always

been free and a force in South Africa.

We have always been mapping the human genome.

They never "rolled down" a car window.

They have always had a chance to do community service with local and federal programs to earn money for college.

GPS satellite navigation systems have always been available.

Bar codes have always been on everything.

They never twisted the coiled handset wire aimlessly around their wrists while chatting on the phone

Network television has always struggled to keep up with cable.

Bad behavior has always been getting captured on amateur videos.

Lenin's name has never been on a major city in Russia.

Computers have always suffered from viruses.

Voicemail has always been available.

They have always been able to read books on an electronic screen.

Everyone has always known what the evening news was before the Evening News came on.

Margaret Thatcher has always been a former prime minister.

They are always texting 1 n other.

They have always been able to watch wars and revolutions live on television.

Source: Beloit College Mindset lists for the graduating classes of 2008 through 2014. http://www.beloit.edu/mindset/

What Skills Do We Need?

Organizations must understand the characteristics of the newest generation knocking on recruiters' doors. But, employers must also anticipate the skills which will be needed in the coming decade. The objective is to match new hires with required skills.
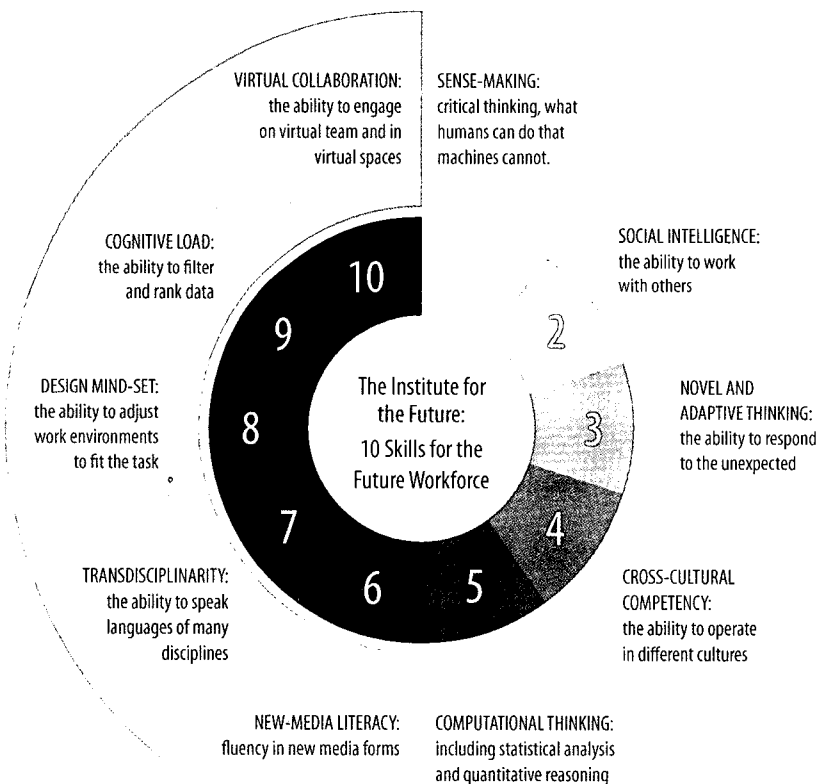
"WE ARE CURRENTLY PREPARING STUDENTS FOR JOBS THAT DON'T YET EXIST . . . USING TECHNOLOGIES THAT HAVEN'T YET BEEN INVENTED . . . IN ORDER TO SOLVE PROBLEMS WE DON'T EVEN KNOW ARE PROBLEMS YET."

RICHARD RILEY, FORMER SECRETARY OF EDUCATION

While it might be impossible to identify specific new jobs—such forecasts often fail—several emerging trends are likely to drive the demand for new skills. In 2011, the Institute for the Future (IFTF), a strategic research group based in Silicon Valley, looked at six such drivers:

- lengthened lifespans
- the rise of smart machines that will augment human abilities
- the rise of sensors, processing power, and data

- new multimedia technologies and communication tools
- crowdsourcing and other tools that are redefining scale
- an increasingly globalized and connected world

With these in mind, IFTF identified 10 key skills new workers will have to bring into the workplace. The critical question is whether recruiters are looking for these skills in today's new hires:

VIRTUAL COLLABORATION: the ability to engage on virtual team and in virtual spaces

SENSE-MAKING: critical thinking, what humans can do that machines cannot.

COGNITIVE LOAD: the ability to filter and rank data

SOCIAL INTELLIGENCE: the ability to work with others

DESIGN MIND-SET: the ability to adjust work environments to fit the task

NOVEL AND ADAPTIVE THINKING: the ability to respond to the unexpected

The Institute for the Future: 10 Skills for the Future Workforce

TRANSDISCIPLINARITY: the ability to speak languages of many disciplines

CROSS-CULTURAL COMPETENCY: the ability to operate in different cultures

NEW-MEDIA LITERACY: fluency in new media forms

COMPUTATIONAL THINKING: including statistical analysis and quantitative reasoning

Introduction

How will the explosion of information and communication technologies in the marketplace affect employee productivity and expectations for technological devices and information systems in the workplace?
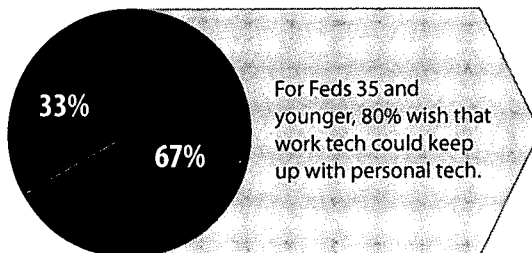

Key Takeaway: Younger workers don't demand the latest technology so much as access to the tools that they see as necessary to help them fulfill their job responsibilities and the organization's mission.

THE TREND: There has been exponential growth in the development and adoption of powerful new information and communication tools over the past two decades. That growth shows no signs of slowing. The rapid adoption of mobile technologies such as smartphones and tablets, and the use of social media platforms (such as Facebook and Twitter), powerhouse search tools, and massive online information repositories are changing how we conduct almost all areas of our lives.

Mobile technologies, in particular, are blurring the borders between work and personal worlds. Americans increasingly access e-mail via mobile devices, rather than via web-based applications. A recent study by comScore, for example, examined patterns in US consumers' e-mail behaviors and found that web-based access to programs like Gmail, Yahoo! Mail, and Hotmail have declined significantly, while the use of mobile clients like the iPhone, Blackberry, and Android to access them has surged, marking an apparent paradigmatic shift in how digital consumers communicate.[3,4] Some 70.1 million mobile users in the United States accessed e-mail on their devices in
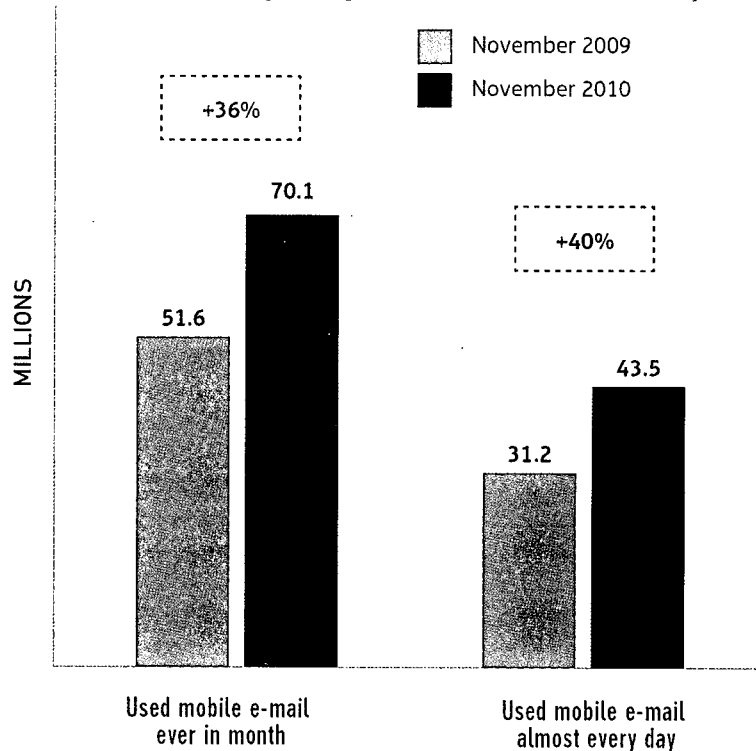
Attitudes and Practices of the Future Workforce

33%

67%

For Feds 35 and younger, 80% wish that work tech could keep up with personal tech.

The Growth of Mobile E-Mail in the United States
(3 month average ending November 2010 vs. November 2009)[5]

November 2010, an increase of 36-percent from the previous year.

The market for mobile devices is driven in large part by the usefulness of contact lists and applications, or "apps," that help make consumers' personal and professional lives more efficient and productive.

Smartphone users and the companies they work for report that use of mobile apps such as those used for mobile teamwork, rapid response, and project coordination significantly increases both hourly productivity and the number of hours worked beyond the normal workday or workplace.[6, 7]

The growth of mobile tools has driven—and has been driven in part by—social media usage. Almost 90-percent of internet-using US 18- to 24-year-olds have social media accounts, with the share of teenagers and 25- to 34-year-olds nearly as high, at approximately
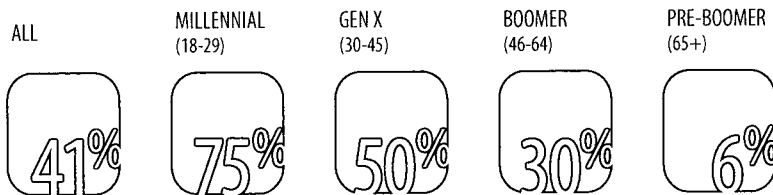
**Millennials Are Active
Social Media Participants**

DO YOU HAVE A PROFILE ON A SOCIAL NETWORKING SITE?

ALL	MILLENNIAL (18-29)	GEN X (30-45)	BOOMER (46-64)	PRE-BOOMER (65+)
41%	75%	50%	30%	6%

SOURCE: MILLENIER.COM[9]
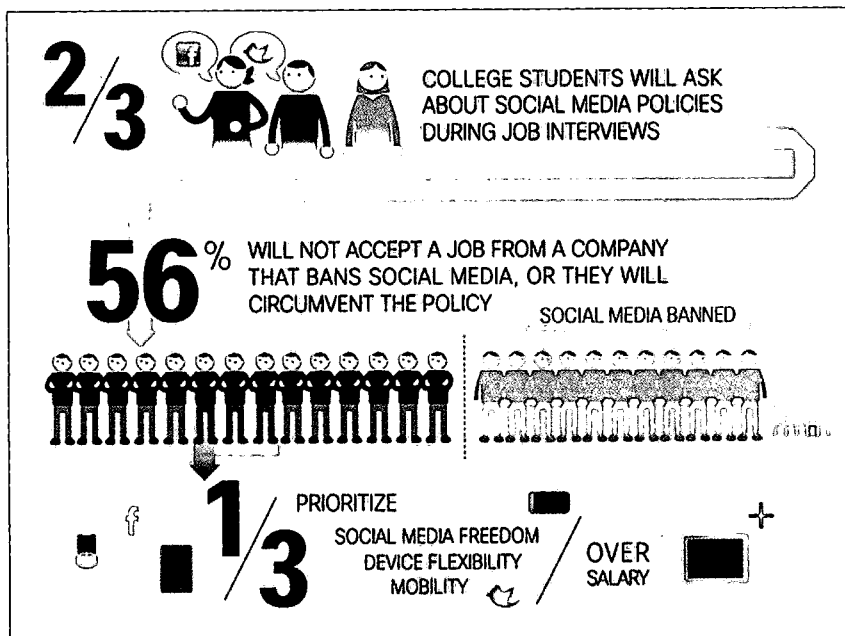
IN A RECENT SURVEY,

55%
of smartphone users stated that losing their contact list would be the single biggest loss if their smartphone were no longer available to them.

24%
considered it worth $1,000 or more to avoid the troubles of replacing their contact list information.

83-percent.[8] Social media is seen by these young people as a means of "curating" their online identity and actively managing their image.

It is the Millennial generation that is most experienced with these new tools and uses. Digital natives who have never known life without ubiquitous computing, Millennials blend their real and online lives more easily than any older generation, and

Social Media Requirements of Young Workers,
(Cisco's 2011 Connected World Technology Report, Chapter 2)

2/3 COLLEGE STUDENTS WILL ASK ABOUT SOCIAL MEDIA POLICIES DURING JOB INTERVIEWS

56% WILL NOT ACCEPT A JOB FROM A COMPANY THAT BANS SOCIAL MEDIA, OR THEY WILL CIRCUMVENT THE POLICY SOCIAL MEDIA BANNED

1/3 PRIORITIZE SOCIAL MEDIA FREEDOM DEVICE FLEXIBILITY MOBILITY / OVER SALARY

"I KNOW YOU HAVE SECURITY CONCERNS YOU NEED TO DEAL WITH, BUT IF YOU DON'T FIND SOME WAY TO ADJUST TO THE WAY THE WORLD IS CHANGING AROUND YOU, BY THE TIME WE REACH THE END OF THIS DECADE AND YOU TRY TO RECRUIT SOMEONE, IT WILL BE LIKE ASKING THEM TO JOIN A MONASTERY."

SILICON VALLEY TECHNOLOGIST INTERVIEWED
FOR THIS PROJECT

"I HAVE MY LIFE, AND PART OF THAT IS ONLINE. I CHOOSE WHICH PARTS I SHARE AND WHICH PARTS I DON'T. IT'S A CURATED LIFE."

A YOUNG WORKER INTERVIEWED
FOR THIS PROJECT

they appear unwilling to forego that practice at work. Over half of 16- to 22-year-olds said they would rather give up their sense of smell than give up their technology.[10]

Some argue that a generation that has grown up around keyboards and screens is far less concerned about notions of privacy—or a separation of public and personal lives—that older generations took (and take) for granted.[11] Others point out that those who have grown up with the Internet are sophisticated users, adept at protecting privacy when they want or need to by activating privacy controls, using coded language, and posting fake or misleading information.

Implications for the Future Workforce

Many students and recent graduates interviewed for this project argued that, rather than technology driving the demand for specific tools, it is the job that drives the demand for technologies

and tools. For example, a young public relations professional interviewed for this project complained that her company did not grant her access to social media platforms such as Twitter or Facebook, despite clear evidence that the public relations industry benefits greatly from the use of such services. As a result, she did not feel that she was being given the tools that she needed to succeed in her job, and has contemplated leaving her company. This sentiment was echoed by others, who indicated that they would leave an organization whose device/research policies seem to stand in the way of mission accomplishment.

Stories and trends like these suggest a future workforce that will demand access to any and all available research sources that are necessary to help them work efficiently and effectively. This means that they will demand access to online research tools and job-specific mobile devices/applications, in addition to the

Workers will increasingly choose jobs that allow them access to the tools and technologies—such as mobile devices and social media tools—they feel are necessary to do their jobs most productively.

Attitudes and Practices of the Future Workforce

"ACCESS TO SOCIAL MEDIA AND TECHNOLOGY FREEDOM OF CHOICE WILL BECOME MAKE-OR-BREAK BENEFITS FOR YOUNGER WORKERS.... HR ORGANIZATIONS NEED TO ACCOUNT FOR THESE FACTORS IN CORPORATE CULTURE AND POLICY TO RETAIN A COMPETITIVE EDGE. ENTERPRISES SHOULD DEFINE A REALISTIC COMPROMISE BETWEEN THE DESIRES OF EMPLOYEES TO SHARE AND THE BUSINESS REQUIREMENTS OF MAINTAINING IT SECURITY, DATA PRIVACY, AND ASSET PROTECTION."

SENIOR VICE PRESIDENT FOR THE SECURITY
GROUP AT CISCO[12]

more traditional human subject-matter experts and paper-based research sources they believe are necessary for them to get their jobs done.

In the event that organizations do not provide access to these resources, many young people indicate that they would likely circumvent such restrictions or leave the organization.

Further, the public relations professional cited above suggested that an organization's decision to resist giving employees the tools they need can have the effect of making the job itself seem unimportant and pro forma. This becomes especially pronounced when organizations refuse to provide company-owned devices while also denying employees the ability to use their personal devices for work-related purposes.

In response to this trend, IT managers and other leaders across the corporate world will continue to wrestle with the tradeoff between the need for internal security and client confidentiality, and the desire of employees to freely access information wherever they might be working.

One particular challenge organizations face is that employees increasingly do not consult corporate IT when they run into technical challenges or barriers, instead preferring to resolve issues by contacting their peers and colleagues. As a result, it may become more difficult for organizations to know which specific technologies employees need or feel they are missing.

Of additional importance is that younger employees' increasing use of and comfort with information and communications technology may create an intergenerational digital divide in which older workers fall further and further behind with regard to the effective use of new technology. Reverse

Tech-savvy workers are increasingly tempted to handle computer challenges without consulting the organization's IT staff.

