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A LABOR MARKET THAT WORKS: CONNECTING TALENT WITH OPPORTUNITY IN THE DIGITAL AGE

JUNE 2015

HIGHLIGHTS

Better, faster matching

Economic impact

Talent management for companies

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MGI is led by three McKinsey & Company directors: Richard Dobbs, James Manyika, and Jonathan Woetzel. Michael Chui, Susan Lund, and Jaana Remes serve as MGI partners. Project teams are led by the MGI partners and a group of senior fellows, and include consultants from McKinsey & Company's offices around the world. These teams draw on McKinsey & Company's global network of partners and industry and management experts. In addition, leading economists, including Nobel laureates, act as research advisers.

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A LABOR MARKET THAT WORKS: CONNECTING TALENT WITH OPPORTUNITY IN THE DIGITAL AGE

JUNE 2015

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PREFACE

In advanced and emerging economies alike, individuals are struggling to find work and build careers that make use of their skills and capabilities. The strains in global labor markets have been worsening for decades, and the challenges have been magnified in the aftermath of the global recession. In many countries, concerns about employment have been exacerbated by long-term trends of stagnant wage growth and automation. But at the same time, there has been a constant refrain from employers about the difficulties of finding talent with the right skills. The growing use of online talent platforms may begin to address these problems—and even to swing the pendulum slightly in favor of workers by empowering them with broader choices, more mobility, and more flexibility. These tools are fundamentally altering the way individuals go about searching for work and the way many employers approach hiring.

The power of a digital platform is not always apparent until it reaches a certain critical mass. Online talent platforms appear to be approaching exactly that sort of tipping point. As these platforms rapidly expand the size of their user networks and the volume of data they can synthesize, the cumulative benefits are growing larger. We believe there is potential for online talent platforms to create real macroeconomic impact in the years ahead—and as these technologies continue to evolve, they may change the world of work in ways that we can only begin to imagine today. This research aims to build a deeper understanding of how these platforms can affect labor markets, although it does not attempt to address the many broader issues affecting employment prospects, including wage stagnation, automation, and aggregate demand.

This project builds on a body of previous McKinsey Global Institute (MGI) research studies on labor markets, including *The world at work: Jobs, pay, and skills for 3.5 billion people*; *Help wanted: The future of work in advanced economies*; and *An economy that works: Job creation and America's future*. It also continues our efforts to analyze the economic impact of the Internet and new digital technologies, which has formed the basis of recent MGI reports on topics such as big data, open data, social technologies, and the Internet of Things.

This research was led by James Manyika, an MGI director based in San Francisco, and Susan Lund, an MGI partner based in Washington, DC. The project team, led by John Valentino and Kelsey Robinson, included Malte Bedürftig, Kathy Gerlach, Liz Kuenstner, and Amber Yang. Richard Dobbs, an MGI director based in London; Jacques Bughin, a McKinsey director based in Brussels; and Michael Chui, an MGI partner based in San Francisco, supplied valuable feedback and insight. Lisa Renaud and Peter Gumbel provided editorial support. Many thanks go to our colleagues in operations, production, and external relations, including Marisa Carder, Matt Cooke, Vanessa Gotthainer, Deadra Henderson, Julie Philpot, and Rebeca Robboy.

Numerous insights and challenges from our academic advisers enriched this report. We extend sincere thanks to Martin N. Baily, the Bernard L. Schwartz Chair in Economic Policy Development at the Brookings Institution; Erik Brynjolfsson, the Schussel Family Professor of Management Science, professor of information technology, and director of the MIT

Center for Digital Business at the MIT Sloan School of Management; Michael Spence, Nobel laureate and William R. Berkley Professor in Economics and Business at NYU Stern School of Business; and Laura Tyson, S. K. and Angela Chan professor of Global Management at Haas School of Management, University of California at Berkeley.

This project benefited immensely from the expertise of McKinsey colleagues around the world, including members of the Firm's High Tech Practice, the Organization Practice, and MGI. We thank Bruce Fecheyr-Lippens, Bryan Hancock, Paige Harazin-Masi, Jordan Jaffee, Jocelene Kwan, Meredith Lapointe, Xiujun Lillian Li, Anu Madgavkar, Sree Ramaswamy, and Bill Schaninger.

This independent MGI initiative is based on our own research, the experience of our McKinsey colleagues more broadly, and McKinsey's Technology, Media & Telecom Practice and its collaboration with LinkedIn, which included data and insights from Reid Hoffman, Allen Blue, Jeff Weiner, Laura Dholakia, Brian Rumao, Pablo Chavez, Hani Durzy, Erin Hosilyk, Giovanni Iachello, Andrew Kritzer, Igor Perisic, James Raybould, Christine Schmidt, Dan Shapero, and Boyu Zhang. In addition, this project benefited from input provided by other industry and academic researchers as well as data from Burning Glass. We thank Jonathan Hall of Uber; Gad Levanon of The Conference Board; Michael Mandel of the Progressive Policy Institute; Max Simkoff of Evolv; and Hal Varian of Google. In addition, we are grateful to Zoë Baird, Philip D. Zelikow, and others at the Markle Foundation's Rework America initiative (of which we have been a part). We appreciate their insights regarding employment and skills in the digital age.

This report contributes to MGI's mission to help business and policy leaders understand the forces transforming the global economy, identify strategic locations, and prepare for the next wave of growth. As with all MGI research, this work is independent and has not been commissioned or sponsored in any way by any business, government, or other institution. We welcome your comments on the research at MGI@mckinsey.com.

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June 2015

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A complete technical appendix describing the methodology and data sources used in this research and a separate appendix of country insights are available at www.mckinsey.com/mgi.

IN BRIEF

A LABOR MARKET THAT WORKS: CONNECTING TALENT WITH OPPORTUNITY IN THE DIGITAL AGE

Labor markets around the world have not kept pace with rapid shifts in the global economy, and their inefficiencies take a heavy toll. Millions of people cannot find work, yet sectors from technology to health care cannot find people to fill open positions. Many who do work feel overqualified or underutilized.

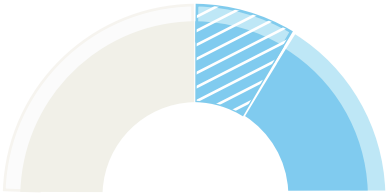
Online talent platforms can ease a number of these dysfunctions by more effectively connecting individuals with work opportunities. They include websites (such as Monster.com and LinkedIn) that aggregate individual resumes with job postings from traditional employers as well as the rapidly growing number of digital marketplaces for services, such as Uber and Upwork. Even if these platforms touch only a fraction of the global workforce, they can generate significant benefits for economies and for individuals. While their growth and adoption has been dramatic, they are still evolving in terms of capabilities and potential.