Two-way mentoring programs might help bridge an intergenerational digital divide.

Misbegotten Social Media Usage [15]

EMPLOYEE TWEET	CORPORATE RESPONSE
CNN Senior Middle East editor Octavia Nasr (GenX): "Sad to hear of the passing of Sayyed Mohammad Hussein Fadlallah. One of Hezbollah's giants I respect a lot."	CNN fired Nasr over the tweet because Fadlallah was regarded as "anti-American and linked to bombings that killed more than 260 Americans."
New hire Connor Riley (Millennial) : "Cisco just offered me a job! Now I have to weigh the utility of a fatty paycheck against the daily commute to San Jose and hating the work."	The new hire's job offer was rescinded after a Cisco Channel Partner saw the tweet and alerted Cisco's hiring manager.

mentoring programs—in which younger employees help older workers master the technology that is critical to the workplace—could mitigate the effects of this intergenerational divide.

Finally, the desire of many Americans to actively manage or "curate" their online personas is not necessarily the same as "oversharing." In fact, recent research suggests that younger generations are more careful than older generations when it comes to guarding their online identities from strangers.[13,14] Ill-conceived online behavior is hardly the exclusive province of the young—the table below offers two examples of career-altering online missteps by people in two different generations. Because the reputational risks associated with such behavior are not just personal but also organizational, organizations should consider offering training to all generations of workers to help them better understand and manage the privacy of their online activity.

How Organizations Might Address the Implications of This Challenge

Following are several examples of interventions that organizations are implementing to proactively and securely meet the perceived technology demands of their workforce:

Bring Your Own Device (BYOD) Policies: The high cost of providing workers with mobile devices, employee demands for the latest technology, and recent trends in which new IT emerges on the consumer market before spreading to business are all reasons why many organizations are allowing employees to use personal devices for work. According to a recent study by Avanade, approximately 60-percent of US

Attitudes and Practices of the Future Workforce

companies are adapting their IT infrastructure to accommodate BYOD policies.[16] About half of the companies embracing BYOD require employees to pay for their smartphones and monthly plans, approximately 25-percent use a stipend to encourage participation and help cover costs, and approximately 20-percent allow eligible employees to submit expense claims for mobile services.[17] Allowing employees to use their own equipment to do their work can help organizations—especially resource-strapped, underfinanced organizations—to meet employee desires for mobile technology while minimizing the costs.

Enterprise Apps: Recent studies have shown that employees who surf the Internet or social media sites are more productive than their nonsurfing colleagues.[18] In response to this trend, Salesforce.com introduced Salesforce Chatter, its secure enterprise collaboration application and social development platform. Like other social networking applications, Chatter includes profiles, status updates, feeds, groups, microblogging, mobile apps, and so on. According to a Salesforce-administered survey, companies using Chatter demonstrated a 10-percent increase in productivity, a 25-percent increase in collaboration, and 13-percent decrease in e-mail.[19]

Security Measures: As employees demand and/or introduce a wide range of new mobile devices into the workplace, companies

are struggling to determine how to manage the security risks of allowing mobile access to company e-mail and documents. In addition to the standard password protection placed on mobile devices, most companies continue to grapple with appropriate security management practices. Kimberly-Clark Corporation, for example, remotely erases employee devices if they are lost or stolen. To enable individuals to use their personal cell phones to access work e-mail, Nationwide Mutual Insurance Co. uses software to partition the mobile device's memory, reserving a portion for use only by the corporation.

Social Media Policies: As far back as 2008, online shoe retailer Zappos' CEO Tony Hsieh encouraged his employees to use the Twitter microblogging service for both personal and professional purposes. On a personal level, he felt that increased personal interaction of Zappos employees would lead to better morale, team spirit, and collaboration. On the professional front, Hsieh and Zappos employees use Twitter for tasks like announcing new products and Web site features, getting feedback on company operations, and spreading awareness of their corporate culture to recruit potential employees.[20]

**For more examples of trends in wireless technology in the modern workplace, see**

(b)(3)

How will changing ideas about racial and ethnic diversity affect the workplace?

Key Takeaway: Worker demands for and expectations about diversity will be informed primarily by whether it is necessary to fulfill the mission of the organization.

Millennials in the United States are the most racially and culturally diverse generation to date and, having experienced growing diversity throughout their upbringing, are more comfortable with it than older generations.[21] They represent a third of all minorities living in the United States and as a group are 18-percent Hispanic, 14-percent African-American, and 5-percent Asian.[22] Statistics from high schools, colleges, and universities indicate that racial and ethnic diversity in classrooms has increased significantly over the last 15 to 20 years, and

Millennials are more likely to think that the increasing diversity of the United States as a whole is a positive development for the country. For example, while 61-percent of Millennials say that more people of different races marrying each other is a positive change in America, only 47-percent of Gen Xers and 36-percent of Boomers agree.[23]

The Racial and Ethnic Composition of the United States (1970-2050)[24]
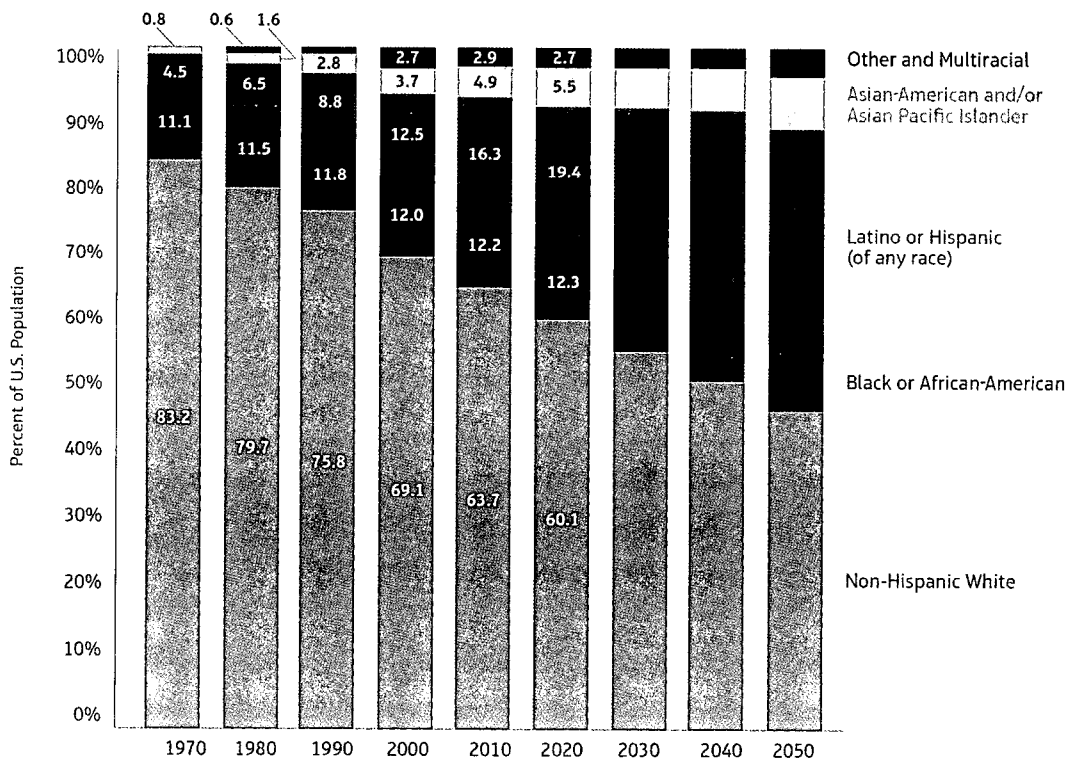
UNCLASSIFIED//FOR OFFICIAL USE ONLY

Americans today often conceive of diversity in ways that go beyond race and ethnicity to include traits such as age, sexual preference, veteran status, disability, weight, and political alignment.[25] Likewise, the justification for diversity initiatives has also shifted in important ways. In the past, diversity within an organization was considered desirable because it indicated that the institution had overcome (or was in the process of overcoming) historical racial barriers that existed within society as a whole. In other words, the motivation behind the drive for diversity in educational institutions and workplaces had to do with extrinsic social goals.

Today, however, diversity is increasingly seen as a benefit to organizations; they and their employees report that diversity is not just an end in itself, but also improves the quality of their work. They say diversity boosts creativity by introducing different ideas and perspectives into the organization. But there are limits to this claim. For example, while ideological and ideational diversity may be important for certain types of knowledge work (e.g., perceiving new possibilities), it may not be considered to be as useful for others (e.g., technical tasks).

Implications for the Future Workforce

Increased diversity will create internal challenges for organizations, including how best to mentor and promote minorities and encourage contributions to corporate life from all member groups. But, because of generational and cultural differences in how employees define, discuss, and view diversity in the workplace, organizations may face conflictual internal dynamics around this topic.

Baby Boomers who lived through the early implementation of the Civil Rights Act of 1964 and the resulting court challenges often view diversity in terms of race or ethnicity. By contrast, many students and younger workers interviewed for this project say they view diversity in much more functional terms and judge diversity in terms of experiences and perspectives. More specifically, while the future workforce will expect employers to achieve some level of diversity, they are likely to support only those initiatives they believe will further the ultimate mission of the organization.

> *Generations define diversity differently, which could cause intergenerational misunderstandings and workplace conflicts.*

"YOU NEED DIFFERENT KINDS OF PEOPLE IN THE ROOM IF YOU'RE TRYING TO SEE NEW THINGS. BUT IF IT'S JUST ABOUT SOLVING A PRE-DEFINED TECHNICAL PROBLEM, DIVERSITY DOESN'T MATTER AS MUCH."

A YOUNG, AFRICAN-AMERICAN ENGINEER INTERVIEWED FOR THIS PROJECT

Attitudes and Practices of the Future Workforce

> *Organizations will need to develop new ways to measure and manage diversity.*

As the notion of diversity expands beyond what author David Hollinger dubbed the "ethno-racial pentagon"[26] (i.e., white, black, brown, yellow, red, or the five ethnic categories provided on most official forms), organizations will face new challenges in gauging the impact of their diversity initiatives. Of particular importance will be new approaches to measuring diversity of perspectives, as well as determining how to process employees who identify themselves as multiracial, refuse to name their race, or demand further specification of their ethnicity.

How Organizations Might Address the Implications of This Challenge

As worker expectations about diversity expand from ethnoracial concerns to ensuring the organization has the right mix of people to fulfill the mission, employers are implementing strategies to identify and recruit the most ideologically and ideationally diverse workforce possible. Current examples of such interventions include:

> **Chief Diversity Officers:** To ensure that they are identifying the widest range of perspectives possible to create new insights and drive business value, companies such as American Express, Aon, Johnson & Johnson, and GE have created Chief Diversity Officer (CDO) positions. While the specific mandate and goals of the CDO vary from organization to organization, Tammy Erickson, president of consulting for the Concours Group research firm, says that the ultimate goal of every CDO is to help individuals within the organization appreciate the alternative viewpoints of other colleagues.[27]

Mirroring Diversity: In order to improve their understanding of their highly diverse customers, high tech firms like Dell Inc. and Xerox attempt to mirror that diversity across their own teams and suppliers. Dell's Global Diversity Council drives diversity initiatives throughout the company, including the implementation of policies and action plans to "ensure that Dell continues to leverage diversity to its competitive advantage."[28] One of the first companies to institute "diversity caucuses" in the 1970s, Xerox today focuses on making sure that its partners and suppliers include minorities, and emphasizes that having "diverse work teams" is not just a moral duty, but a critical component of business success that "facilitates diversity of thought and more innovative ideas."[29]

How will the deepening and broadening of personal international connections affect workplace preferences?

Key Takeaway: Workers with personal experience living or working abroad will want to maintain and exploit those relationships in their careers. In addition, young workers with a strong international orientation may prefer to join organizations willing to offer them opportunities to travel or work abroad.

US students and workers are increasingly orienting themselves toward the outside world. Interest in foreign language study remains relatively strong in the US, and course enrollments in languages other than English reached an all-time high in 2009 in absolute terms, up 6.6-percent over 2006, according to a survey by Modern Language Association.[30] However, there has been a shift in the languages that students are studying: Spanish, French, German, and Italian all experienced low- to mid-single-digit growth in enrollment during that time period, while enrollment in American Sign Language, Japanese, Chinese, and Arabic—all in the top 10 most studied modern languages—experienced high double-digit growth.

US interest in international study is also increasing. During the 2009—10 academic year, more students from US institutions of higher education than ever before received academic credit for foreign study,[31] with numbers representing a five-fold increase from the 1980s. Europe still hosts the largest number of US students, but nontraditional destinations are becoming more popular.[32] For example, there were double-digit increases over the previous year in the number of US students studying in Israel (61-percent increase), India (44-percent increase), and Brazil (12-percent increase).

TOP 12 DESTINATIONS FOR US STUDENTS STUDYING ABROAD

UNITED KINGDOM	MEXICO
ITALY	GERMANY
SPAIN	COSTA RICA
FRANCE	IRELAND
CHINA	JAPAN
AUSTRALIA	GREECE

TOP 12 SOURCES OF FOREIGN STUDENTS STUDYING IN THE US

CHINA	JAPAN
INDIA	VIETNAM
SOUTH KOREA	MEXICO
CANADA	TURKEY
TAIWAN	NEPAL
SAUDI ARABIA	GERMANY

SOURCE: INSTITUTE OF INTERNATIONAL EDUCATION[33]

Attitudes and Practices of the Future Workforce

With growing international exposure, the number of American workers interested in working abroad will increase.

Competition to hire and retain the most qualified global workers will increase.

The United States is not the only country sending students abroad. The large number of foreign students studying in the United States offers American students the opportunity to make lifelong friendships with young people from around the world.

The low cost and ease of international communications—be it via e-mail, voice, or social media—facilitate continuing contact. In the past, those travelling or studying overseas might only have made fleeting acquaintances, but today anyone can easily maintain ongoing connections with friends living abroad.

Increases in language learning, overseas study, and affordable international communications have fostered an emerging workforce that is more exposed and oriented to international experiences than ever before. As young Americans become increasingly comfortable in foreign environments and languages, they are also likely to become more motivated to seek employment abroad.[34] This trend is strongest among younger workers, many of whom believe they can acquire work experiences abroad that they can't get at home because of what they perceive as rigid corporate hierarchies or lack of headroom in many US organizations.

Implications for the Future Workforce

Workers with a strong international orientation may prefer to join organizations—including foreign-owned companies—that offer them opportunities to travel or work abroad. They are also likely to seek out work environments that allow or even encourage them to maintain their international friendships.

In an effort to develop global teams, organizations with international operations will look for employees with global experience, who might find it easier to make a transition to living abroad. In fact, most transnational corporations already expect employees to have such experience.

At a deeper level, however, organizations need to craft a robust international human capital strategy and maximize the return on investment associated with expatriate workers—who incur costs for things like moving, downtime, housing, food, travel, and family expenses. To do this, organizations must pay attention to four critical elements when constructing their expatriate teams: appropriate selection of employees; sufficient training before the assignment; resolution of issues that will affect the employee's adjustment, performance, and commitment; and methods for retaining employees when they return and capitalizing on their international experience.[35] Beyond satisfying tactical objectives, organizations that build international teams along these criteria can use foreign assignments to accomplish strategic objectives like succession planning and leadership development, corporate coordination and control, innovation, and information exchange and dissemination.[36]

How Organizations Might Address the Implications of This Challenge

New employees with meaningful international experiences represent an increasing share of the future workforce and may be loath to give up their international connections or opportunities to live or work abroad in the future. Following are examples of several organizations that are currently experimenting with strategies to address this trend:

Family Assistance Programs: Shell Oil, the global energy and petrochemical company, implemented a number of programs in the 1990s to make it easier for employees to go abroad. These programs included the establishment of primary and secondary schools in locations with heavy concentrations of expatriates, avoiding the need for parents to send their children to boarding school while they are abroad; the development of a Spouse Employment Center to minimize the harm done to the careers of spouses of Shell employees; and the establishment of a global information and advice network to provide support for families considering overseas assignments.

Employee Assistance Programs: Reckitt Benckiser, one of the world's largest packaged consumer goods companies, has developed a culture of global mobility in which they facilitate—even encourage— the movement of managers out of their native countries to give them the opportunity "to grow their careers on a world stage." The company has compensation, bonus, and benefit rules that apply equally to all managers in all markets; it helps foreign students get work permits in the countries where they've been studying; and it has built-in protocols to ease the moving of families (e.g., the company pays tuition for any school the employee chooses for his or her children).[37]

Training and Support Programs: The global professional services firm PricewaterhouseCoopers (PwC) views international assignments as a strategic way to develop its leaders. As part of its Early PwC International Challenge (EPIC) program, the company identifies internationally-oriented employees, trains and follows them for about four years, and then sends them on two-year international assignments. Each EPIC participant has a four-person support team—one peer mentor and one partner in both their home location and their international destination—to help the employee succeed. In addition to providing internationally-oriented employees with an opportunity to work abroad, EPIC benefits PwC by creating a cadre of employees who are sensitized to the strategic risks of a major global operation and the nuanced cultural issues of specific locations where the company operates.[38]

How will changing perceptions of public service impact the future workforce?