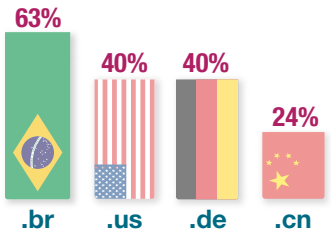
- In countries around the world, 30 to 45 percent of the working-age population is unemployed, inactive in the workforce, or working only part-time. In the United States, the United Kingdom, Germany, Japan, India, Brazil, and China, this amounts to 850 million people.
- Online talent platforms serve as clearinghouses that can inject new momentum into job markets. By 2025, we calculate they could add $2.7 trillion, or 2.0 percent, to global GDP and increase employment by 72 million full-time-equivalent positions.
- Up to 540 million individuals could benefit from online talent platforms by 2025. As many as 230 million could shorten search times between jobs, reducing the duration of unemployment, while 200 million who are inactive or working part-time could work additional hours through freelance platforms. As many as 60 million people could find work that more closely suits their skills or preferences, and another 50 million could shift from informal to formal employment.
- Countries with persistently high unemployment and low participation, such as South Africa, Spain, and Greece, would potentially benefit most. Among advanced economies, the United States stands to realize significant gains because of the relative fluidity of its job market. By contrast, the relative potential is lower in Japan and China due to low unemployment and other barriers that limit adoption.
- Online talent platforms create transparency around the demand for skills, enabling young people to make more informed educational choices. This can create an opportunity to improve the allocation of some $89 billion in annual spending on tertiary education in the United States, the United Kingdom, Germany, Japan, India, Brazil, and China.
- Companies can use online talent platforms to identify and recruit candidates—and then to motivate them and help them become more productive once they start work. We calculate that adoption could increase output by up to 9 percent and reduce costs related to talent and human resources by as much as 7 percent.

Capturing this potential will require expanded broadband access, updated labor market regulations, systems for delivering worker benefits, and clearer data ownership and privacy rules. There is also an enormous opportunity to harness the data being gathered by these platforms to produce insights into the demand for specific skills and occupations as well as the career outcomes associated with particular educational institutions and programs. More accurate and predictive modeling could help individuals make more informed decisions about education, training, and career paths.

A labor market that works: Connecting talent with opportunity in the digital age

30-50% of the working-age population is inactive, unemployed, or working part-time...

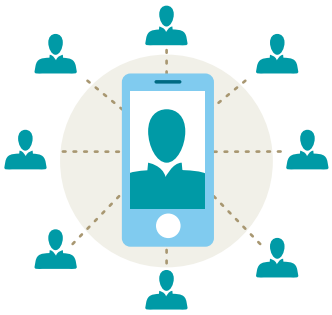




...yet large shares of employers say they can't fill positions

Online talent platforms:

- Match people and jobs
- Create marketplaces for freelance work



- Help firms hire and manage talent
- Reveal trends in the demand for skills

Potential impact by 2025

$2.7 trillion

in annual global GDP (equivalent to the GDP of the United Kingdom)

540 million

individuals around the world could benefit

275 bps

average improvement in company profit margins

The long-term opportunity:

Harnessing data to inform education and career choices

EXECUTIVE SUMMARY

Technology and globalization have created a more dynamic and fast-paced business environment, but the way economies connect most individuals with work has been slow to respond. Millions are unable to find jobs, even as companies report that they cannot find the people they need. Meanwhile, a significant proportion of workers feel overqualified or disengaged in their current roles. These issues translate into costly wasted potential for the global economy. But more importantly, they represent hundreds of millions of people coping with unemployment, underemployment, stagnant wages, and discouragement.

Labor markets are ripe for transformation, and it is finally arriving—in the form of digital platforms, the very same technologies that have reshaped the business and consumer environment in areas such as e-commerce.

Online talent platforms are marketplaces and tools that can connect individuals to the right work opportunities. The sheer size of their user networks expands the pool of possibilities, and their powerful search capabilities and algorithms filter those possibilities in an efficient and personalized way. These platforms are rapidly evolving in scope and will continue to do so in the years ahead.

$2.7T
potential increase in annual global GDP

Some, such as Monster.com and LinkedIn, match job seekers and traditional employers. These platforms help individuals showcase their skills, availability, and other traits to a wider set of potential employers; they also equip them with better information about opportunities and career paths. Others match customers with contingent workers who are available to perform specific tasks or services, in specific times and places. These may involve freelancers with esoteric skills performing knowledge work or individuals with no credentials driving passengers or doing household chores. Freelancing is not a new concept; many professionals, from editors to accountants, have traditionally chosen to operate on a self-employed, project basis. Even today contingent workers account for only a small fraction of the overall labor force in advanced economies. But new online marketplaces that facilitate transactions in a wide range of services are growing rapidly, giving rise to what some have called the "gig economy."[1]

Online talent platforms have already attracted hundreds of millions of users around the world. As they grow in scale, they are becoming faster and more effective clearinghouses that can inject momentum and transparency into job markets while drawing in new participants. This research examines their potential to create economic impact by addressing some longstanding challenges in labor markets. By 2025, our supply-side analysis shows that online talent platforms could raise global GDP by up to $2.7 trillion and increase employment by 72 million full-time-equivalent positions.

The actual number of individuals who stand to gain is much larger. In total, some 540 million people—a number equivalent to the entire population of the European Union—could find employment, increase the number of hours they work, or find jobs that are a better fit.

Beyond their impact on individuals and the broader economy, talent platforms can help companies transform the way they hire, train, and manage their employees. The early

[1] We define the "gig economy" as contingent work that is transacted on a digital marketplace. This definition excludes ongoing part-time employment and freelance work that is not contracted on an online talent platform.

adopters are discovering that better-informed decisions about human capital produce better business results. In addition, talent platforms could improve signaling about the skills that are actually in demand across the economy. As this information shapes decisions about education and training, the entire skills mix of the economy could adjust more accurately over time.

Online talent platforms will not sweep away all the roadblocks that impede the smooth functioning of labor markets. They cannot, for example, address weak aggregate demand or create better-quality jobs across the board. But they can make a much-needed difference in how well economies perform one of their most basic tasks: connecting individuals with productive and fulfilling work.