Key Takeaway: Commitment to public service is stronger than ever, but the definition of public service is no longer restricted to government jobs. It now includes any work in the service of the public, to include employment with nonprofit and even socially responsible for-profit organizations. Government agencies will find themselves competing ever more fiercely with these types of employers to attract workers interested in public service.

The Millennial generation is frequently described as being notably more "public-service-oriented" than previous generations, including the Baby Boomers and Gen Xers. Over the last several decades, however, the concept of public service in America has broadened to encompass not just government work, but any work "in the service of the public," including employment in both nonprofit and even socially responsible for-profit organizations. This will likely lead to two key outcomes. First, the government will no longer be able to expect to monopolize employees interested in public service. Second, for-profit companies interested in these workers will increasingly need to include public service as part of their mission. In fact, as more corporations do this, they will likely further erode the desire of those with a public service orientation to work for the government.

Times of national crisis, including periods of international conflict or economic recession, frequently increase the eagerness of Americans to get involved in all levels of public service. Historically, public service has taken the form of military or other government service in which people feel that they are having a direct and meaningful impact. An annual Pentagon survey of how likely young people are to join the military showed an 8-percent increase among those likely to enlist immediately after 9/11, an inclination that remained high until 2005. Recruiters noticed a significant uptick in the number of people enlisting out of a sense of patriotism.[39] As the halo effect of 9/11 has diminished, recruiters say they now hear more of a mix of reasons for enlisting, including not only patriotism, but tuition reimbursement and access to services like health care as well.[40]

Attitudes and Practices of the Future Workforce

"[AFTER 9/11] IT WAS ALL ABOUT THE PATRIOTISM. [RECRUITS] DIDN'T CARE ABOUT ANYTHING ELSE. MONEY HAD NOTHING TO DO WITH IT. I SWEAR, I THINK HALF THOSE KIDS WOULD HAVE JOINED IF WE HADN'T PAID THEM....WHEN THEY COME IN NOW, THEY'RE LOOKING AT BENEFITS. THEY'RE NOT TALKING ABOUT THE GI BILL—THEY'RE TALKING ABOUT A SAFETY NET."

ARMY RECRUITER, 2011[41]

"LIKE A LOT OF PEOPLE OF MY GENERATION, I SEE MYSELF MOVING FLUIDLY BACK AND FORTH BETWEEN GOVERNMENT AND THE NONPROFIT SECTOR."

WILSON SCHOOL GRADUATE 2006[43]

Universum Global, a company that surveys young professionals to develop an annual rank of the most desirable employers, believes that—just as 9/11 brought recruits to the military—the weak economy has helped to push government agencies such as the Department of State, FBI, CIA, and NASA into the top ten most attractive organizations for prospective employees.[42]

At the same time, however, government faces increasing competition from the NGO and the private sectors for what may be the most desirable job candidates, the graduates of the leading public policy and public administration schools. Statistics from Princeton University's Wilson School show that in the period 1973 through 2005 22-percent of their graduates took first jobs in some level of government, while slightly more took first jobs in NGOs (23-percent) and the private sector (24-percent). Harvard's Kennedy School of Government showed a similar distribution in figures for 2005, when 25-percent of those who received Masters of Public Policy degrees went into the federal government, another 25-percent entered the non-profit world, and 33-percent went into the private sector. Those who received Masters in Public Administration were even less inclined to join the government (23-percent) and more inclined to enter the private sector (50-percent).[44] A study of a younger cohort (college seniors) performed in support of a 2004 report for New York University's Wagner School suggested even less interest in government service; that study found that "government runs a distant second" to the nonprofit sector as a venue for public service.[45]

To remain attractive to civic-minded employees, government agencies must differentiate themselves from public-oriented nonprofits and similar for-profit companies.

Implications for the Future Workforce

With a broader definition of public service, the next generation of civic-minded workers will continue to seek rewarding jobs for the greater good, not just with the government, but *outside* of the public sector. In addition, the demand for public sector jobs could fall dramatically with economic recovery or if there is a perception of a reduced national security threat. Government agencies will need to revise their recruiting strategies to remain competitive with emerging public service sectors. Specifically, government organizations will need to show how their work is unique and different from what nonprofits and public-oriented, private-sector companies are doing.

Private organizations will increasingly position themselves as creating public benefits through their work, further eroding the monopoly that the public sector has traditionally had on people who wish to serve the public interest. New workers likely will be attracted to private companies whose daily operations incorporate some element of public service, such as:

Corporate-sponsored Volunteerism: The benefits of an employee volunteer program are many, and building one that is integrated with strategic business objectives and core competencies creates a meaningful and sustainable program. Companies are increasingly offering skills-based volunteer opportunities to employees. In fact, according to a DeLoitte report, corporate managers report that top priorities when selecting workplace volunteer opportunities include the potential to alleviate a social issue (36-percent), and to help the nonprofit function more effectively (31-percent) and serve more clients (31-percent).[46]

Corporate Social Responsibility (CSR) Initiatives: CSR refers to the ways in which companies attempt to account for the social and environmental impact created by their businesses. CSR initiatives can include policies that integrate responsible practices into daily business operations, and reporting on progress made toward implementing these practices. These reports now typically address issues including corporate governance and ethics, employee recruitment and training, purchasing and supply chain policies, and energy and environmental impact.

An increasing number of US workers are also entering the burgeoning field of social enterprise. A social enterprise uses earned revenue to create social and economic benefit for a given community (e.g., delivery of basic services like education, water, and electricity, along with the creation of jobs and supporting infrastructure). Social enterprises typically operate alone (i.e., as a private-sector or nonprofit business) or as a significant part of a nonprofit's mixed revenue stream (which also includes philanthropic and government subsidies). Unlike traditional private companies, social enterprises attempt to confront social needs directly through their products and services rather than indirectly through socially responsible business practices such as corporate philanthropy, equitable wages, and environmentally friendly operations. The interest in working for social enterprises stems from their important ability to tackle economic and social challenges that neither public agencies nor for-profit enterprises can address effectively.

Attitudes and Practices of the Future Workforce

HOW ORGANIZATIONS MIGHT ADDRESS THE IMPLICATIONS OF THIS CHALLENGE

As the workforce conception of public service broadens further, US workers with a strong desire to serve the public good will be most attracted to organizations that have a well-articulated and action-oriented commitment to public service. Following are ways in which organizations are taking advantage of these trends:

Volunteerism: Since its founding, software vendor Salesforce.com has sponsored a program called the "1-1-1 Program," which commits the company to donating one percent of its resources, including time, product, and equity, "to support organizations that are working to make our world a better place." As part of the program, employees are given six paid days of volunteer time to use over the course of a year; nonprofits receive donated or discounted Salesforce Customer Relationship Management licenses so they can increase their operating effectiveness; and the Foundation offers one percent of founding stock to grants focused on technology innovation in nonprofits and youth development programs. To date, more than 200,000 hours of volunteer time have been donated, 8,000 nonprofits in 70 countries are benefiting from Salesforce.com product licenses, and nearly $20 million in grants have been awarded.

Responsible Programs: Whole Foods Markets, a grocer, advocates for "conscious business" that not only serves the profit margin but also helps others, strives for excellence, fulfills a higher purpose, and changes and improves the world. Its CEO, John Mackey, argues that successful businesses must have a meaning and a "deeper purpose."[47] Increasingly, many corporations are trying to articulate their value propositions in terms that exceed the delivery of shareholder profit.

What sorts of workspaces will those who value a "flat" organizational structure demand?

Key Takeaway: As a result of the growth in cooperative/collaborative education and the growing ease with which people can access key influencers and decisionmakers via social media, employees increasingly expect flatter organizations, iterative approaches to product development, and open workspaces—even where these may not contribute to the organization's mission.

The explosive growth in the use of the Internet and social media over the past decade has opened up remarkable new means for almost anyone to access important decisionmakers and senior leaders. This has driven Millennials to expect easy access to people in authority, whether corporate executives or subject-matter experts. According to comScore, a private research firm that measures Web usage, social networking now accounts for nearly one of every five minutes spent online around the world.[48] In fact, in June 2011, time spent on social networking sites overtook time spent on Web portals for the first time.[49] Facebook, by far the most popular social networking Web site in the United States, drew 159 million unique visitors from the United States in October 2011, about 73-percent of the total US Internet population. That same month, Twitter and LinkedIn, two other very popular social media sites in the United States, reached 37 million and 26 million unique visitors, respectively.[50]

Because these websites enable Internet users to contact and interact directly with friends and peers, as well as rock stars and presidents,[51] employees increasingly expect to have continuous access to social networking tools and other (digital and nondigital) means for engaging with company decisionmakers and with experts in any given field of interest. An early indication of this trend is highlighted in the 2011 ECAR National Study of Undergraduate Students and Information Technology, in which 66-percent of undergraduates reported having used smartphones to e-mail professors, and 19-percent said they texted their professors.[52] Similar trends are occurring in high schools, forcing some school districts to wrestle with whether they need to set limits on teacher-student interactions via social media.[53]

The rise of the social network-empowered worker comes as firms increasingly rely on knowledge and innovation to boost their productivity and global competitiveness. Conventional wisdom suggests that a flatter and less hierarchical management structure is most useful when creativity and innovation are encouraged. Millennials have started to make the connection between brainstorming, innovation, and open, flexible and collaborative workspaces, and are now coming to expect these spaces and work styles to be the norm.[54]

Similarly, social networking and open source software development have led to new ways of thinking about product development. Increasingly, products and ideas are developed incrementally, through frequent iterations with both internal and external audiences and cross-functional teams. Each step in the process elicits feedback that can be used to improve the idea or product. Examples of this methodology include journalists releasing incomplete news stories and updating them as new information becomes available, and digital products being released quickly and later updated with new firmware and patches.

Implications for the Future Workforce

Business publications are touting the value of collaboration, brainstorming, and innovative work methods, and companies are taking note, creating collaborative tools and work environments and There are two broad approaches to creating workspaces, either designing open floor plans for quiet work and installing private spaces at the periphery for small-group work, as has been done at the Algorithms, Machines, and People (AMP) Lab at University of California, Berkeley, or, as seems to be the broader trend, installing flexible "pods" that support team collaboration and inspire open thinking, with a reduced number of offices or cubicles for quiet work. Under both approaches, electronic whiteboards and teleconferences designed to share ideas across locations are growing in popularity. These new office environments put corporate executives in the same spaces as first-year employees, providing more immediate access to managers.
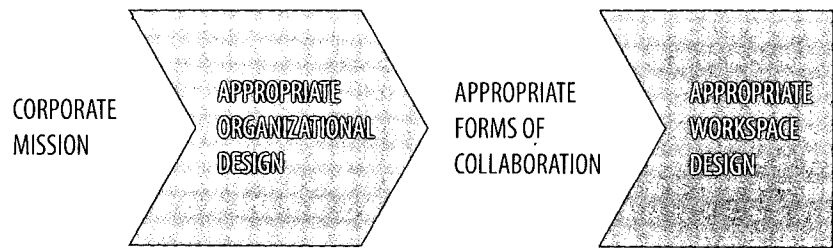
Collaborative workspaces are a wave of the future. But there is no such thing as one-size-fits-all design.

"WHILE THERE IS LIKELY TO BE A BENEFIT OF WORKING CLOSE TO OTHER PEOPLE, THERE WILL ALSO BE A SIGNIFICANT IMPACT ON AN EMPLOYEE'S ABILITY TO FOCUS THAT HAS TO BE WEIGHED AND STUDIED."

ASSOCIATE PROFESSOR OF NEUROSCIENCE
INTERVIEWED FOR THIS PROJECT

CORPORATE MISSION → APPROPRIATE ORGANIZATIONAL DESIGN → APPROPRIATE FORMS OF COLLABORATION → APPROPRIATE WORKSPACE DESIGN

Attitudes and Practices of the Future Workforce

> *Workers and organizations will need new skills and work processes to work most effectively in collaborative spaces.*

The demand for such collaborative and "open" working environments is not about the space per se, but rather the kind of organization employees expect. Designing an open floor plan is pointless if the organization remains hierarchical: the space itself will not create a culture of sharing and collaboration. Neuroscientists and organizational design experts recommend that workspaces should be designed to fulfill the specific mission of the organization and say that improper workspace design and utilization can prove distracting to employees.[55,56] In other words, there is no such thing as a one-size-fits-all workspace—the ways in which software developers collaborate differ from how graphic designers, finance professionals, or academics choose to work together—and one that is designed without the mission and the process firmly in mind could destroy productivity rather than enhance it.[57]

In designing collaborative processes and workspaces, organizations must tackle a number of fundamental decisions, including how to minimize distractions; how to ensure that the organization is neither too stovepiped nor unfocused; how to define roles and responsibilities clearly to all employees; and how to interact productively when conflicting priorities emerge.

If older workers struggle to adapt to newer collaborative work processes, organizations may find that they need to increase training for these employees and/or customize work processes to maximize the effectiveness and efficiency of all generations in the workplace. If training does not work, managers will need to identify the root cause of employees' resistance, looking at their personal values, work styles, and priorities.

While younger workers may prefer flatter organizations, the reality is that flat organizations simply do function well on a large scale, as even champions of flatness and openness like Google, Netflix, and Facebook have discovered.[58] Growth increases organizational complexity. One rapidly growing technology company visited for this project found that, as it expanded, it had to add some more traditional bureaucratic trappings—such as a Department of Human Resources and a Chief Financial Officer—to what had been a loosely organized team of software developers. As organizations begin to implement rigid policies and bureaucratic procedures to streamline expanded operations, they risk driving away employees who were initially attracted to the smaller, flatter organization.

The Design Collaboration Space at Citrix[60]

How Organizations Might Address the Implications of This Challenge

Organizations everywhere are grappling with the need to balance employee desire for iterative, flat, collaborative approaches with the imperative to design workspaces and structures that support the mission. Several large companies have had some success in meeting this challenge:

> The corporate mission of Citrix, a Silicon Valley-based manufacturer of virtualization and cloud software, is to "create a world where people can work and play from anywhere."[59] While they focus primarily on developing virtual collaboration spaces, they recognized that they also needed to design physical spaces in which cross-functional teams can work together on new products. Citrix

developed a 2,000-square- foot open, sunlit meeting space in which all of the furniture is on wheels and can be configured to meet specific teams' requirements. In the words of the Vice President of Product Design, "We needed to create a shift in behaviors, and realized this would be best achieved by having people live the change, not just being told about it. The space facilitates this."

Recent research by professors Anne-Laure Fayard and John Weeks shows that a balance of proximity, privacy, and permission encourages effective organizational interactions. The researchers cite Xerox Corporation as having combined all three elements in creating a virtual work environment established via video links between EuroPARC (its R&D center in Cambridge, England) and Xerox PARC (its original Palo Alto Research Center). Designed to foster conversation between research collaborators and colleagues, the links initially were always on and available. The company quickly determined, however, that "if they wanted the scientists to use the technology, they would have to provide virtual doors that people could close at will. They ultimately afforded three levels of privacy: A video link could be on, off, or set at an intermediate status—like a half-open door that allows people in an office to glance out and those outside to look in for permission to visit." By providing these levels of privacy, the links ultimately increased collaborators' awareness of one another and increased the opportunities for chance conversations and collaboration.[61]

Companies are developing a variety of methods to stem potential distractions from collaborative workspaces. For example, Atos, an international information technology services company, decided to phase out e-mails because its chief executive, Thierry Breton, considers 90-percent of them a waste of time. According to news accounts, he preferred that employees spend more time talking to each other, whether in person or on the phone, or switch to "real time" messaging tools, like text messages or social media.[62] And while the AMP Lab at University of California, Berkeley (described earlier in this paper) is designed as an open floor plan to encourage collaboration, it has a no-talking policy in the open areas and confines discussions to private rooms.

26

How will changing expectations about retirement remake intergenerational dynamics in the workplace?

Key Takeaway: The recent financial crisis has delayed retirement for some workers, potentially blocking the advancement of younger employees. This is creating challenges for how organizations motivate and retain younger and middle generations of workers.

The number of Americans choosing to delay retirement has increased significantly in recent years.[63] There are multiple long- and short-term trends that are driving their decision to continue working. Volatility and lackluster returns in the stock market have left many older workers with retirement portfolios that are insufficiently funded. This, combined with the ongoing collapse in the prices of homes,[64] which remain the single most important financial asset for most Americans, makes many workers of retirement age now believe they simply can't afford to stop working.

The overall savings rate of US households was quite low for some time, and the financial crisis of 2008-2009 exacerbated the financial vulnerability of older workers.[65] From its peak in the spring of 2007, the net wealth of US households fell by about $16.4 trillion, as a broad swath of pension fund holdings and conventional equities lost value. Today, US household wealth remains some $7.7 trillion lower than it was before the recession. Baby Boomers who are now desperately trying to build a nest egg for retirement confront a cruel conundrum—they can find only meager yields—currently near zero—in the

safety of bonds, and they are frightened by the volatility of the potentially more profitable equity markets. Continuing to work seems the only prudent course for many.

An August/September survey from Wells Fargo & Co. found that 74-percent of respondents said they expect to work in the retirement years. Of those, 39-percent said they will do so out of necessity, while 35-percent said they will work because they want to.[66] Of those surveyed, 25-percent believe they will not be able to retire until they turn eighty due to insufficient savings.

The nature of retirement is changing as well. The 12th Annual Transamerica Retirement Survey, published in 2011, polled 4,080 US workers of all ages on their attitudes and expectations about retirement, and found that 54-percent intend to work in their retirement.[67] "The new retirement is working," explained Catherine Collinson, president of the Transamerica Center for Retirement Studies, a nonprofit affiliate of Transamerica Life Insurance Company. Moreover, only 34-percent of workers surveyed indicated their household retirement accounts exceeded $100,000.

External Factors Affecting the Future Workforce

"I THINK I'LL JUST NEVER RETIRE. THAT WOULD SOLVE ANY PENSION ISSUES. WORK UNTIL I DIE. YES, I'M HAPPY WITH THAT #ILIKEWHATIDO"

TWITTER POSTING

"BEGINNING TO THINK I'M NEVER GOING TO BE ALLOWED TO RETIRE. WHEN I STARTED WORK, MY COMPULSORY RETIRE-BY AGE WAS 60. IT'S NOW VOLUNTARY 67!"

TWITTER POSTING

Implications for the Future Workforce

Barring rapid corporate growth, as Baby Boomers delay retirement, fewer opportunities will exist for advancement by younger employees. This creates both challenges and opportunities for employers.

Millennials will enter at the bottom of the organizational pyramid with fewer obvious avenues for getting ahead, and they will not get promotions as quickly as expected. This could drive greater intergenerational rivalries and tensions within the workplace. However, delayed retirements will also create an opportunity for organizations—particularly those that rely on accumulated institutional knowledge—to better prepare for the "brain drain" challenges that will be created when large portions of their workforce eventually leave.

Conversely, however, organizations that are embracing new technologies to flatten their internal hierarchies and to link up more closely with clients or customers may find friction if the younger workers who are more at ease with new technologies feel themselves or the company held back by their technologically less fluent older colleagues. The risk is that employee loyalty and motivation will decline among younger workers as professional advancement stalls and uncertainty over their own retirement grows, a trend which may trigger more employee turnover. Employers can expect to see increased job-hopping among Millennials, and mid-career workers may move towards "reinventing" themselves, abandoning their old organizations and moving into other professions. Undoubtedly, many will strike out on their own to become individual consultants or entrepreneurs.

Indeed, as noted recently by Silicon Valley news site TechCrunch, "over the past couple of years, there has been a huge increase in the number of workers who operate as some sort of independent, free-agent contractor or consultant. Though the numbers vary greatly, the consensus seems to be around twenty percent of the US workforce fits that description now, and their numbers are growing (some estimates project them to be up to fifty percent by 2020)."[68]

Younger workers might be less loyal to their employers and more open to career moves.

28

Technology is a driving factor of this process, as it is lowering the transaction costs associated with outsourcing. While back-office jobs were the first to be outsourced, more and more functions may be contracted out in the future. (Peter Drucker once observed that the only corporate function which cannot be outsourced is strategy: deciding what business you want to be in and how you want to go to market.)[69] For example, one technologist we interviewed suggested that the most talented and creative workers don't want a permanent relationship with an employer but instead prefer "serial gigs." He argued that the main factor holding back a rapid increase in that kind of arrangement is the need for health insurance; he predicts that if portable health insurance becomes a reality in the United States, the trend away from permanent employee-employer relationships will accelerate dramatically.

For highly talented workers, a flexible relationship with employers is likely to be seen as a boon, so employers wishing to "wholly own" an employee will need to offer special rewards in order to entice them to give up their freedom to move from gig to gig.

At the same time, as serial giggers advance in their careers and develop more specialized skills—which is to say that they lose some of their flexibility—they may wish to develop more traditional, stable relations with their employers. Organizations that offer such stability may find themselves attracting mainly people who don't see themselves as flexible or want flexibility, which could be detrimental if those organizations need flexible thinkers and workers.

HOW ORGANIZATIONS MIGHT ADDRESS THE IMPLICATIONS OF THIS CHALLENGE

As the economy recovers from the recent financial crisis, corporations that experienced a freeze in their hierarchies are attempting to address some of the potential consequences, including increased risk of intergenerational conflict, and decreased loyalty and expectations of career advancement among younger workers. The following are current examples of interventions designed to address some of these issues:

- German software giant SAP AG has developed a formal "semi-retirement" program whereby older employees ease into retirement by working progressively fewer hours. This not only smoothes the process of knowledge transfer from older to emerging cohorts of employees, but also opens up the hierarchy so that younger employees have greater opportunity for advancement. Retired employees continue to engage with current employees through a program called net45plus, which arranges both formal and casual events to discuss current work at SAP or the personal implications of retirement.[70]

More workers might be willing to change jobs if they had portable health insurance.

Organizations might have to pay a premium for workers willing to stay for a career, rather than attracting workers looking only for job stability.

- To increase employee retention, several major corporations (e.g., Nestlé, Coca-Cola, and IBM) are attempting to formalize their Employee Value Propositions (EVP)[71] and align them with their broader corporate brands. In doing so, organizations clearly define and publicize both their EVP—which helps existing and prospective employees understand what is expected of them and what they can expect from their employers—and their corporate brand, which helps existing and prospective employees understand and thereby live the values of the organization.[72] Alignment of the EVP and corporate brand ultimately helps organizations attract, hire, develop, and retain talent by improving employee engagement and the degree to which employees act on the corporation's values.

- To help "unfreeze" the corporate hierarchy and meet younger employee expectations of advancement, global law firm Orrick, Herrington & Sutcliffe LLP offers a corporate career advancement lattice—rather than a corporate ladder. In lieu of the traditional tenure-based, up-or-out "Partner Track" model, Orrick uses a performance-based model that allows its lawyers to move around the organization and customize their career paths based on professional interests, goals, and life needs. [73]

The Freelancers' Union, founded in 2003 by McArthur "Genius Grant" winner Sara Horowitz, seeks to "promote the needs of the independent workforce through advocacy, education, and services." In 2008 the Union created the Freelancers Insurance Company, in order to provide independent workers with "high-quality, affordable, and portable health insurance." The company now insures approximately 25,000 individuals (information from organization website).

Such cooperatives would further enable workers to pursue careers untethered to the benefits packages provided by traditional employers.

How will the fact that an increasing percentage of college graduates are female affect dynamics in the workplace?

Key Takeaway: Organizations that lack female managers or fail to offer appropriate mentorship programs will struggle to recruit, mentor, and retain young professional women.

Large gains in the educational attainment of women relative to men have contributed significantly to the influx of women into the labor force over the last forty years. Moreover, stagnation in middle-class wages has put a larger premium on the "two paycheck" household, and the growth of services relative to manufacturing jobs in the US economy has brought more women into the workforce.

As the figure below demonstrates, the relative educational achievement of men and women has shifted radically over the last several decades. In 1980, for the first time in history, more women than men earned an Associate's or Bachelor's degree. In 2010, 61-percent of all Americans graduating with an Associate's or Bachelor's degree were female. And recent reports indicate that more women than men are responding to the recession by dropping out of the labor force to get more education and training.[75]

**Associate and Bachelor Degree Achievement by Gender (1970-2020)**[74]
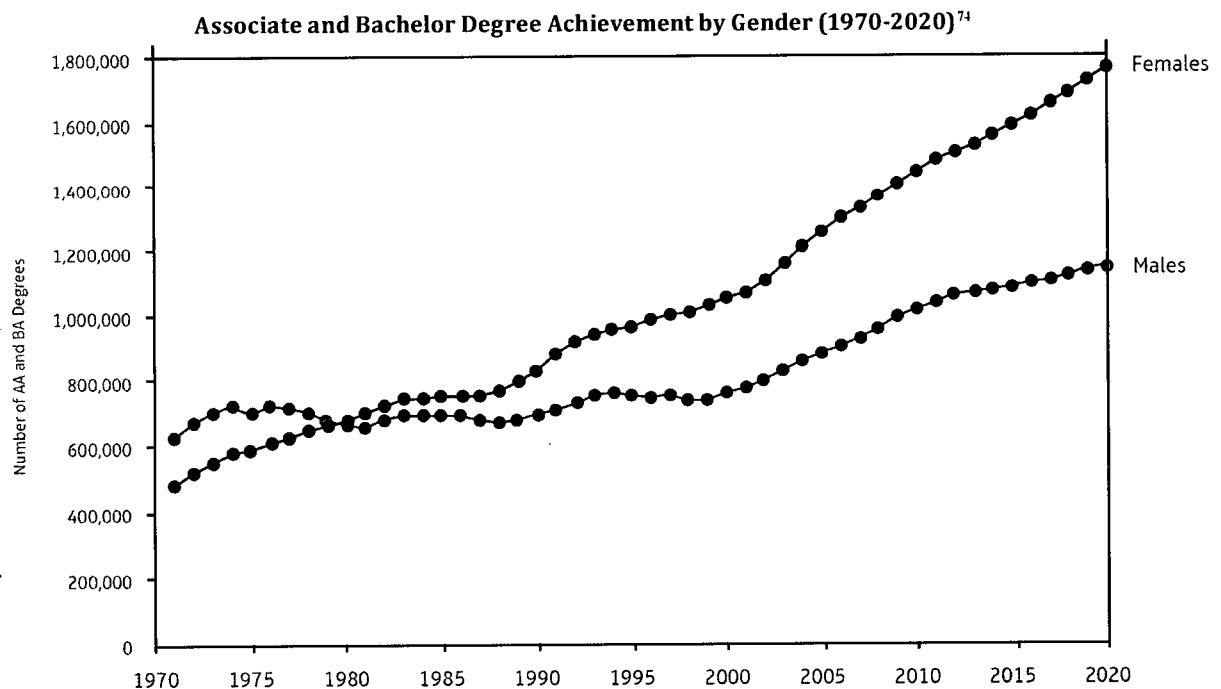
A number of factors help to account for the significant jump in the educational achievement of women. In high school, women tend to achieve higher grade point averages than men, are more likely to take rigorous course loads, and are more likely to graduate.[76] This helps them perform better academically when they start college. Males, by contrast, tend to exhibit lower academic performance at the beginning of college, increasing the likelihood that they will abandon their studies.[77]

Women also seem to hold advantages outside the classroom. They tend to benefit more than men from parental, peer, and teacher encouragement to pursue postsecondary education, and they tend to have strong noncognitive skills, such as organization, attentiveness, and dependability that make them better suited than males for higher educational achievement.[78,79]

In addition to increasing women's likelihood of being accepted to a university, these noncognitive advantages may also lower the stress of transitioning to higher education and into the workforce.

The rising educational attainment of women in recent decades has boosted female participation and value in the labor market and vastly improved job opportunities for women. In 1963, 62-percent of college-educated women in the United States were in the workforce, compared with 46-percent of those with only a high school diploma; in 2009, 80-percent of US women with a college education were in the workforce, compared with 67-percent of those with only a high school diploma and 47-percent of those without one.[80] In total, female participation in the US workforce increased from 38-percent in 1970 to 47-percent in 2009.

Full- and Part-Time Employed Persons by Sex, 1970–2010[81]
Female participation in the US workforce is almost equal to that of males

External Factors Affecting the Future Workforce
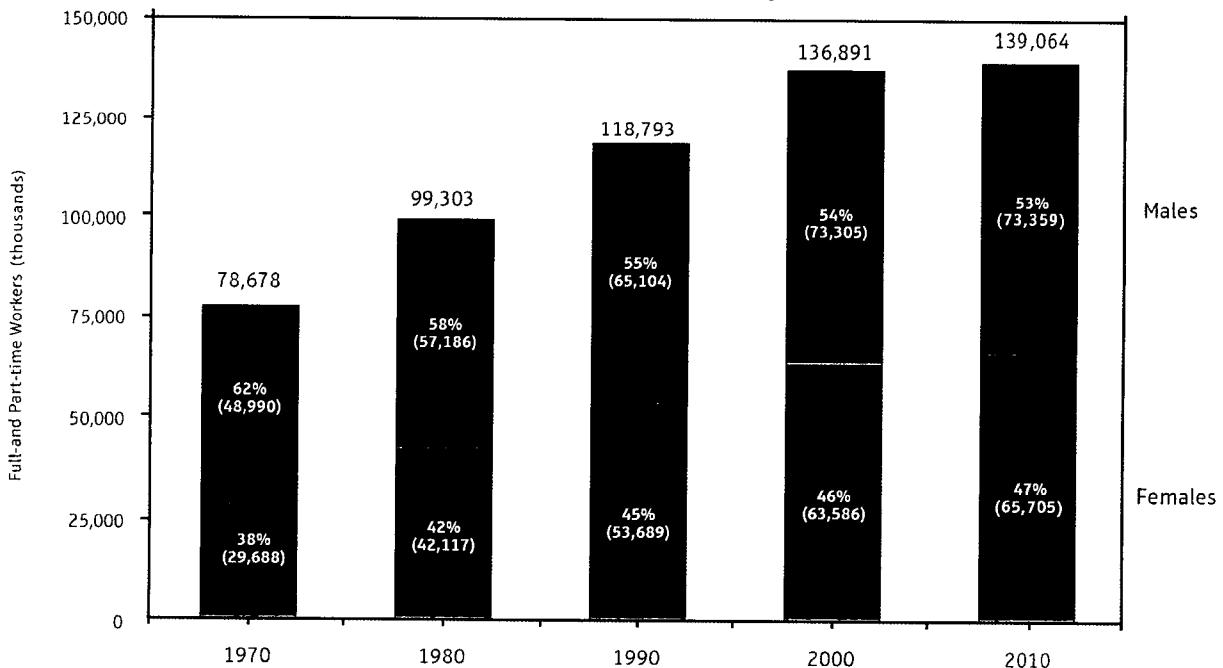
As women become the larger share of the college-educated workforce, they are likely to wield more influence in the workplace. Indeed, statistics demonstrate that women are increasingly filling management positions. According to the Bureau of Labor Statistics, in 2009, women accounted for 51-percent of all people employed in management, professional, and related occupations, somewhat more than their share of total employment (47-percent).[82] However, females currently comprise only 3-percent of top leadership positions in Fortune 500 companies.[83]

Moreover, as technology and services become more important segments of the US economy, surpassing manufacturing and resource extraction (where jobs have traditionally required less schooling), educated workers consistently remain in high demand, and higher education tends to insulate employees from recession and unemployment.

Implications for the Future Workforce

While the changing definition of diversity may be transforming people's attitudes towards race and ethnicity in the workplace, achieving gender balance remains critical to the young workforce. In interviews for this report, both men and women characterized the presence of women in the workplace as necessary for cognitive diversity and a well-functioning work environment. Yet, many expressed concerns about mentorship and work-life balance issues.

Mentoring is often recommended for women at early stages in their career so they can solicit feedback on their leadership techniques and learn how to be more effective within their organization's unique culture. However, the dearth of high-ranking women often leaves young women without female role models. Significantly, this is proving to be the case even in the new high-tech industries which generally are considered to be less hierarchical and tradition-bound. Google, for example, has recently been described as so troubled by the shrinking representation of women, especially at its most senior levels, that it has begun designing self-analytic algorithms to attempt to pinpoint places on the company "career ladder" where women experience particular difficulty.[84]

Achieving gender parity is more important than ever for younger workers.

Female mentors will be in demand...

"TWO YEARS AGO, I MIGHT HAVE SCOFFED AT MENTORING, BUT NOW I THINK IT'S A BIG DEAL AND CRUCIAL FOR GETTING AHEAD."

A 25-YEAR-OLD FEMALE JOURNALIST

...as will family-friendly policies.

"A DIVERSITY OF GEOGRAPHICAL AND BUSINESS UNIT EXPERIENCES IS CRITICAL FOR RISING UP THE CORPORATE HIERARCHY, WHICH ULTIMATELY MEANS THAT ACCESS TO THE MOST SENIOR RANKS OF THE FIRM IS CLOSED OFF TO THOSE WHO ARE...UNABLE TO RELOCATE FREQUENTLY. THIS UNFORTUNATELY INCLUDES WOMEN WHO ARE INTERESTED IN STARTING FAMILIES."

MANAGER, HR STRATEGY, FORTUNE 500 COMPANY
INTERVIEWED FOR THIS PROJECT

Professions that are not "family friendly"—jobs requiring multiple transfers, overseas appointments, late working hours, etc.—will experience additional challenges in recruiting and retaining talented women. During a focus group with Millennials conducted for this study in November 2011, young women were quite interested in whether workplaces were considered female-friendly, and they considered maternity policies to be crucial even if they had no immediate plans to start a family.