There is a stubborn disconnect between people and jobs

Labor markets around the world suffer from a range of inefficiencies that pose hurdles for individuals while lowering overall employment and productivity (Exhibit E1). The Great Recession exacerbated these issues, but they are not simply a reflection of the business cycle. In many countries, labor markets have been deteriorating for decades.

First, there are growing problems matching jobs and workers. The skills that many workers have may not match the opportunities at hand, information gaps may prevent qualified job seekers from ever learning about promising openings, or the right workers may be in the wrong geographies. While economists debate whether there is evidence of a skills gap for the aggregate economy (given that wages have not been rising), employers have no doubt that filling specific roles that require specific skills is often difficult. In a 2014 Manpower survey of 37,000 employers around the world, 36 percent said they could not find the talent they needed. Shortages of software engineers and big data analysts often make the headlines, but a wide range of talent can be hard to find, including electricians, welders, commercial drivers, and health-care workers.

30–45%
of the global working-age population is unemployed, inactive, or part-time

At the same time, 30 to 45 percent of the working-age population in countries around the world goes underutilized—meaning they are unemployed, inactive, or working only part-time. This translates into some 850 million people in the United States, the United Kingdom, Germany, Japan, Brazil, China, and India alone. While some have opted out of the workforce by choice or prefer part-time employment, this number includes many millions who would like the means to raise their incomes. Youth unemployment is an alarming aspect of this underutilization. Almost 75 million youth are officially unemployed, but hundreds of millions more are inactive (that is, not involved in education, employment, or training). Without a solid start to propel their careers forward, their economic prospects will be lower over their entire lifetimes.

Even those who do have jobs may not be realizing their full potential. Many college graduates, for example, hold jobs that do not require their degrees. Thirty-seven percent of global respondents to a recent survey of job seekers conducted by LinkedIn said their current job does not fully utilize their skills or provide enough challenge. Without real engagement, boredom and frustration set in, and productivity suffers.

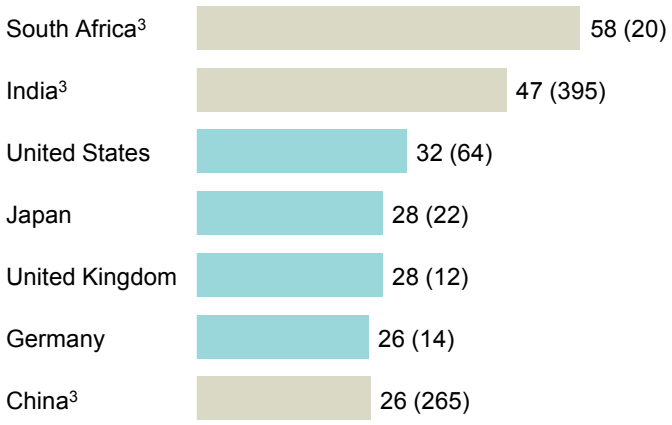
Low and declining labor market fluidity compounds the problem. When people switch jobs voluntarily, they often find work that better suits them—and they typically garner higher wages in the process. But the rate of job changing is limited in most mature economies and has fallen sharply in the United States. A more rigid labor market also limits the opportunities available to the unemployed and to new entrants to the workforce.

Exhibit E1

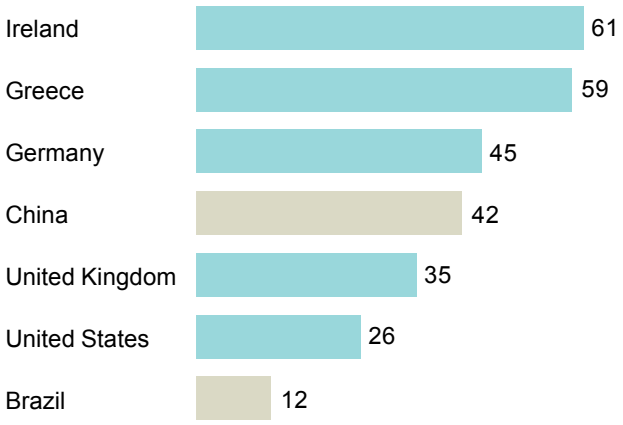
Labor markets around the world suffer from a range of long-standing problems

Emerging market

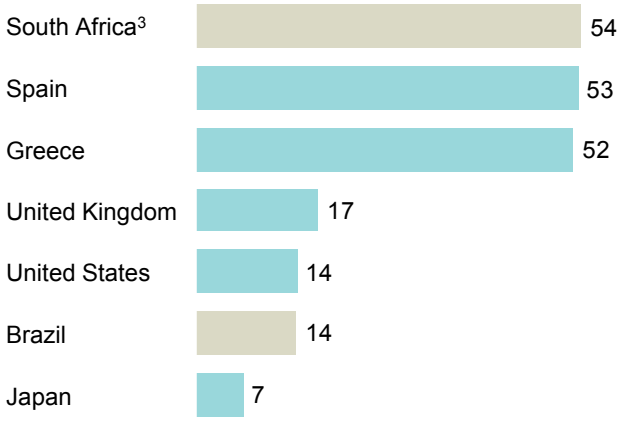
Unemployment and inactivity, 2014 or latest[1]
% of working-age population (million people)[2]



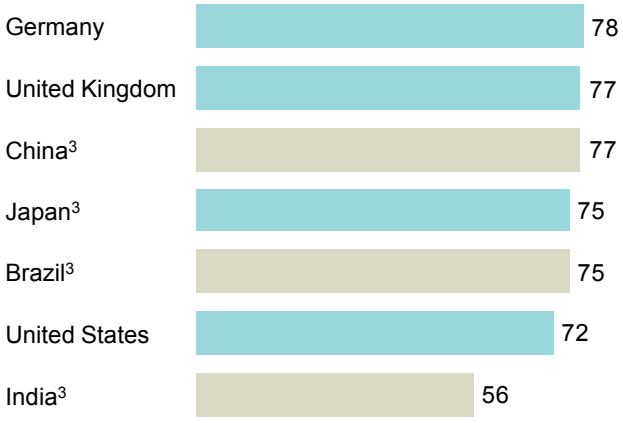
Long-term unemployment (>1 year), 2013
% of total unemployment