The increasing numbers and qualifications of women are leading to the erosion of boundaries between jobs traditionally seen as "male" or "female." This is taking place not only because women are increasingly successful in traditionally "male" professions and careers, but also because men are no longer refusing to take jobs that are traditionally thought of as "female," such as nursing or retail. Traditionally male jobs, such as construction and manufacturing, have been hit disproportionally by recent economic difficulties, forcing men to consider jobs they might once have disdained.[85] The net result is that organizations will have greater flexibility with regard to filling positions.

How Organizations Might Address the Implications of This Challenge

Given the rapid feminization of the available pool of knowledge workers, many organizations are implementing gender diversity and gender-specific programs to mentor and retain young professional women in male-centric professional cultures. The following are current examples of interventions designed to address some of these challenges:

> Companies as different as Ford Motor Company and Glamour Magazine are experimenting with job-sharing, an arrangement in which two workers share a single position, allowing for much greater flexibility in how the work will be executed. While not limited to women, these programs appeal especially to women who wish to balance the demands of a job against outside responsibilities. At Glamour, two women who shared a single sales job ended up winning the "Salesperson of the Year" award.[86]

External Factors Affecting the Future Workforce

34

Many global companies have implemented female sponsorship programs. Unlike mentoring, sponsorship creates relationships between women in which the more senior women will serve as an advisor and career advocate for the younger women in an organization. One clear example of such a program is Time Warner's Breakthrough Leadership Program, which creates sponsorship matches between professional women and holds networking events that help women build skills for proactive career management, become more effective in their current roles, and grow a cross-divisional network of high-potential female leaders.[87]

Several companies have taken steps to help all members of their organization—particularly men—recognize that gender bias exists. AB Volvo, a Swedish builder of large commercial vehicles like trucks, buses and construction equipment, has conducted two broad initiatives as part of its Walk the Talk program.[88] First, the company has provided opportunities for men to participate in facilitated group and individual discussions about gender issues. Second, it has started cross-gender mentoring programs, in which each participant is paired with a female mentor who has been trained in workplace gender issues and who follows the progress of her male mentee throughout his participation in the Walk the Talk program.

Formal mentoring programs are quite common but often are not well managed. As a result, their value is not always clear to participants.[89] To address this issue, many companies—including General Electric, Ogilvy & Mather, and Hewlett-Packard—have begun reverse-mentoring programs" that match older employees with younger workers so that older participants can learn about new technologies like social media while younger employees gain exposure and insight into corporate culture.[90] While these programs generally promote employee loyalty and build cross-generational understanding, they are seen as especially useful for addressing the impact of gender stereotyping and the particular mentoring requirements of young professional women.

How will emerging health challenges affect employees' working relationships with one another, as well as with their managers?

Key Takeaway: Increased medicalization of obesity and mental illnesses and the off-label (and recreational) use of neuroenhancing medications among employees will require organizations to make ethically and legally complicated choices about how to support and integrate workers with such health issues, or risk confronting a shrinking pool of available labor.
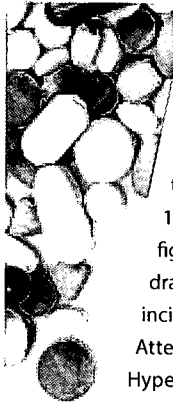
In 2011 about 21 million prescriptions were written in the US to provide stimulants to patients aged 10 through 19, a figure that has risen dramatically as has the incidence of diagnoses Attention Deficit Hyperactivity Disorder (ADHD). An unknown portion of those stimulants are used as so-called "study drugs," taken without prescription to enhance cognitive performance during exam periods and other relatively demanding academic times. Although the National Institute on Drug Abuse estimates that amphetamine use among teens has remained steady or even dropped since the late 1990s, many argue that the aggregate data conceals a large drop in use among the broad population, and a sharp rise of "study drug" use among students in highly competitive high schools and universities who are struggling to juggle challenging academic, athletic, and other activities schedules.

http://www.nytimes.com/interactive/2012/06/10/education/study-drugs-popular-among-high-school-students.html

http://www.cdc.gov/nchs/data/databriefs/db70.htm

http://monitoringthefuture.org/pubs/monographs/mtf-overview2011.pdf

From obesity to diabetes and depression, the incidence of serious medical conditions among young people in the United States has grown over the past several decades. The rate of childhood and teenage obesity has more than tripled since the early 1970s, for instance, and in 2008 more than one-third of children and adolescents in the United States were overweight or obese.[91,92] Obese individuals are at greater risk for endocrine, cardiovascular, gastrointestinal, pulmonary, orthopedic, neurologic, and dermatologic disorders; psychosocial problems such as stigmatization and poor self-esteem; and pre-diabetes, a condition in which blood glucose levels indicate a high risk for developing full-blown diabetes.[93]

Mental illness diagnoses—including attention deficit/hyperactivity disorder (ADHD) and depression—are also growing among young Americans. As of 2007, approximately 9.5-percent of children aged four to seventeen had ever received an ADHD diagnosis, and two-thirds of those with a current diagnosis were receiving pharmacological treatment.[94] In 2008, 2.8 million kids—or 3.5-percent of US children under the age of 18—received stimulant medications, up from 2.9-percent in 1996.[95] Among preschoolers, stimulant use decreased over the study period and did not rise significantly in children aged six to twelve, indicating that the

biggest increase took place within the adolescent population.

Another relatively common psychiatric condition is pediatric major depressive disorder (MDD), which often continues episodically into adulthood. Approximately 3-8-percent of all children are said to suffer from a depressive disorder, with the incidence of MDD during adolescence estimated to range from 15-20-percent, a rate comparable to the lifetime prevalence of MDD found in adult populations.[96,97] Mental health professionals maintain that depression is an under-diagnosed condition.[98]

While stimulant prescriptions for obesity and mental illnesses are on the rise, there is anecdotal evidence pointing to a significant increase in the off-label use of stimulants among young people to gain a competitive edge in school, in athletics, or at work. There are no official statistics on off-label stimulant usage, but the *New York Times* estimated that up to 20-percent of students on college campuses have used either Ritalin or Adderall to gain a competitive edge in their coursework.[99] Last fall, Duke University notified its student body that those found to be using cognitive enhancements such as Adderall or Ritalin without a prescription would be considered in violation of the school's academic guidelines. Stephen Bryan, associate dean of students and director of the Office of Student Conduct, said that Duke University students themselves were the driving force behind the policy

36

WHEN ASKED RECENTLY HOW MANY OF HIS CLASSMATES WERE USING ADDERALL BEFORE FINAL EXAMS IN DECEMBER 2011, A CURRENT SENIOR AT OBERLIN COLLEGE REPLIED CANDIDLY TO ONE OF THE AUTHORS OF THIS REPORT, "JUST ABOUT EVERYONE."

change, which was intended to address the "perception—if not the reality—that Adderall abuse is rampant on campus."[100]

Two reasons are cited for the unauthorized use of neuroenhancing drugs. One is to gain a competitive edge over other students or coworkers. The other is to improve one's own personal performance and achieve one's full potential, regardless of the competitive environment. As one Harvard student (and Adderall user) interviewed for a 2009 *New Yorker* article speculated, "it's often people…who are looking in some way to compensate for activities that are detrimental to their performance.… At Harvard, at least, most people are to some degree realistic about it…. I don't think people who take Adderall are aiming to be the top person in the class. I think they're aiming to be among the best. Or maybe not even among the best. At the most basic level, they aim to do better than they would have otherwise."[101] Another user explained in an article she wrote for the magazine *n+1*, "Adderall Me and Ideal Me were nearly the same person, and I saw no reason not to dabble in my best self."[102] Other students—from various universities—interviewed for this report echoed these sentiments.

Implications for the Future Workforce

As diagnoses of physical and mental health disorders become more commonplace, those afflicted may be excluded from jobs in which they would not be able to fulfill their duties safely and effectively, where they could not physically carry out their work (e.g., a diabetic must eat every four hours, but

the job does not accommodate that), or where a mental disorder is considered a security risk.

Moreover, many organizations will have to face additional operating and regulatory costs. Already, untreated mental illness costs the US $105 billion in lost productivity each year, with US employers footing up to $44 billion of the bill, according to the National Mental Health Association.[103] Firms must also comply with the Americans with Disabilities Act of 1997 (which sets requirements for things like employee assistance programs and accommodations for employees with serious mood disorders). Companies risk legal action from the Equal Employment Opportunity Commission if they can't make their workplace suitable to those with special needs. And insurance premiums will tend to increase in organizations whose workers are in poor physical health and require more medical services.

In addition, as more employees are tempted to use stimulants and "cogniceuticals" to boost their performance as they may have done in college, employers will be forced to choose whether to embrace this trend (at least passively) or actively fight it. This choice will have implications for employee performance and retention. If, for example, an organization bans neurocognitive enhancement, its employees may underperform relative to those elsewhere, and workers

Physical and mental disorders will shrink the labor pool for some professions…

…and raise operating and regulatory costs.

Employers will face complicated legal and ethical choices about hiring and managing employees with medical conditions or who engage in off-label use of prescription drugs.

"LIKE NEVER BEFORE, BUSINESSES DEPEND UPON THE CONSISTENT, SUSTAINABLE MENTAL PERFORMANCE OF THEIR EMPLOYEES. BY ENABLING A HIGHER LEVEL OF PRODUCTIVITY, NEUROTECHNOLOGY REPRESENTS THE NEXT FORM OF COMPETITIVE ADVANTAGE BEYOND INFORMATION TECHNOLOGY."

ZACK LYNCH, EXECUTIVE DIRECTOR, NEUROTECHNOLOGY INDUSTRY ORGANIZATION (NIO)

External Factors Affecting the Future Workforce

who are most interested in taking neuroenhancing drugs could depart for jobs in which they are permitted or encouraged.

How Organizations Might Address the Implications of This Challenge

As mental health diagnoses, rates of obesity and its comorbidities, and off-label use of neuroenhancing medications increase, organizations will be required to make complicated choices about how to manage their workforce and employees facing these conditions. Current examples of interventions designed to address some of these challenges include:

To address sensitive emotional and mental health-related challenges in addition to more standard health care issues, some companies are providing expanded employee assistance programs (EAPs). In addition helping employees navigate physical health, child- and eldercare, relocation, and financial and legal issues, EAPs increasingly include mental health-related counseling and addiction recovery services. For example, the award-winning EAP at Johnson & Johnson features a stress management/resilience program and an interactive mental health

tool that screens for depression, alcohol problems, anxiety, bipolar disorders, eating disorders, and PTSD.[104]

To help drive down health care premiums and create a healthier human asset pool, some companies are using both carrots and sticks to encourage healthy lifestyle choices among employees. For instance, David Siegel, the CEO of CFI Westgate Resorts has led two recent health-related initiatives at his company.[105] In 2002, he announced that all employees would have one year to quit smoking or else face termination. The company supported employees in their efforts to stop by providing nicotine patches and smoking cessation classes. Then in 2008, Siegel launched a company-wide weight-loss contest, in which employees who reached their goals were eligible to win cash prizes or a luxury vacation. During the first year of the contest, some employees lost up to sixty pounds.

To navigate the off-label use of neuroenhancing drugs, organizations could limit their use to employees in job functions most likely to benefit. Two professors from Cambridge University,

Barbara Sahakian and Sharon Morein-Zamir, wrote in *Nature* magazine about the use of mind performance-enhancing drugs by people who aren't suffering from disorders like ADHD or Alzheimer's disease. In particular, the authors state that "in academia, we know that a number of our scientific colleagues in the United States and the United Kingdom already use modafinil to counteract the effects of jetlag, to enhance productivity or mental energy, or to deal with demanding and important intellectual challenges."[106] The authors go on to recommend specific types of jobs—those of soldiers and air traffic controllers, for example—as most appropriate for the use of neuroenhancers.

How will changing family structures affect demand for flexible working conditions?

Key Takeaway: The increased responsibility of middle-aged workers to take care of elderly parents, sometimes in addition to their own children, means that many mid-career employees—especially women and those from more traditional family cultures—will require flexible working arrangements.
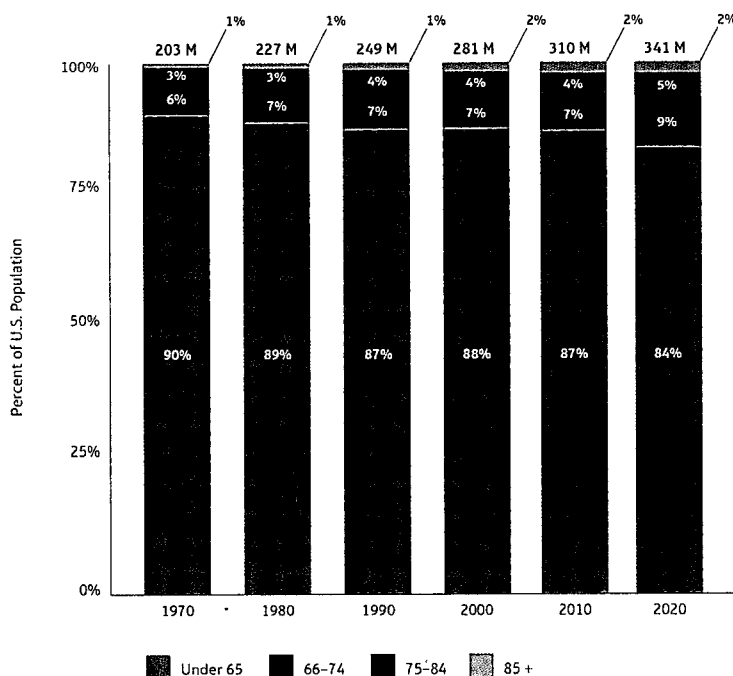
The rapid growth in the cohort of older Americans, when combined with changes in family structures and work lives, has created an increasingly complex interaction between generations when it comes to both child rearing and eldercare. According to the 2010 United States census, 13-percent of the population, or some 40.3 million individuals, was 65 or older. As more Americans live longer and healthier lives, the percentage of the population that is 65 or older will continue to grow.

Significant and sustained increases in life expectancy from those born just before and during World War II will create an environment in which Generations X and Y will join Baby Boomers in caring for elderly family members.[107] In other words, at some point, all generations in the workforce will be involved to some extent in caring for aging family members. Indeed, recent statistics from the National Alliance for Caregiving and the AARP found that 57-percent of those who were caregivers in the past twelve months are currently employed, with 46-percent engaged in full-time work and 11-percent working part-time. [108]

> *An increasing percentage of our workforce will be caring for aging parents.*

Older Population by Age Group, as Percentage of US Population (1970–2020)[109]

	1970	1980	1990	2000	2010	2020
Total	203 M	227 M	249 M	281 M	310 M	341 M
85 +	1%	1%	1%	2%	2%	2%
75–84	3%	3%	4%	4%	4%	5%
66–74	6%	7%	7%	7%	7%	9%
Under 65	90%	89%	87%	88%	87%	84%

Legend: ▨ Under 65 ■ 66–74 ■ 75–84 ▨ 85 +

External Factors Affecting the Future Workforce

Gender roles for childcare and household duties are shifting.

More employees will look for higher wages or family-friendly work policies to cover elder- and childcare demands.

Deployments to jobs remote from "home base" are likely to fall disproportionately on younger employees.

Further, more and more older Americans live with their caregivers because the weak economy's impact on what they had saved to cover expenses. Statistics from the National Alliance of Caregivers and the AARP demonstrate that the caregiver's family income tends to determine where the eldercare recipient ends up living.[110] The statistics show that the lower the caregiver's income, the more likely their elderly loved one will live with them. For caregivers with less than $50,000 in household income, 38-percent of their eldercare recipients live with them. In higher income households that figure falls to 23-percent.

The overwhelming tendency among married couples in the United States since the late 1980s has been for both spouses to work. In 2010, when the national unemployment rate averaged 9.6-percent, the share of married couples with both spouses in the labor force was 64.7-percent. This rise in dual-income households has been accompanied by an increased expectation that men and women contribute more equally to work in the home, including child rearing and eldercare.[111] Despite this, men on average spend 41 minutes per day more in the workplace than their female counterparts,[112] so men are likely to be under increasing pressure to reduce their working hours in favor of helping more at home. On the other hand, the need for men to take greater responsibility in the home may mean that the representation of women in the workplace actually grows, thus accelerating the on-going feminization of the US labor force.

Implications for the Future Workforce

The need to support both elderly parents and young children may prove to be a significant outside distraction for a big part of the workforce. In fact, a recent study from the National Alliance for Caregiving and the Center for Productive Aging at Towson University found that 81-percent of caregivers took time during the workday to make arrangements for or to check on their loved one, 70-percent needed days off to attend to their caregiving duties, 64-percent arrived late or left work early because of caregiving responsibilities, and 41-percent took time at work to discuss caregiver issues with coworkers.[113] Consequently, employees can be expected to exhibit a strong preference for employers that offer family-friendly work policies like flextime, satellite flex-space facilities, on-site day care, reduced work hours, flexible leave options, and/or the ability to work from home. Alternatively, employees may seek out firms that offer relatively higher wages to pay for care.[114]

Organizations that cannot offer flextime or the ability to work from home will face increasing challenges in recruiting new employees. In addition, mid-career employees with child- and/or eldercare responsibilities will exhibit a strong preference for assignments that keep them close to home, increasingly leaving travel duties and overseas deployments to the youngest employees.

How Organizations Might Address the Implications of This Challenge

To attract and retain workers who are being stretched to provide child- and/or eldercare, organizations might implement strategies that target when and where workers do their jobs. For example, for workers that need to be in a central office, employers might consider on-site care services; for workers that can or must be mobile, corporations could choose alternative incentives, such as increased compensation or the use of flextime. The following are several examples of organizations that are taking novel approaches to these challenges:

> To help relieve some of the pressures of caring for elderly parents, The Principal Financial Group, a global financial services provider, offers employees a generous working caregiver leave program, which allows employees to work a part-time schedule for up to twelve weeks a year, while maintaining job security and full benefits. Similarly, George Mason University, where nearly half the workforce is over the age of fifty, provides 32 hours of leave annually to use for caregiving or any other family need.

To assist employees in meeting both their professional and family obligations, organizations like Ernst & Young (E&Y) are starting to allow employees to work anywhere in the world, at any time.[115] E&Y has implemented a Flexibility Strategy Team, the goal of which is to build a corporate culture that supports flexible work arrangements.[116] "This notion of an eight-hour day is rapidly disappearing, simply because we work so virtually and globally," says Maryella Gockel, Ernst & Young's flexibility strategy leader.[117]

There is vigorous, ongoing public debate about how – and indeed whether – women can successfully juggle career advancement, job requirements, family duties, and child-rearing.

In 2010 Sheryl Sandberg, the COO of Facebook, gave a TED talk called "Why We Have Too Few Women Leaders," in which the mother-of-two argued that women could successfully have careers and family, provided they were persistent and willing to do the work required to achieve their goals. Although she subsequently acknowledged in interviews that success in a high-power position requires constant juggling for a woman with a family, she continues to argue that "there is no such thing as work-life balance. There's work, and there's life, and there's no balance."

In 2012 Anne-Marie Slaughter, who had been the first woman to head Policy Planning for the State Department but who then returned to her tenured job at Princeton, published an article, "Why Women Still Can't Have it All," describing how impossible she had found it to juggle the demands of her government job and those of her family, even though she worked in an administration and department which were attempting to be as "family-friendly" as possible.

http://www.huffingtonpost.com/2012/04/06/sheryl-sandberg_n_1409061.html
http://www.theatlantic.com/magazine/archive/2012/07/why-women-still-can-8217-t-have-it-all/9020/

How will rising personal indebtedness impact the employabiity and career choices of incoming workers?

Key Takeaway: Personal indebtedness is likely to restrict the labor pool for organizations and professions that do not meet basic compensation thresholds.

The cost of a college education has skyrocketed over the past several decades at both public and private, nonprofit four-year undergraduate colleges and universities. Relative to the 1980-81 academic year, costs at public four-year schools have increased by 368-percent and at private, nonprofit four-year schools by 281-percent. Even over the short term, tuition and fees went up—by 8.3-percent at public four-year schools and 4.5-percent at private, nonprofit four-year schools between the 2010-11 and 2011-12 academic years.[118] These increases, in combination with cuts in state education budgets and stagnant wages for most US families, have made it difficult for the average student to finance an undergraduate education. This challenge is most acute among those attending elite private four-year colleges and universities and for high school graduates from low-income families. Indeed, for low- and middle-income families, the net price (tuition and fees, minus grants and aid from all sources) of attending even a public college or university in 2007 was 48-percent and 26-percent of household income, respectively.[119]

As a consequence, the amount of educational loan debt held by US students has exploded. In 2010, student loan debt in the US for the first time surpassed the total credit card debt, and topped one trillion dollars in 2011.[120, 121] Further, the average student loan debt load for 2010 graduates was $24,000, which—based on conservative estimates—will require loan repayments of more than $3,300 per year for ten years.[122]

Exacerbating the burden of mounting student loan debt is the fact that recent college graduates are confronting the worst job market since the Great Depression, with the unemployment rate for those under age 25 reaching almost 18-percent in August 2011,[123]declining slightly to a still-large 16.4-percent in May 2012.[124] For those lucky enough to land a job, the median starting salary for graduates of four-year schools is around $27,000, down from $30,000 in 2008.[125]

"MY MOM IS A SELF-EMPLOYED REAL ESTATE AGENT AND MY DAD JUST OPENED UP A HANDY MAN SHOP. WE'VE TALKED ABOUT FINANCES AND HOW EXPENSIVE COLLEGE IS, BUT THEY SAID THAT PEOPLE ARE ALWAYS GOING TO HAVE DEBT—THAT'S JUST THE WORLD WE'RE LIVING IN TODAY."

STUDENT AT THE UNIVERSITY OF SAN FRANCISCO
INTERVIEWED FOR THIS PAPER

This combination of increasing debt, higher unemployment, and declining wages for recent graduates has caused a dramatic spike in the number of young Americans defaulting on their student loans or even facing bankruptcy. In 2009, the national student loan default rate reached its highest level since 1997, and only 37-percent of borrowers have been able to make all of their federal student loan payments over the last five years. The trend toward default is most notable among those who attended for-profit colleges (like the University of Phoenix or Sanford-Brown College). This group makes up about 10-percent of undergraduates, but accounts for almost 50-percent of those who default on student loans.[126] Additionally, a recent report from the National Association of Consumer Bankruptcy Attorneys found that more than 80-percent of bankruptcy attorneys say they've seen "notable" increases in the number of clients with student loan debt, with almost 50-percent reporting a "significant" increase in such cases.[127]

Implications for the Future Workforce

These two challenges—dramatic increases in personal indebtedness, and higher default rates on student loans—will have clear implications for the future workforce and for employers.

"EVERYONE HAS STUDENT LOAN DEBT. IT'S NOT REAL DEBT; IT'S FAKE DEBT."

RECENT COLLEGE GRADUATE INTERVIEWED FOR
THIS PROJECT

"HOW HAS STUDENT LOAN DEBT AFFECTED MY LIFE? IT DICTATED WHAT SCHOOL I COULD ATTEND AS AN UNDERGRADUATE. IT WAS THE PRIMARY REASON I DID NOT GO TO VETERINARY SCHOOL…. I GOT A JOB I COULD NOT AFFORD TO KEEP. SO IT HAS INFLUENCED MY JOB DECISIONS. I HAVE NO CHILDREN, AS I WASN'T GOING TO START A FAMILY UNTIL I COULD PAY OFF MY LOAN DEBT, AND NOW IT'S TOO LATE. I HAVE MOVED 2,500 MILES FROM MY FAMILY FOR BETTER JOB OPTIONS AND LOWER COSTS OF LIVING."

A READER'S E-MAIL TO NPR'S
"TALK OF THE NATION" 31 OCTOBER 2011[128]

edX Another possible effect of rising tuition costs and their potential to load students with heavy debt burdens is that would-be students may increasingly turn to on-line and other non-traditional routes to knowledge acquisition. For example:

- MIT, Harvard, and UC Berkeley have each committed $30 million to create "edX," which offers free on-line courses given by the prominent faculty members. The first such MIT course enrolled 120,000 students;
- Stanford, Princeton, University of Pennsylvania, and University of Michigan have joined to create the for-profit company Coursera, which offers a broad range of courses, from STEM to humanities;
- Sebastian Thurn, formerly of Stanford, has left to create Udacity, which calls itself a "21st Century university," offering classes for free and also offering networking and social media options for what it claims is more than 200,000 students.
- The Mozilla Foundation and the MacArthur Foundation have joined forces to create the Mozilla Open Badges Project, a system of badging which will recognize "lifelong learning" and serve as certification that specific skills and experiences have been accomplished (a move which, they argue, will replace diplomas);
- the Khan Academy offers more than 3,200 video tutorials on-line, covering both academic subjects and specific job skills;
- And billionaire Peter Thiel is offering $100,000 grants to 24 young entrepreneurs per year provided they do not go to college at all, but rather embark immediately on their entrepreneurial activities;

This proliferation of ways in which employees acquire knowledge and skills, and the many ways in which those will be credentialed, is going increasingly to challenge employers to broaden how they define, advertise, and evaluate applicant qualifications and criteria for promotion.

First, as student loan debt burdens continue to climb, college graduates may require jobs that have relatively high salaries so they can avoid the possibility of defaulting on their loans. This will create employee recruitment and retention challenges for organizations that are unable to compete on salary grounds (e.g., public sector organizations such as government agencies, multilateral institutions, and nonprofits, and private-sector organizations that cannot offer high pay). In "Recruiting and Retaining the Next Generation of Nonprofit Leaders," a 2004 report by New York University's Wagner Graduate School of Public Service, author Shelly Cryer identifies perceptions of low pay and the impact this would have on paying back student debt as top deterrents to college graduates seeking employment in the nonprofit sector. While college seniors reported positive views about the work performed by nonprofit agencies, they also saw the sector as very low paying.[129] While this problem is currently masked in large part due to the current weak economy, it will become more challenging for lower-wage employers as the economy recovers.

More specifically, they will find it more difficult to identify and recruit employees from middle- and lower-class backgrounds, because this cohort will be the most heavily burdened by student loan debt. This reality may compel some employers to target students from upper- and upper-middle-class families who were able to afford college, and students who graduated from less expensive institutions. Knowledge-based organizations that cannot offer new workers a high starting salary might attempt to implement tailored strategies—such as loan repayment assistance—to specifically attract talented, heavily debt-burdened recent graduates who are eager to pay off their student loans.

External Factors Affecting the Future Workforce

Debt load can also slow the transition from adolescence to adulthood for many young people. Recent college graduates may delay decisions about career fields, marriage, home buying, and children. Some may choose a job simply as a short-term commitment to pay off education debt. As a result, all organizations face the risk of higher employee turnover down the road and a corresponding increase in future hiring and training costs.

In addition, young graduates who default on student loans will find their credit ratings damaged. Consequently, they will be excluded from jobs where credit records are scrutinized as a marker of integrity and probity. Unless employers make the choice to overlook this type of problem, they will face a thinner talent pool as loan default rates rise.

How Organizations Might Address the Implications of This Challenge

The following are current examples of interventions designed to address employee indebtedness, as well as some thoughts on potential future strategies to address this issue:

Peninsula Habitat for Humanity in San Mateo, California offers its staff a monthly $200 "Quality of Life" allowance for gym memberships, yoga classes, home Internet access, and other health and lifestyle benefits. Programs like these, which augment employees' base pay, help workers cut costs and better manage their loan debt.[130]

Southwest Airlines was the first US airline to engage in profit sharing and has offered it every year since 1974.[131] In 2000, Southwest gave its employees a record-setting $138 million in shared profits, essentially giving each employee an additional 14.1-percent in compensation for the year. Non-salary compensation programs like these can help debt-burdened graduates avoid loan default, and can make employers more attractive to the most talented, indebted job seekers.

The National Institutes of Health (NIH) Undergraduate Scholarship Program provides up to $20,000 per year in tuition, educational expenses, and reasonable living expenses.[132] Each year of scholarship obliges the recipient to serve one full year of research at the National Human Genome Research Institute. Recruitment programs like these can lessen the debt burden for talented students, provide employment after graduation, and help employers attract talented individuals at earlier ages.

Lower-wage employers might recruit employees who were able to pay for private colleges or who graduated from less-expensive schools.

A significant percentage of the potential workforce may be excluded from specific jobs because of poor credit ratings.

In the future, organizations might assist and motivate indebted employees by demonstrating empathy and understanding for the challenges they face as they work to pay off their loans. Specific actions might include endorsing and educating employees about loan forgiveness programs (e.g., the Public Service Loan Forgiveness Program, which partially forgives loan debt for qualifying individuals in public service jobs) or sponsoring support groups for young employees paying off their debt.[133]

To date, few organizations have begun to address the possibility that a significant percentage of their potential workforce may be excluded from specific jobs because of poor credit ratings that result from student loan default. Forward-leaning organizations may wish to consider requiring debt counseling in place of minimum credit score thresholds for employment. For example, if a talented individual is qualified for a position but falls below a certain credit score, he or she could be required to complete mandatory debt counseling as a condition of employment. This would create a situation in which establishing good credit becomes a longer-term benefit of employment.

External Factors Affecting the Future Workforce

Workforce of the Future: Relevance for the Intelligence Community

Because it was prepared with the assistance of subject-matter experts from outside the Intelligence Community (IC), "Workforce of the Future" identifies trends likely to impact businesses and other organizations over the next several years, but does not directly address issues which are likely to have particular impact on the IC. This section offers observations about how the findings of this study may affect hiring, training, retention, and organizational management in the IC. The list of issues discussed below is neither exhaustive nor prescriptive, but rather is intended to prompt thought and discussion.

FOREIGN RELATIONSHIPS

The increasing popularity of study-abroad programs, growing numbers of foreign students in US schools, and expanded opportunities for global travel mean that new employees are entering the workforce with more foreign ties than their predecessors ever had. Social media platforms such as Facebook and Twitter, pervasive and convenient communication technologies like Skype, and online multiplayer games allow people to initiate and maintain inexpensive and immediate relationships with others around the world. Indeed, new employees might not even know the nationalities of some of their face-to-face and virtual friends. Growing numbers of immigrants and dual nationals in the US and abroad further expands young employees' contact with foreign nationals and complicates their understanding of just who is a foreign national. This presents unique challenges and opportunities for intelligence organizations.

Challenges for the IC:

— Should or can IC agencies continue to require employees to declare ongoing relationships with non-US citizens? Would such a requirement require a flood of new background checks that might test current capabilities?

— Should new employees be required to ask the nationalities of their contacts, and might this in itself be an indicator of the employees' possible move into the IC?

— Alternatively, if new employees withdraw from international friendships and online interaction with non-US acquaintances, would that be another signal that their new job might be with the IC?

Opportunities for the IC:

— Employees with international experience bring valuable insights, foreign language skills, and cultural understanding to intelligence work.

— Employees' ease with using social media that cross national boundaries might yield innovative new collection and analytic methodologies for the Intelligence Community.

COLLABORATION

Perhaps as the result of an increased focus on group projects and team building exercises throughout their education, the Millennial generation is collaborative by nature. They often prefer environments in which information is shared freely, communication across departments happens simultaneously and instantaneously, and working with peers is encouraged.

Challenges for the IC:

— Will current IC culture, hierarchical management structure, regulations, and IT infrastructure be able to support growing expectations for collaborative teaming, technology, and workspaces?

— How will the future workforce challenge traditional 'need-to-know' principles?

— How will current performance metrics designed for individuals need to be adjusted to account for collaborative efforts?

— Will a crowdsourcing generation accustomed to posting questions to entire networks test current security procedures by using personal networks to access information that will help them perform their jobs?

Opportunities for the IC:

— The different mindsets that many in this generation might bring to intelligence organizations could reinvigorate creative thinking, result in the creation of new and better collaborative tools, and help eliminate unnecessary stovepipes to connect experts across the IC.

DIGITAL NATIVES

Members of the Millennial generation, branded by many as "digital natives," are accustomed to using information and communication tools to make their personal, academic, and professional lives more efficient. They are likely to join the IC expecting to employ the same tools in the workplace.

Challenges for the IC:

— Will digital natives turn down IC jobs that lack cutting-edge collaborative tools or restrict social media use?

— Will members of the future workforce be more likely than their predecessors to circumvent regulations, such as those governing social media, wireless technology, or unauthorized downloads?

— Will new communication platforms allow the blurring of lines between professional and personal lives, and what would be the impact on security? Might intelligence interests and methods be revealed?

— How do we judge the reliability of information collected from the crowd?

— Will tweeting or use of other social networking tools at work become necessary to keep pace with rapidly changing events?

Opportunities for the IC:

— What role will this networked generation play in the development of new tools and methodologies for collection and analysis?

— What new information and understanding might flow from an increasingly tech-savvy workforce?

SERIAL EMPLOYEES
Accustomed in recent years to financial bubbles, weak job growth, and limited headroom at work, young workers often value the freedom to move quickly and often in order to stay current, relevant, and employable…anywhere.

Challenges for the IC:

— What would high employee turnover rates mean for the IC, where security considerations and specialized training mean high employee on-boarding costs?

— Will we see the end of the career employee? Will human resource policies change to adopt more of a "contract staff" mentality?

Opportunities for the IC:

— Changing expectations about the nature of work and the duration of assignments might allow organizations to more quickly adapt to the changing needs of the mission. Would short-term, serial employees improve the organization's surge capacity or make it easier to cap employment in times of budgetary restrictions?