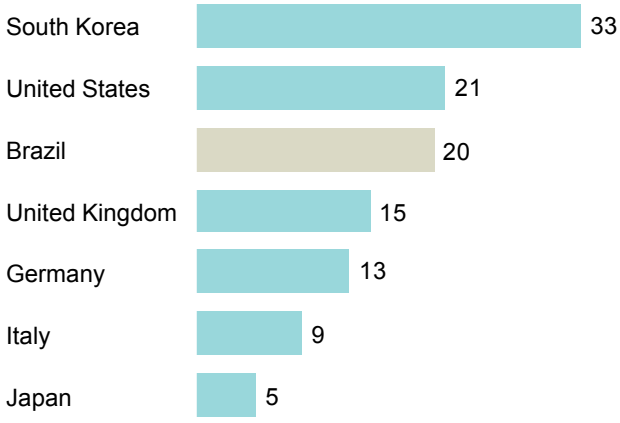
Youth unemployment rate, 2014 or latest
% of the labor force aged 15–24



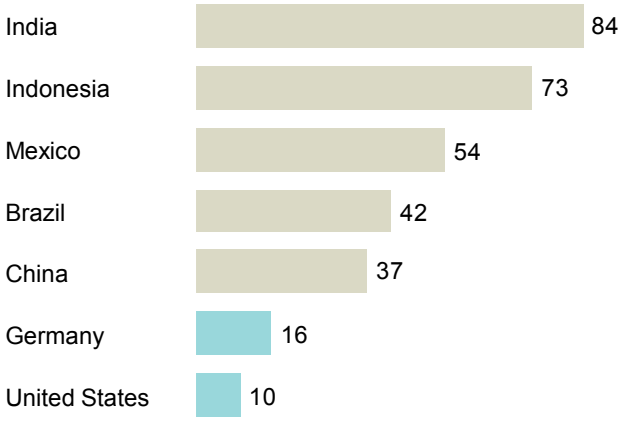
Labor force participation, 2014 or latest
% of working-age population[2]



Labor market fluidity, 2013
People with <1 year of job tenure (% of total employment)



Informal employment, latest available data[4]
% of non-agricultural employment



1 Inactivity refers to persons who do not have a job and are not looking for job opportunities.
2 Working-age population includes ages 15–64.
3 2013 data.
4 Informal employment is defined as those who work in the informal sector (in enterprises that operate outside the view of tax authorities and regulators) or are informally employed in the formal sector.

SOURCE: OECD; UN; World Bank; ILO; national sources; McKinsey Global Institute analysis

Another problem is the extent of informal employment, especially in emerging economies. This includes people working for enterprises that operate outside the view of regulators or tax authorities as well as self-employment in microbusinesses. Even in advanced economies, there is a great deal of informal household and construction work. This may impose both personal and economic costs, because informality is associated with low productivity.

Online talent platforms bring transparency and efficiency to labor markets

Talent platforms are not a cure-all for labor markets, but they can begin to address some of the issues described above. They can take the form of websites, mobile apps, or proprietary corporate systems. They gather a huge volume of information regarding both individual workers and employers or work projects, then synthesize this data to match individuals with job opportunities and produce better work outcomes (Exhibit E2).

Exhibit E2

We define online talent platforms based on data usage and functionality

	Digital tools that enable users to…	Example platforms, 2015
Matching individuals with traditional jobs	▪ Post full-time or part-time jobs ▪ Create online resumes of individuals ▪ Search for talent or work opportunities based on extended matching attributes ▪ Provide transparency into company or worker reputations, skills, and other traits	Careerbuilder Glassdoor Indeed LinkedIn Monster Vault Viadeo Xing
Online marketplaces for contingent work	▪ Connect individuals with contingent or freelance projects or tasks ▪ Facilitate transactions by providing transparency on reputation and ratings	Amazon Home Services Angie's List TaskRabbit Uber Upwork
Talent management	▪ Assess candidates' attributes, skills, or fit ▪ Personalize onboarding, training, and talent management ▪ Optimize team formation and internal matching ▪ Determine the best options for training and skill development	Good.co PayScale Pymetrics beta ReviewSnap

Note: The landscape of providers and solutions is evolving rapidly. These examples reflect a snapshot as of May 2015.

SOURCE: McKinsey Global Institute analysis

The largest segment by far (as of mid-2015) is made up of talent platforms that match individuals with traditional jobs. This includes sites such as Indeed, Careerbuilder, Monster.com, Germany's Xing, and France's Viadeo. LinkedIn is the largest platform of this type, with more than 364 million members worldwide, and it facilitated nearly one million new hires in 2014. Employers can access not only the same kind of information on traditional resumes but also reputational information about job seekers. This may include endorsements from colleagues on hard and soft skills, customer ratings, and data gleaned from online and social media activities. LinkedIn alone has gathered more than three billion individual endorsements. Recruiters and human resources professionals increasingly use these talent platforms for "passive recruiting"—that is, they seek out and contact individuals they

want rather than placing an ad and waiting to see who responds. This trend favors highly specialized talent in fast-growing industries.

Another category of online talent platforms connects contingent workers with specific tasks or assignments. Although the number of people employed on such platforms is small today (accounting for less than 1 percent of the US working-age population by our estimate), these are growing rapidly. Traditional employers and startups can use these platforms to call in specialists for an assignment on short notice. Upwork (formerly Elance-oDesk), for example, has created online marketplaces connecting some four million businesses with more than nine million freelancers from 180 countries, performing tasks such as web development, graphic design, and marketing. Freelance platforms can improve the ability of these workers to market their skills more widely and find new clients. Some of these platforms are aimed at consumers rather than companies. Individuals can turn to TaskRabbit and Amazon Home Services, among others, to hire someone nearby for errands or home repairs. A growing number of these platforms deliver one type of specialized service, such as Uber, Lyft, and Sidecar for taxi services and UrbanSitter and Care.com for child care.

The quality of jobs being created through these on-demand service platforms is coming under increased scrutiny. For some workers, participation in contingent work may be their only option for getting by in a difficult labor market. But there is growing evidence that many use them to supplement income from other jobs. The availability of more flexible and self-directed options can also boost participation among people who are out of the workforce altogether.

Online talent platforms offer a number of other benefits to individual workers. The availability of comprehensive online job listings provides them with more options and a better understanding of the wages they can command on the open market. Voluntary job changes are correlated with higher wages—so a more dynamic job market creates more opportunity for workers to move up the pay scale while moving into new roles.[2] Talent platforms such as Glassdoor and Vault gather anonymous reviews and salary information provided by current and former employees of specific organizations; this offers individuals new visibility into what it would be like to work for a given company, increasing the odds that they will choose a work environment they will enjoy.