— Could "in-and-out-and-back-again" employees accelerate the institutional learning curve, bringing into the workplace the skills, insights, and contacts made while working or studying for short periods outside the IC?

GREEN-HAIRED EMPLOYEES
The CEO of a major technology publication interviewed for this project commented that many or most technology wizards are young, some with limited formal education, some with questionable hacking or drug backgrounds, and some have green hair. Yet, he said, when he walks the halls of the IC, he never sees green hair. Some of the best and brightest future applicants, such as those in cutting-edge technology fields, might not look like us or have a similar educational or work backgrounds. As we see in this report, they might come to us with drug and debt issues that would traditionally disqualify them from holding a security clearance.

Challenges for the IC:

— If drug use, debt, nontraditional education and work histories, and personal debt are disqualifiers in the background investigation process, will the IC be able to hire the best and brightest workers to fulfill its unique mission?

— If the difficulty of hiring these new workers and the slow pace of retirement among existing workers forces the IC to "fight with the army it has," how does it train or retrain the current workforce in the skills the Community needs?

Opportunities for the IC:

— This kind of new employee could bring new skills and contribute to the cognitive diversity to the IC.

FLEXIBILITY

As the private sector becomes less stringent in its view of how, when, and where work is accomplished, young workers are likely to seek jobs that can accommodate their need for flexibility. As women graduate from college at record-setting rates, the number of dual-income households may also continue to grow. This could result in increased demand for nontraditional work schedules to allow employees to balance their own career, their spouse's career, as well as the needs of their children and aging parents.

Challenges for the IC:

— Will the IC be able to compete with the private sector in hiring young workers interested in flexible work environments? Will the intelligence workforce's inability to work at home, on their personal technology devices, and at whatever hour is best for them put the IC at a stark disadvantage when it comes to hiring and retention?

— Will changing expectations regarding the optimal work-life balance and increasing family obligations limit intelligence workers' flexibility when it comes to travel and overseas assignments?

Opportunities for the IC:

— Would flexible work schedules allow intelligence organizations to save on facilities costs by double-booking offices and "hot-seating" employees?

In an environment of constant change—domestic and international, personal and professional, technological and ecological—the IC will be challenged to hire, train and retain the best workers. Emerging trends suggest that the profession of intelligence—what we do and how we do it—might change significantly in coming years[134], and that the people we hire and the skills they bring to the workplace might also need to change.

Selected Sources for Themes about Millennials

Appendix

Accenture. *Jumping the Boundaries of Corporate IT: Accenture Global Research on Millennials' Use of Technology.* Corporate white paper (2010).

Berenguer, Celia, June Delano, and Karin Stawarky. *Catalyst for Change: The Impact of Millennials on Organization Culture and Policy.* Monitor Group (2010).

Delano, June. *New Development Strategies for the New High Potentials.* Monitor Executive Development Presentation (April 1, 2008).

Economist Intelligence Unit. *The Future of Higher Education: How Technology Will Shape Learning* (2008).

Feldmann, Derrick and Ted Grossnickle, Editors. *Millennial Donors: A Study of Millennial Giving and Engagement Habits.* Achieve and Johnson, Grossnickle and Associates white paper (2010).

Halpin, John and Karl Agne. *The Political Ideology of the Millennial Generation.* Center for American Progress (May 2009).

Klopfer, Eric, Scott Osterweil, Jennifer Groff, and Jason Haas. *The Instructional Power of Digital Games, Social Networking, Simulations, and How Teachers Can Leverage Them.* Massachusetts Institute of Technology: The Education Arcade (2009).

Lenhart, Amanda, Kristen Purcell, Aaron Smith, and Kathryn Zickuhr. *Social Media & Mobile Internet Use Among Teens and Young Adults.* Pew Internet and American Life Project (February 3, 2010).

Mr. Youth and Intrepid. *Millennial Inc: What Your Company Will Look Like When Millennials Call the Shots.* Corporate white paper (2010).

NAS Recruitment. *Generation Y: The Millennials; Ready or Not, Here They Come.* Corporate white paper (2006).

Orrell, Lisa. *Understanding the Digital Generation.* Panel Discussion at Global Innovation Forum (2011).

Prensky, Marc. *Digital Natives, Digital Immigrants.* On The Horizon (Volume 9, Number 5, October 2001).

PricewaterhouseCoopers. *Managing Tomorrow's People.* Corporate research series (2010).

Rasmus, Daniel W. *The Next-Generation Workforce and Project Management.* NASA's Ask Magazine (2007).

Singer, Peter, Heather Messera, and Brendan Orino. *D.C.'s New Guard: What Does the Next Generation of American Leaders Think?* Survey from Foreign Policy at Brookings (February 2011).

Sweeney, Richard. *Millennial Behaviors and Demographics.* New Jersey Institute of Technology (2006).

Taylor, Paul and Scott Keeter, Editors. *Millennials: A Portrait of Generation Next.* Pew Research Center (February 2010).

Source Notes

1. Dan Schwabel, "Millennials vs. Baby Boomers: Who Would You Rather Hire?" *Time:Moneyland*, 29 March 2012, http://moneyland.time.com/2012/03/29/millennials-vs-baby-boomers-who-would-you-rather-hire/.

2. The research methods used for this report included reviewing a wide variety of open source publications, conducting focus groups and interviews with students and young workers, and interviewing working managers and HR professionals, mainly in the private, for-profit sector.

3. For more information on this topic, see Center for the Study of Intelligence (CSI) Emerging Trends report *Wireless in a Networked World* (Washington DC; Center for the Study of Intelligence, 2012).

4. Alexia Tsotsis, "comScore Says You Don't Got Mail: Web Email Usage Declines, 59% Among Teens!" 7 February 2011, http://techcrunch.com/2011/02/07/comscore-says-you-dont-got-mail-web-email-usage-declines-59-among-teens/. Total web e-mail usage was down eight percent between November 2009 and November 2010, with a 59-percent decline in use in the 12-17 age group; 1-percent among 18-24 year olds; 18-percent among 25-35 year olds; 8-percent among 35-44 year olds; and 12-percent among the 45-54 demographic.

5. comScore, "Email Evolution: Web-based Email Shows Signs of Decline in the U.S. While Mobile Email Usage on the Rise," comScore press release, 20 January 2011, http://www.comscore.com/Press_Events/Press_Releases/2011/1/Web-based_Email_Shows_Signs_of_Decline_in_the_U.S._While_Mobile_Email_Usage_on_the_Rise.

6. Plaxo Report cited by Mercyhurst.

7. [   ]

8. 2010 eMarketing Report cited by Mercyhurst.

9. http://millennier.com/wp-content/uploads/2010/09/PEW-388x585.jpg

10. Pam Dyer, "How Can Brands Connect with the Facebook Generation?" 12 June 2011, http://www.pamorama.net/2011/06/12/the-facebook-generation-how-can-brands-connect-social-media-marketing/.

11. Janna Anderson and Lee Rainie, "Millennials will make online sharing in networks a lifelong habit," *Pew Internet and American Life*, 9 June 2010, http://www.pewinternet.org/Reports/2010/Future-of-Millennials.aspx.

12. CISCO *2011 Annual Security Report*, http://www.cisco.com/en/US/prod/collateral/vpndevc/security_annual_report_2011.pdf.

13. Douglas MacMillan, "Millennials: Savvy on Privacy," *BusinessWeek* online, 26 May 2010, http://www.businessweek.com/technology/content/may2010/tc20100526_876848.htm.

14. Lupita S-O'Brien, Pamela Read, Jaqueline Woolcott, and Chirag Sha. "Understanding privacy behaviors of millennials within social networking sites." *Proceedings of the American Society for Information Science and Technology* 48(1):1-10, 2011.

15. Catharine Smith and Bianca Bosker, "Fired Over Twitter: 13 Tweets That Got People CANNED," *Huffington Post*, 25 May 2011, http://www.huffingtonpost.com/2010/07/15/fired-over-twitter-tweets_n_645884.html#s112801&title=Cisco_Fatty_Loses .

16. Fahmida Y. Rashid, "Enterprises Are Embracing BYOD, Not Resisting It: Study," *eWeek*, 27 January 2012, http://www.eweek.com/c/a/Mobile-and-Wireless/Enterprises-are-Embracing-BYOD-Not-Resisting-It-Study-699380/.

17. "Good Technology State of BYOD Report," *IT World*, http://www.itworld.com/mobile-wireless/247888/good-technology-state-byod-report.

18. Huang, Yan, Singh, Param Vir and Ghose, Anindya, "A Structural Model of Employee Behavioral Dynamics in Enterprise Social Media," July 18, 2012, http://ssrn.com/abstract=1785724 or http://dx.doi.org/10.2139/ssrn.1785724.

19. Anthony Ha, "Salesforce: Yes, Chatter really does improve productivity," *VentureBeat.com*, 22 September 2010, http://venturebeat.com/2010/09/22/salesforce-yes-chatter-really-does-improve-productivity/.

20. Don Steinberg, "Zappos Finds a Use for Twitter. Really!" *Inc* [online], 5 June 2008, http://www.inc.com/articles/2008/06/zappos.html.

21. US Census Bureau, "An Older and More Diverse Nation by Midcentury," http://www.census.gov/newsroom/releases/archives/population/cb08-123.html.

22. Eric Greenberg, Generation We: How Millennial Youth are (b)(3) Taking Over America and Changing Our World Forever (Emeryville, CA: Pachatusan, 2008), 21.

23. Wendy Wang, "The Rise of Intermarriage - Rates, Characteristics Vary by Race and Gender," 16 February 2012, http://www.pewsocialtrends.org/2012/02/16/the-rise-of-intermarriage/5/#chapter-4-public-attitudes-on-intermarriage.

24. Sarah Treuhaft and David Madland, "Prosperity 2050: . Is Equity the Superior Growth Model?" 22 April 2011, http://www.americanprogress.org/issues/economy/report/2011/04/22/9405/prosperity-2050/.

25. Kevin Whitelaw, "Defining Diversity: Beyond Race and Gender," 13 January 2010, http://www.npr.org/templates/story/story.php?storyId=122327104.

26. David A. Hollinger, Postethnic America: Beyond Multiculturalism (New York: Basic Books, 2006).

27. Tammy Erickson, "Your Diversity Officer Should Be a Cruise Director," *HBR Blog Network*, 11 May 2011, http://blogs.hbr. org/erickson/2011/05/your_diversity_officer_should.html.

28. Dell's Commitment to Diversity and Inclusion, http:// content.dell.com/us/en/corp/d/corp-comm/cr-diversity-mission.aspx .

29. Amy Jacques (interview with Xerox Corporation's Corporate Diversity Manager Ernest Hicks), "Diversity at work: Public relations makes a difference for global giants," 1 October 2010, *Public Relations Tactics* [online journal of the Public Relations Society of America], http://www.prsa.org/Intelligence/Tactics/Articles/view/8828/1021/Diversity_at_work_Public_relations_makes_a_differe.

30. Nelly Furman, David Goldberg, and Natalia Lusin, "Enrollments in Languages Other Than English in United States Institutions of Higher Education, Fall 2009," December 2010, http://www.mla.org/pdf/2009_enrollment_survey.pdf, p. 3.

31. Institute of International Education, "Open Doors 'Fast Facts'," 2011, http://www.iie.org/en/Research-and-Publications/~/media/Files/Corporate/Open-Doors/Fast-Facts/Fast%20Facts%202011.ashx.

32. Daniel Obst, Rajika Bhandari and Sharon Witherell, "IIE Study Abroad White Paper Series: Meeting America's Global Education Challenge - Current Trends in U.S. Study Abroad & The Impact of Strategic Diversity Initiatives," May 2007, www.iie.org/en/Research-and-Publications/Research-Projects/~/media/Files/Corporate/Membership/StudyAbroad_WhitePaper6.ashx, p. 6.

33. Open Doors Data: "U.S. Study Abroad: Leading Destinations," 2008-2010, http://www.iie.org/Research-and-Publications/Open-Doors/Data/US-Study-Abroad/Leading-Destinations/2008-10; and "International Students: Leading Places of Origin," 2009-2011, http://www.iie.org/Research-and-Publications/Open-Doors/Data/International-Students/Leading-Places-of-Origin/2009-11.

34. Karin Fischer, "Northeastern, Once Local, Goes Global - University expands signature co-op program and foreign enrollment," January 16, 2011, *Chronicle of Higher Education*, http://chronicle.com/article/A-Once-Local-University/125959/.

35. Linda K. Stroh, International Assignments: An Integration of Strategy, Research, and Practice (Mahwah, NJ: Lawrence Erlbaum Associates, 2005).

36. Ibid.

37. Bart Becht, "Building a Company Without Borders," *Harvard Business Review*; April 2010, 88(4):103-106.

38. PwC [formerly known as PricewaterhouseCoopers International], "Early PwC International Challenge (EPIC) programme: The route to a fulfilling career," 16 October 2010, http://www.pwc.com/gx/en/careers/early-pwc-international-challenge-programme.jhtml.

39. Lisa Daniel, "Recruiters Recall Patriotism of Post-9/11 America," US Department of Defense *American Forces Press Service*, 8 September 2011, http://www.defense.gov/news/newsarticle.aspx?id=65272.

40. Ibid.

41. Ibid.

42. Joe Light, "Google Is No. 1 on List Of Desired Employers," Wall Street Journal [online], 21 March 2011, http://online.wsj.com/article/SB10001424052748703512404576208702115862760.html.

43. Mark F. Bernstein, "A changing view: As attitudes toward government and public service evolve, so does the Woodrow Wilson School," 10 May 2006, http://www.princeton.edu/~paw/archive_new/PAW05-06/13-0510/features_govt.html. Quote is from Fatema Gunja, who worked at the ACLU before going to Princeton, the interned at the Afghanistan desk at the State Department. She described herself as wanting to find a "post-9/11 foreign policy" job after graduation.

44. Ibid.

45. Shelly Cryer, "Recruiting and Retaining: The Next Generation of Nonprofit Sector Leadership," The Initiative for Nonprofit Sector Careers, January 2004, http://www.nationalserviceresources.org/files/AR_NextGenofNPSectorLeadership_2006_Scryer.pdf.

46. Deloitte Development LLC, "2010 Deloitte Volunteer IMPACT Survey," 2010, http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_2010DeloitteVolunteerIMPACTSurveyDatatables_043010.pdf.

47. Nick Paumgarten, "Food Fighter: Does Whole Foods' C.E.O. know what's best for you?" New Yorker, 4 January 2010, http://www.newyorker.com/reporting/2010/01/04/100104fa_fact_paumgarten#ixzz29UNa2WnC

48. comScore, "It's a Social World: Social Networking Leads as Top Online Activity Globally, Accounting for 1 in Every 5 Online Minutes," comScore press release, 21 December 2011, http://www.comscore.com/Press_Events/Press_Releases/2011/12/Social_Networking_Leads_as_Top_Online_Activity_Globally.

49. comScore, "It's a Social World: Top 10 Need-to-Knows About Social Networking and Where It's Headed," comScore report, 2011, http://www.comscore.com/content/download/12135/231287/file/Top_10_Need-to-Knows_About_Social_Networking_and_Where_it_is_headed.pdf.

50. Site analytics performed December 9, 2011, at http://www.compete.com.

51. For example, more than 70-percent of the US Congress is active on Twitter and, according to Edelman Digital's *2011 Capital Staffers Index* [http://www.edelmandigital.com/2011/12/07/2011-capital-staffers-index/], there has been a meteoric rise in the use of social media channels to shape policy and engage with constituents.

52. Educause Center for Applied Research, "ECAR National Study of Undergraduate Students and Information Technology," 2011, http://net.educause.edu/ir/library/pdf/ERS1103/ERS1103W.pdf, p. 15.

53. Jennifer Preston, "Rules to Stop Pupil and Teacher From Getting Too Social Online," *New York Times*, 17 December 2011, http://www.nytimes.com/2011/12/18/business/media/rules-to-limit-how-teachers-and-students-interact-online.html?_r=0.

54. Simon Mackie, "Supporting Millennials in the Workplace," *GigaOM* [blog], 27 July 2011, http://gigaom.com/2011/07/27/supporting-millenials-in-the-workplace/.

55. George Musser, "The Origin of Cubicles and the Open-Plan Office," *Scientific American* [online], 17 August 2009, http://www.scientificamerican.com/article.cfm?id=the-origin-of-cubicles-an.

56. Morten T. Hansen and Herminia Ibarra, "Getting Collaboration Right," *HBR Blog Network*, 16 May 2011, http://blogs.hbr.org/cs/2011/05/getting_collaboration_right.html.

57. Vinesh G. Oommen, Mike Knowles, and Isabella Zhao, "Should health service managers embrace open plan work environments? A review," *Asia Pacific Journal of Health Management*, 3(2):37-43 (2008).

58. Reed Hastings, "Netflix Culture: Freedom and Responsibility," PowerPoint presentation, 2009, accessed at http://www.slideshare.com on 15 January 2012.

59. Adam Richardson, "Inventing the Collaborative Workspace," *HBR Blog Network*, 21 November 2011, http://blogs.hbr.org/cs/2011/11/inventing_the_collaborative_workspace.html.

60. Ibid.

61. Anne-Laure Fayard and John Weeks, "Who Moved My Cube?" *Harvard Business Review*, 89(7/8):102-110 (Jul/Aug 2011).

62. Nicholas Carr, "Put the Cost Back in Communication," *New York Times* [online], 16 December 2011, http://www.nytimes.com/roomfordebate/2011/12/05/should-workplaces-ban-e-mail-37/the-curse-of-free-communication.

63. Gad Levanon, Ben Cheng, and Jeremy Goldman, "U.S. Workers Delaying Retirement," *The Conference Board Executive Action Series* No. 350, May 2011, http://www.financial-finesse.com/wp-content/uploads/2012/01/US_workers_delay_retirement.pdf

64. Lauren Riefflin, "U.S. Homes Expected to Lose Nearly $700 Billion in Value in 2011," *Zillow* Blog, 22 December 2011, http://www.zillow.com/blog/2011-12-22/u-s-homes-expected-to-lose-nearly-700-billion-in-value-in-2011/

65. Marilyn Geewax, "Americans' Savings Offer Little Shelter for Rainy Day," *NPR Weekend Edition*, 15 November 2009, http://www.npr.org/templates/story/story.php?storyId=120397501.

66. Elizabeth Ody, "Wells Fargo Says 80 May Be the New 65 for Retirees," *Bloomberg* [online], 16 November 2011, http://www.bloomberg.com/news/2011-11-16/wells-fargo-survey-says-80-may-be-the-new-65-for-retirement-age.html.

67. "Retirement: Working Longer is Plan A. But Where's Plan B?" 18 May 2011, http://www.foxbusiness.com/personal-finance/2011/05/18/retirement-working-longer-plan-wheres-plan-b/#ixzz29Z8SAQO0.

68. Nick Cronin, "Labor Efficiency: The Next Great Internet Disruption," *TechCrunch*, 4 February 2012, http://techcrunch.com/2012/02/04/labor-efficiency-the-next-great-internet-disruption/.

69. "In the Next Society, the biggest challenge for the large company—especially the multinational—may be its social legitimacy: its values, its mission, its vision. Increasingly, in the Next Society's corporation, top management will, in fact, be the company. Everything else can be outsourced."

Peter Drucker, *Managing in the Next Society* (New York: St. Martin's Press, 2002), 291.

70. Laura Sabattini, Anika Warren, Sarah Dinolfo, Emily Falk, Mekayla Castro, "Beyond Generational Differences: Bridging Gender and Generational Diversity at Work," *Catalyst*, September 2010, http://www.catalyst.org/publication/446/beyond-generational-differences-bridging-gender-and-generational-diversity-at-work.

71. The Recruiters Network, a free association of HR professionals, defines employee value proposition as "a measurement of the balance between what an employee receives from their employer in return for their performance on the job. In other words, it is the 'get' versus the 'give.' If in the employees' minds they 'get' rewards equal to or exceeding what they 'give,' the company will tend to have more satisfied employees and increased retention." http://www.recruitersnetwork.com/articles/article.cfm?ID=1456

72. Kathy Kibbe, Laura Sejen, Kathryn Yates. "Why an Employee Value Proposition Matters: Creating Alignment, Engagement and Stronger Business Results." Towers Watson webcast, October 13, 2010; slides available at www.slideshare.net.

73. "Orrick Announces New Talent Model," Orrick, Herrington & Sutcliffe press release, 1 July 2009, http://www.orrick.com/news_events/releases.asp?action=article&articleid=8981; corresponding document available at http://www.orrick.com/fileupload/3092.pdf.

74. US Department of Education National Center for Education Statistics, http://nces.ed.gov/.

75. Catherine Rampell, "Instead of Work, Younger Women Head to School," *New York Times*, 29 December 2011 [page A1]; also online at http://www.nytimes.com/2011/12/29/business/young-women-go-back-to-school-instead-of-work.html?_r=0.

76. Katharin Peter, Laura Horn, and C. Dennis Carroll, "Gender Differences in Participation and Completion of Undergraduate Education and How They Have Changed Over Time," National Center for Education Statistics, NCES: National Center for Education Statistics Report #2005-169; February 2005, http://nces.ed.gov/pubs2005/2005169.pdf.

77. Stephanie Ewert, "Male and Female Pathways through Four-Year Colleges: Disruption and Sex Stratification in Higher Education," *American Educational Research Journal* 47(4):744-773 (December 2010).

78. John R. Reynolds and Stephanie Woodham Burge, "Educational expectations and the rise in women's post-secondary attainments," *Social Science Research* 37(2):485-499 (June 2008).

79. Brian A. Jacob, "Where the boys aren't: non-cognitive skills, returns to school and the gender gap in higher education," *Economics of Education Review* 21(6):589-598 (December 2002).

80. "Female power; Women in the workforce," *The Economist* 394(8663):50 (Jan. 2, 2010). Also available online at http://www.economist.com/node/15174418.

81. US Department of Labor Bureau of Labor Statistics, "Women in the Labor Force: A Databook (2010 Edition), December 2010, http://www.bls.gov/cps/wlf-databook2010.htm.

82. It should be noted that males and females typically occupy different types of management roles. For example, according to the US Bureau of Labor Statistics, women are far more likely than men to be managers in human resources, medicine and health services, community and social services, event planning, and education—whereas men are far more likely than women to be managers in operations, industrial production, construction and engineering, financial analysis, and networks and computing systems administration.

83. "Female Fortune 500 CEOs At Record High," *Huffington Post*, 26 October 2011, http://www.huffingtonpost.com/2011/10/26/female-fortune-500-ceos_n_1034081.html .

84. Claire Cain Miller, "Search and Replace," *New York Times*, 23 August 2012 [page B1]; also online as "In Google's Inner Circle, a Falling Number of Women," 22 August 2012, at http://www.nytimes.com/2012/08/23/technology/in-googles-inner-circle-a-falling-number-of-women.html?pagewanted=all.

85. Jacob Rascon, "Jobs Report: Men win big, take traditionally female jobs," *KFOX14 News* (online), 3 January 2012, http://www.kfoxtv.com/news/news/men-take-most-jobs-including-traditional-women-job/nGDn9/.

86. Jennifer Turano, "Two Workers, Wearing One Hat," *New York Times*, 4 October 2009 [page BU8]; also online 3 October 2009 at http://www.nytimes.com/2009/10/04/jobs/04pre.html.

87. Time Warner Career Development, "Breakthrough Leadership Program," http://www.timewarner.com/careers/working-with-us/career-development/.

88. VOLVO Group Sustainability Report 2010, "Women on the Board," http://reports.volvogroup.com/en/SocialResponsibility/Diversity.html.

89. Leslie Kwoh, "Reverse Mentoring Cracks Workplace," *Wall Street Journal* (online), 28 November 2011, http://online.wsj.com/article/SB10001424052970203764804577060051461094004.html.

90. Ibid.

91. Cynthia L. Ogden, PhD; Margaret D. Carroll, MSPH; Lester R. Curtin, PhD; Molly M. Lamb, PhD; and Katherine M. Flegal, PhD, "Prevalence of High Body Mass Index in US Children and Adolescents, 2007-2008," *JAMA* 303(3):242-249 (20 January 2010), http://jama.jamanetwork.com/article.aspx?articleid=185233.

92. Centers for Disease Control and Prevention, "Childhood Obesity Facts," 7 June 2012, http://www.cdc.gov/healthyyouth/obesity/facts.htm.

93. R. Unger, L. Kreeger, and K. Christoffel, "Childhood obesity: Medical and familial correlates and age of onset," *Clinical Pediatrics* 29(7):368-373 (July 1990).

94. Centers for Disease Control and Prevention, "Attention-Deficit/Hyperactivity Disorder (ADHD)—Data and Statistics," 12 December 2011, http://www.cdc.gov/ncbddd/adhd/data.html.

95. Bridget M. Kuehn, "Increased Risk of ADHD Associated With Early Exposure to Pesticides, PCBs," *JAMA* 304(1):27-28 (7 July 2010).

96. Brett Reisman Greenberg, "How to recognize depressive disorders in children and adolescents," *JAAPA: Journal of the American Academy of Physician Assistants* 22(3):38-42 (March 2009); available online at http://media.haymarketmedia.com/documents/2/depressive0309sans_1355.pdf.

97. Uma Rao, Constance Hammen, and Shannon Daley, "Continuity of depression during the transition to adulthood: a 5-year longitudinal study of young women," *Journal of the American Academy of Child and Adolescent Psychiatry* 38(7):908-15 (July 1999).

98. Gordon Harper, Andrea Marks, and W. Michael Nelson III, "Teen depression: Overlooked and undertreated," *Patient Care* 36(12):37 (October 2002).

99. Andrew Jacobs, "The Adderall Advantage," *New York Times* (online), 31 July 2005, http://www.nytimes.com/2005/07/31/education/edlife/jacobs31.html?pagewanted=all.

100. Lauren Carroll, "Conduct policy changes reflect drug abuse," *The Chronicle - The Independent Daily at Duke University*, 6 September 2011, http://www.dukechronicle.com/article/conduct-policy-changes-reflect-drug-abuse.

101. Margaret Talbot, "Brain Gain: The underground world of 'neuroenhancing' drugs," *The New Yorker*, 27 April 2009, http://www.newyorker.com/reporting/2009/04/27/090427fa_fact_talbot.

102. Molly Young, "Kickstart My Heart: Adderall Days," *n+1* (online magazine), 23 January 2008, http://nplusonemag.com/kickstart-my-heart.

103. Stephanie Armour, "Workplaces quit quietly ignoring mental illness," *USA Today* (online), 22 August 2006, http://usatoday30.usatoday.com/money/workplace/2006-08-21-depressed-usat_x.htm?csp=3.

104. "Johnson & Johnson Merges Health, Wellness, and Safety and Likes the Results," *Mental Health Works* (online publication of the American Psychiatric Association and the American Psychiatric Foundation), 2005, http://www.workplacementalhealth.org/mhw1stqtr2005.

105. "From Incentives to Penalties: How Far Should Employers Go to Reduce Workplace Obesity?" *Knowledge@Wharton*, 9 January 2008, http://knowledge.wharton.upenn.edu/article.cfm?articleid=1876.

106. Barbara Sahakian and Sharon Morein-Zamir, "Professor's little helper," *Nature* 450(7173):1157-1159 (20 December 2007), http://www.nature.com/nature/journal/v450/n7173/full/4501157a.html.

107. Peter A. Rogerson and Daejong Kim, "Population distribution and redistribution of the baby-boom cohort in the United States: Recent trends and implications," *PNAS: Proceedings of the National Academy of Sciences* 102(43):15319-15324 (25 October 2005); also available online at http://www.pnas.org/content/102/43/15319.long.

108. National Alliance for Caregiving in collaboration with AARP, "Caregiving in the US, 2009," http://www.caregiving.org/data/Caregiving_in_the_US_2009_full_report.pdf.

109. US Department of Health & Human Services Administration on Aging, "Projected Future Growth of the Older Population," 23 June 2006, http://www.aoa.gov/aoaroot/aging_statistics/future_growth/future_growth.aspx.

110. Ibid.

111. Lisa Belkin, "When Mom and Dad Share It All," *New York Times* (online), 15 June 2008, http://www.ny-times.com/2008/06/15/magazine/15parenting-t.html?pagewanted=all.

112. This difference reflects women's greater likelihood of working part time, but even among full time workers (i.e., >35 hours per week), men worked slightly longer than women—8.3 hours compared to 7.8 hours. (Source: US Department of Labor Bureau of Labor Statistics, "American Time Use Survey Summary 2011 Results," 22 June 2012, http://www.bls.gov/news.release/atus.nr0.htm; referenced values are reflected in "Table 4. Employed persons working and time spent working on days worked by full- and part-time status and sex, jobholding status, educational attainment, and day of week, 2011 annual averages," http://www.bls.gov/news.release/atus.t04.htm.)

113. National Alliance for Caregiving and Center for Productive Aging, Towson University, "Corporate Eldercare Programs: Their Impact, Effectiveness, and the Implications for Employers," February 2008, http://www.caregiving.org/data/LifeCare_Study_2008.pdf.

114. Ken West, "How baby boomers juggle caring for kids and aging parents," *St. Louis Post-Dispatch* (online), 17 February 2011, http://www.stltoday.com/lifestyles/health-med-fit/golden-age/how-baby-boomers-juggle-caring-for-kids-and-aging-parents/article_c2b07338-2686-5e43-bb18-d3e11a7ea121.html.

115. Dan Schwabel, "The Beginning of the End of the 9-to-5 Workday?" *Time:Moneyland*, 21 December 2011, http://moneyland.time.com/2011/12/21/the-beginning-of-the-end-of-the-9-to-5-workday/.

116. Families and Work Institute, "Maryella Gockel, Flexibility Strategy Leader—Ernst & Young LLP," http://www.familiesandwork.org/site/events/wlla/site/honorees/2008bios/gockel.html.

117. Schwabel, "Beginning of the End of the 9-to-5 Workday?"

118. Bill McGuire, "Public College Costs Surge 8.3-percent," *ABC News* (online), 26 October 2011, http://abcnews.go.com/blogs/business/2011/10/public-college-costs-surge-8-3-percent/.

119. Federal Advisory Committee on Student Financial Assistance (ACSFA), "The Rising Price of Inequality: How Inadequate Grant Aid Limits College Access and Persistence," *ACSFA*—Washington DC, June 2010, http://chronicle.com/items/biz/pdf/acsfa_rpi.pdf.

120. Mary Pilon, "Student-Loan Debt Surpasses Credit Cards," *Wall Street Journal Real Time Economics* (blog), 9 August 2010, http://blogs.wsj.com/economics/2010/08/09/student-loan-debt-surpasses-credit-cards/.

121. Jenna Johnson, "One trillion dollars: Student loan debt builds toward yet another record," *Washington Post Campus Overload* (blog), 19 October 2011, http://www.washingtonpost.com/blogs/campus-overload/post/one-trillion-dollars-student-loan-debt-builds-toward-yet-another-record/2011/10/19/glQAbUoJyL_blog.html.

122. This estimate assumes the Stafford Federal Loan fixed interest rate of 6.8%, no fees, and a loan term of 10 years.

123. US Department of Labor Bureau of Labor Statistics, "Employment and Unemployment among Youth Summary," 21 August 2012, http://www.bls.gov/news.release/youth.nr0.htm.

124. Heidi Shierholz, Natalie Sabadish, and Hilary Wething, "The Class of 2012: Labor market for young graduates remains grim," Economic Policy Institute, 3 May 2012, http://www.epi.org/publication/bp340-labor-market-young-graduates/.

125. Peter J. Reilly, "Student Loan Problems - Help to Avoid Default," *Forbes* (online), 27 October 2011, http://www.forbes.com/sites/peterjreilly/2011/10/27/student-loan-problems-help-to-avoid-default/.

126. Tamar Lewin, "Student Loan Default Rates Rise Sharply In Past Year," *New York Times*, 13 September 2011 [page A14]; published online 12 September 2011 at http://www.nytimes.com/2011/09/13/education/13loans.html.

127. Walter Hamilton, "Student debt pushing more people toward bankruptcy, lawyers say," *Los Angeles Times* (online), 7 February 2012, http://articles.latimes.com/2012/feb/07/business/la-fi-student-loan-bankruptcy-20120208.

128. Claudio Sanchez, "How Has Student Loan Debt Shaped Your Life?" NPR's *Talk of the Nation*, 31 October 2011, http://www.npr.org/2011/10/31/141870267/how-has-student-loan-debt-shaped-your-life.

129. Cryer, "Recruiting and Retaining: The Next Generation of Nonprofit Sector Leadership."

130. Non-base pay components of compensation could include financial benefits for single parents, wellness and transportation reimbursements, and alternative work arrangements (e.g., option to telecommute to work on a flexible schedule to reduce costs of child care and commuting).

131. Vijay Govindarajan and Julie B. Lang, "Southwest Airlines Corporation," Tuck School of Business at Dartmouth William F. Achtmeyer Center for Global Leadership, 2002, http://mba.tuck.dartmouth.edu/pages/faculty/chris.trimble/osi/downloads/20012_SouthwestCase.pdf.

132. National Institutes of Health Office of Intramural Training & Education Undergraduate Scholarship Program, 17 April 2012, https://www.training.nih.gov/programs/ugsp.

133. Existing loan forgiveness programs fall into four categories: 1) programs designed to improve recruitment of federal employees; 2) programs designed to increase recruitment and retention of certain classes of workers serving target populations (e.g., children in low-income families); 3) programs designed to encourage graduates of specific universities to pursue public service careers; and 4) volunteer-service based programs.

134.

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