Over time, new capabilities are emerging that have the potential to help a much wider range of people. Talent platforms are uniquely positioned to track the positions that employers are filling, the skills required, and career pathways that take people from education and entry-level positions into more fulfilling work. They can empower individuals—from high school students to workers seeking a mid-career change—with better information about educational investment and training.

It is important to note that the individual platforms, companies, and functionalities described in this report represent a snapshot of where this fast-moving field stands in 2015. These are early days, and as talent platforms evolve, they may grow tremendously in scope. Consider how digital platforms expanded in areas such as e-commerce. Amazon, for instance, started as an online bookseller but has introduced innovations and business lines that have sent ripple effects through multiple industries; few anticipated these developments in the company's early years. Online talent platforms may similarly morph and add new capabilities that cannot be predicted today.

[2] See, for example, José Mustre-del-Río, "Following the leaders: Wage growth of job switchers," *The Macro Bulletin*, Federal Reserve Bank of Kansas City, December 19, 2014. See also the *Economic Report of the President*, 2015.

Online talent platforms can support economic growth and improve work outcomes for millions of individuals

As these platforms continue to attract more participants and employers, their impact on the broader economy could be significant. We assess this potential at several levels: the direct impact on raising global GDP and employment; the indirect benefit from reducing spending on unemployment benefits and misallocations in education programs; and dynamic long-term benefits such as enhanced innovation and creative destruction.

Contributing $2.7 trillion to global GDP annually by 2025

To calculate the potential effects on GDP and employment, we analyze three channels of impact: increasing labor force participation, reducing unemployment, and raising labor productivity. In each of these areas, we make projections based on early empirical evidence that has been scaled up using modest assumptions. Our projections look at 2025, when Internet penetration will be higher and talent platforms will have evolved to a substantial degree. It is also important to note that our model also assumes that economies will have fully recovered from the Great Recession, with no slack in aggregate demand or the labor market; this implies there are jobs available for anyone who wants to work.

- **Increasing labor force participation and hours worked among part-time employees.** There is evidence from around the world that some people would work more hours if they could. A US survey, for example, reports that three-quarters of stay-at-home mothers would be likely to work if they had flexible options.[3] A 2015 global survey by LinkedIn found that almost 40 percent of respondents who work part-time would increase their hours for a proportionate pay increase. The flexible employment model created by new digital marketplaces for contingent work can appeal to people who do not want traditional full-time positions—and if even a small fraction of inactive youth and adults use these platforms to work a few hours per week, the economic impact would be huge.

- **Reducing unemployment.** With their powerful search capabilities and sophisticated screening algorithms, online talent platforms can speed the hiring process and cut the time individuals spend searching between jobs. By aggregating data on candidates and job openings across entire countries or regions, they may address some geographic mismatches and enable matches that otherwise would not have been made. People who have felt trapped in stagnant local economies can gain insight into the opportunities they could realize by moving even a few hundred miles. This dynamic could be especially important for workers across Europe, where employment prospects differ radically from country to country.

- **Raising labor productivity.** Online talent platforms help put the right people in the right jobs, thereby increasing their productivity along with their job satisfaction. There are also large productivity gains to be captured from drawing people who are engaged in informal work into formal employment, especially in emerging economies. Both of these effects could increase output per worker, raising global GDP.

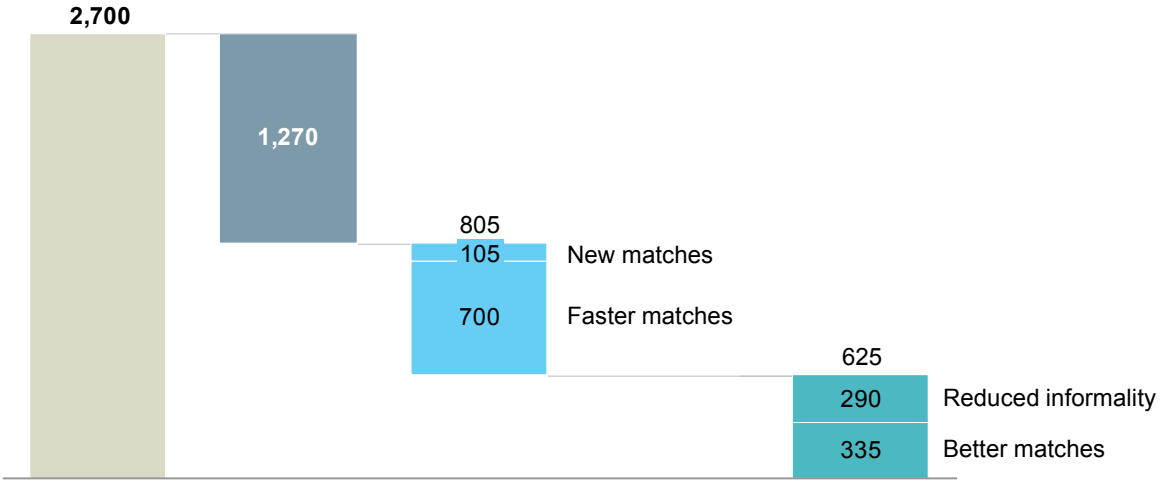
The model results show that by 2025, even with conservative assumptions, online talent platforms could increase global GDP by $2.7 trillion annually—an impact that is equivalent to the entire GDP of the United Kingdom (Exhibit E3). This would represent an increase of 2.0 percent over current projections for world GDP in that year.

[3] Kaiser Family Foundation/*New York Times*/CBS News poll of 1,002 non-employed US adults, December 2014.

Exhibit E3

Online talent platforms have the potential to increase global GDP by $2.7 trillion and employment by 72 million full-time equivalents by 2025

GDP contribution
$ billion



	Total impact, 2025	Higher participation[1]	Reduced unemployment	Higher productivity
GDP increase %	2.0	0.9	0.6	0.5
Additions to the workforce Million FTE[2]	72	47	25	

1 Includes increasing participation among people who currently do not work and increasing hours among part-time workers.
2 Full-time equivalents.
NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

Because such a large population is currently inactive or underutilized, the largest impact (some $1.3 trillion) comes from increasing labor participation and hours worked. Reducing unemployment by shortening job searches and enabling matches that would otherwise not have happened is the second-largest effect, worth $805 billion. Raising productivity by facilitating better job matches and a shift from informal to formal employment raises global GDP by $625 billion.

The impact on GDP and employment varies across countries, depending on their labor market characteristics, demographics, and Internet usage. We created a detailed model for seven of the world's largest economies and then extrapolated the results globally (Exhibit E4). The largest potential to raise GDP is found in countries with persistently high levels of unemployment and low participation, including South Africa, Greece, and Spain. The power of online talent platforms for these and similar countries lies in reducing the duration of unemployment and increasing hours worked.[4] For the United States and most of Western Europe, the largest impact comes from enabling more people to work through fractional employment platforms. Most emerging economies can capture significant gains through moving people from informal to formal employment.

[4] One caveat is that this is a supply-side analysis that assumes jobs will be available for people who want them.

Exhibit E4

The potential impact of online talent platforms varies across countries

GDP >0.9% 0.5–0.9% <0.4% **Employment** >3% 2–3% <2%

Economies	GDP %	Share of GDP (%) Increased participation	Faster matches	New matches	Better matches	Reduced informality	GDP $ billion	Employment % of employees	Employment 1,000 people
Advanced									
Spain	3.3	0.8	1.7	0.4	0.2	0.2	58	4.4	748
Greece	3.2	0.9	1.5	0.4	0.2	0.2	10	4.3	161
Portugal	2.5	0.8	1.0	0.3	0.1	0.2	7	3.2	140
Italy	2.5	1.0	0.9	0.2	0.2	0.2	52	3.1	734
United States[1]	2.3	1.1	0.6	0.1	0.4	0.1	512	2.7	4,091
France	2.3	1.1	0.7	0.1	0.3	0.1	64	2.9	784
Belgium	2.2	1.1	0.5	0.1	0.3	0.2	12	2.7	120
Sweden	2.1	0.9	0.6	0.1	0.4	0.1	11	2.5	119
Finland	2.1	1.0	0.5	0.1	0.3	0.1	5	2.5	61
Denmark	2.1	0.9	0.5	0.1	0.4	0.1	6	2.4	67
Canada	2.0	1.0	0.5	0.1	0.4	0.1	41	2.4	436
United Kingdom[1]	2.0	0.9	0.5	0.1	0.4	0.1	68	2.4	766
Australia	1.9	1.0	0.4	0.1	0.4	0.1	28	2.2	271
Germany[1]	1.7	0.8	0.4	0.1	0.4	0.1	70	1.9	708
Switzerland	1.7	0.9	0.3	0.1	0.4	0.1	8	1.9	98
Singapore	1.7	1.0	0.2	0.0	0.3	0.1	9	1.9	67
South Korea	1.6	0.9	0.2	0.0	0.4	0.1	39	1.8	416
Netherlands	1.6	0.7	0.3	0.0	0.4	0.1	14	1.8	147
Austria	1.5	0.8	0.3	0.0	0.3	0.1	7	1.7	70
Japan[1]	1.5	0.7	0.2	0.0	0.4	0.1	78	1.6	906
Emerging									
South Africa	3.9	1.1	2.1	0.1	0.2	0.4	20	5.0	861
Colombia	3.1	0.9	1.4	0.2	0.1	0.5	25	3.7	946
Philippines	2.7	0.9	0.9	0.1	0.2	0.6	22	2.9	1,359
Egypt	2.7	1.4	0.5	0.1	0.2	0.4	21	3.2	945
Russia	2.5	0.9	0.7	0.1	0.2	0.6	82	2.5	1,605
Hungary	2.5	1.0	0.8	0.2	0.2	0.4	7	2.9	110
Nigeria	2.5	1.3	0.3	0.1	0.2	0.7	20	2.6	1,889
Turkey	2.5	1.3	0.4	0.1	0.3	0.4	41	2.8	799
Brazil[1]	2.4	0.8	0.8	0.1	0.1	0.6	69	2.6	2,686
Peru	2.3	0.8	0.5	0.1	0.2	0.8	12	2.0	320
Chile	2.3	0.9	0.8	0.1	0.2	0.3	12	2.8	210
Mexico	2.3	1.0	0.6	0.1	0.1	0.4	60	2.6	1,349
Poland	2.2	0.9	0.6	0.1	0.4	0.2	27	2.5	353
Indonesia	2.2	0.9	0.8	0.1	0.1	0.3	57	2.7	3,538
Kenya	2.2	1.1	0.4	0.1	0.2	0.4	3	2.4	536
Saudi Arabia	2.1	1.3	0.2	0.1	0.3	0.2	32	2.5	276
Czech Republic	1.9	0.8	0.4	0.1	0.4	0.1	7	2.1	103
Malaysia	1.9	1.1	0.1	0.0	0.2	0.5	16	2.0	286
India[1]	1.9	1.2	0.2	0.0	0.2	0.3	222	2.2	11,343
Thailand	1.8	0.8	0.1	0.0	0.1	0.8	20	1.3	511
China[1]	1.5	0.7	0.4	0.0	0.1	0.2	485	1.7	12,868

1 Detailed results and insights are available for these countries.
NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

Improving work outcomes for some 540 million people

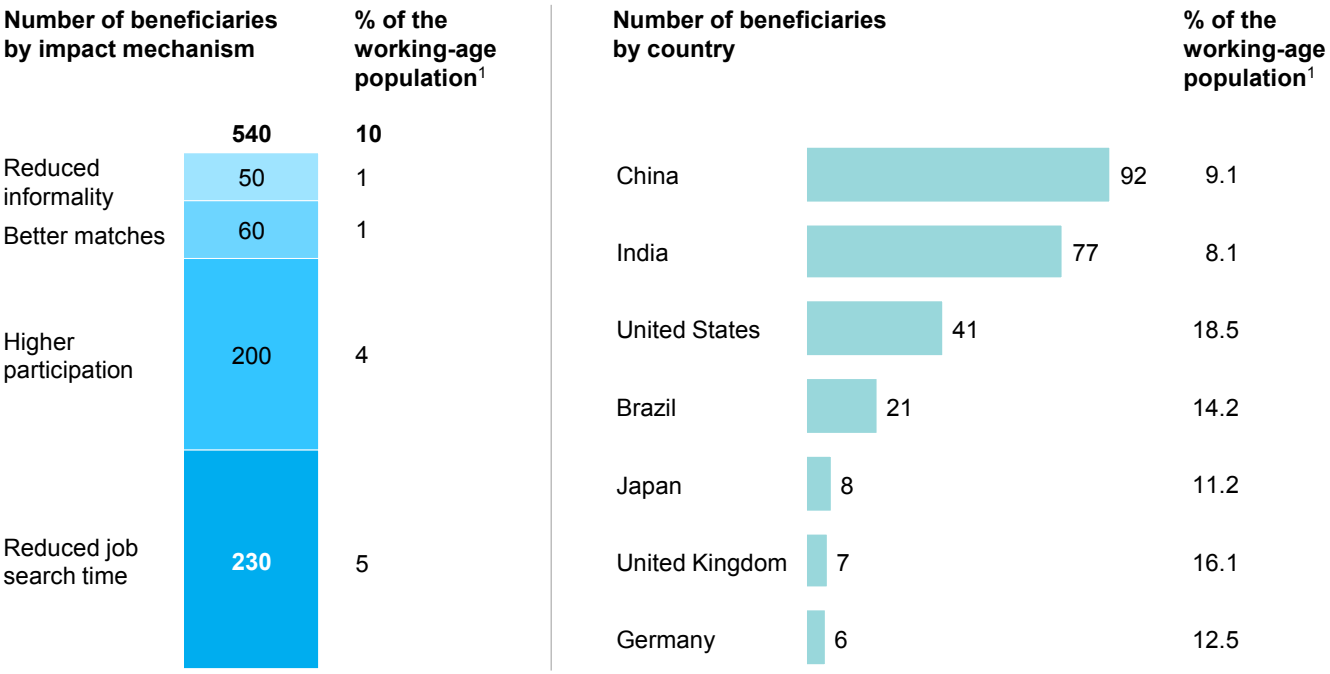
Our model shows that online talent platforms could increase global employment by 72 million full-time-equivalent positions (or 2.4 percent) by 2025. The number of individuals who could reduce job search time, add hours, or find better jobs is much larger, however. In total, some 540 million people around the world—roughly 10 percent of the global working-age population—could benefit from online talent platforms by 2025 (Exhibit E5). This number is equivalent to the entire population of the European Union.

This includes 230 million who would have shorter job searches, reducing the amount of time they spend unemployed, or who would find job opportunities they otherwise would have missed. Some 200 million people who are not in the labor force or are currently working part-time could add at least a few more hours per week through contingent work platforms. Another 60 million could find jobs that better match their skills or preferences. And 50 million people in informal employment could find formal-sector jobs that give them better prospects for stability and growth.

Exhibit E5

By 2025, online talent platforms could benefit some 540 million people, or 10 percent of the working-age population

Million people, 2025



The total number of people who could potentially benefit far exceeds the 72 million full-time equivalent jobs created. The 540 million figure includes people who will experience faster job searches, people who are already employed but find better jobs, people who add hours on freelance platforms, and people who move into the formal sector.

1 Ages 15–64.
NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

Thus far, most users of the online talent platforms focusing on traditional jobs have been educated and skilled professionals. They have also been the biggest beneficiaries, as many are already receiving job offers through passive recruiting and watching as employers bid up their salaries. While these platforms are expanding into a broader range of occupations, sectors, and geographies, workers who lack credentials or distinctive skills have not migrated onto these sites to the same degree. But as job searching becomes more digitized

for everyone, less skilled workers may similarly benefit. However, it is also possible that employers will be able to replace them more easily and at lower cost, squeezing their wages. Showcasing new dimensions of profiles of individual workers, such as their soft skills, traits, and endorsements from colleagues and superiors, will be important. This may allow workers without credentials to highlight traits that set them apart, such as work ethic, creativity, and customer service.

Reducing public spending on unemployment and making education spending more effective

By reducing the number of unemployed people and the length of time spent searching for a job, online talent platforms could reduce the demand for unemployment benefits as well as public-sector job-placement, training, and subsidy programs. They can improve the way these programs function by applying better data, new approaches, and new technologies—as well as reducing the overall need for the government to act as an intermediary between the unemployed and the job market. They can also improve data sharing and coordination between agencies at various levels of government as well as creating a basis for partnerships involving private-sector employers and education providers.

9%
reduction in public spending on labor market programs

We estimate that spending on labor market programs could be lowered by as much as 9 percent—or $18 billion annually—as online talent platforms cut the length of time people are out of work in the United States, the United Kingdom, Germany, and Japan alone. These savings could then be reinvested in other productive uses, which would also add to GDP growth over the long term, although we have not calculated this effect.

Similarly, considerable public and personal resources go into educating people who end up not working or do not use their training in their jobs. While labor market outcomes are not the sole purpose of higher education, the underemployment and unemployment of people with tertiary degrees suggests considerable misallocation. In the United States, for example, more than one-quarter of workers holding bachelor's or advanced degrees earn less than the median annual wage for two-year associate degree holders. Similarly, one-third of those with associate degrees earn less than the median wage for high school graduates. By examining the number of bachelor's degree-holders who are underemployed today, we estimate that some $89 billion (14 percent) in annual education spending in the United States, the United Kingdom, Germany, Japan, Brazil, India, and China does not lead to successful labor market outcomes.

Online talent platforms are becoming repositories of vast data sets that can illuminate trends in the demand for specific skills, and this capability can help young people make more informed decisions about training and career paths. Better information can improve the allocation of funding for education and training that improves career prospects for more individuals, raising their lifetime earning potential.

Long-term dynamic benefits

Online talent platforms could create important positive dynamics for economies over the long term. We do not attempt to quantify these, but they could prove to be as significant as any of the measured effects discussed above.

They could, for example, make it easier for highly talented individuals to find one another, offering new possibilities for collaboration and innovation. While this possibility cannot be predicted, it is worth remembering that chance encounters in Silicon Valley produced some of the greatest technological innovations of our generation.

The impact on individual companies (discussed in greater detail below but excluded from our GDP calculation) could similarly ripple through entire economies. As leading companies adopt online talent platforms, they are likely to attract higher-performing employees and

boost results. As they do, they will win out over less competitive companies, supporting the process of creative destruction that generates long-term improvements in productivity and living standards.

Finally, by enabling a more detailed understanding of the demand for particular skills and better educational and training choices, online talent platforms could shift the entire mix of skills over the long term, increasing human capital and economic vitality. The process of reaching equilibrium in supply and demand can take years, however—and in the meantime, the availability of new fractional employment options may help to cushion the effects of this adjustment for some workers.

Online talent platforms can revolutionize the way organizations attract, retain, and develop talent

In a more digitally connected and knowledge-based economy, companies increasingly create value from ideas, innovation, research, and expertise. Finding the right talent matters and drives results. But organizations often struggle to land the right candidates, draw the best performance out of their workforces, and develop the leadership they need to meet their strategic goals.

Today leading companies are adopting online talent platforms as they realize that human capital management can produce significant returns on investment. To date, the clearest value of these platforms has been in harnessing the power of search technology for hiring, including new tools for passive recruiting, social recruiting, and applicant screening. But platforms are now available to improve the full spectrum of talent management, from onboarding and compensation to engagement, team formation, and performance feedback.

275BPS
average improvement in company profit margins

By modeling sample organizations in a range of industries with diverse workforce mixes, operating models, and financial characteristics, we estimate that online talent platforms can increase a company's output by up to 9 percent and lower costs related to talent and human resources by up to 7 percent (Exhibit E6).[5] Companies with a large share of highly skilled workers have significant opportunities to improve recruiting and personalize various aspects of talent management, including training, incentives, and career paths. Conversely, online talent platforms can also benefit companies with large low-skilled workforces and high attrition rates through better screening and assessment of job candidates.

Online talent platforms have the greatest potential for high-tech and professional services firms, both of which depend on specialized, expensive, and hard-to-find talent. These firms can also benefit from applying online talent platforms internally to make it easier for their employees to find expertise across geographically dispersed organizations and to form more compatible and productive teams. Hospitals stand to gain from the ability to attract better talent and hard-to-find specialists and from staffing more compatible teams of nurses and doctors. Retailers and banks would benefit mainly from better screening and assessment of candidates to find those who will provide better customer service and are less likely to quit what have traditionally been high-churn positions. Online talent platforms could provide large benefits to small businesses that lack dedicated HR departments.

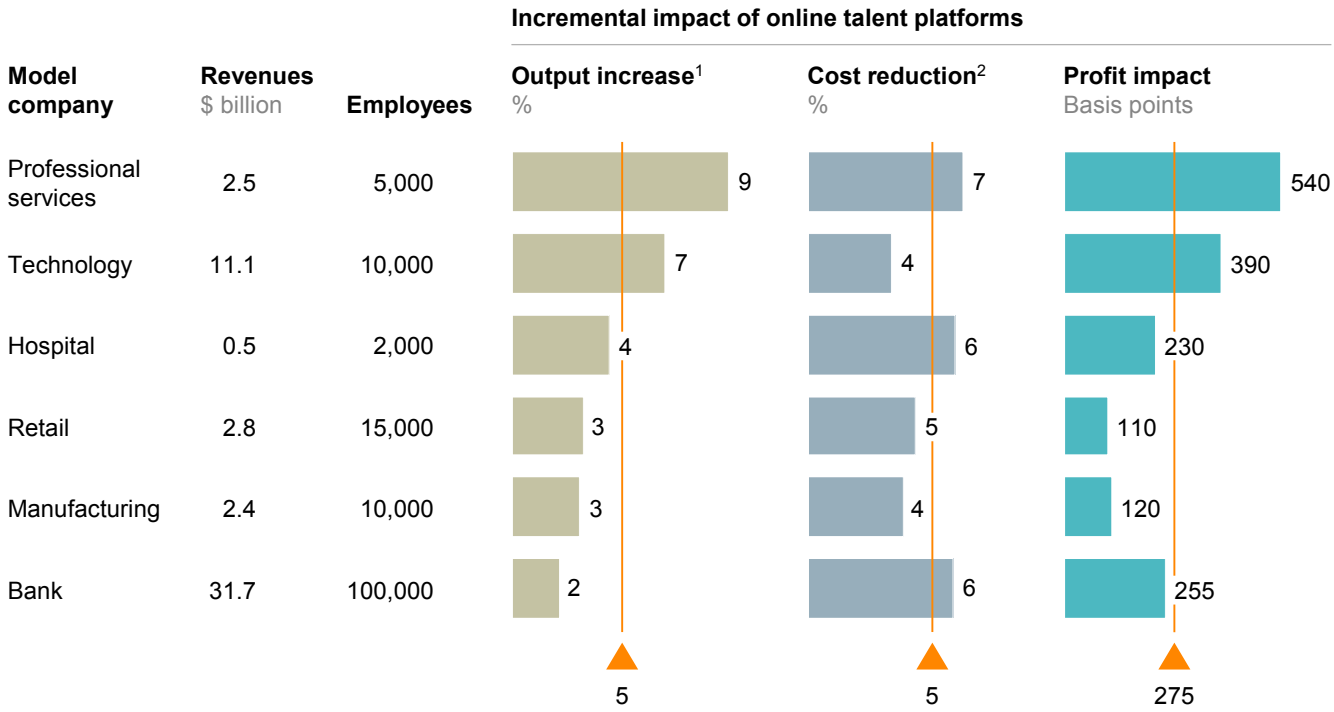
Organizations face substantial challenges in making the shift to online talent platforms, however. Many still lack integrated systems for managing their current workforces, let alone for identifying potential recruits or engaging in long-term planning. The companies at the leading edge of these trends are cultivating real analytic and social media skills in their HR

[5] We model results for six representative companies: a professional services firm, a high-tech firm, a hospital, a retail chain, a manufacturer, and a retail bank.

departments. They are also creating more personalized work environments with interactive tools embedded into everyday processes to support business priorities.

Exhibit E6

Online talent platforms can increase output by up to 9 percent and reduce costs by up to 7 percent



1 Includes productivity gains in front- and middle-office workers, which can translate into revenue or other increased output opportunities.
2 Includes productivity effect in middle- and back-office workers, and savings in recruiting, interviewing time, training, onboarding, and attrition costs.
Note: Numbers may not sum due to rounding.

SOURCE: BLS; company annual reports; McKinsey Global Institute analysis

Companies will need to prepare for a whole new phase in the war for talent now that workers have publicly visible profiles. Competitors can more easily lure away valued employees (and even entire teams). The labor market fluidity enabled by online talent platforms is a positive dynamic for individuals and the broader economy, but companies may face increased costs due to higher turnover. This makes it more important than ever for companies to create a compelling value proposition for their workforce. Those that do are likely to be net beneficiaries of the digitization of talent markets. Just as they carefully manage their consumer brands, companies now have to be conscious of managing their reputations as employers.

Online talent platforms pose new questions, opportunities, and challenges for the long term

Policy makers should have significant incentives to enable the growth of online talent platforms, given their potential to increase economic dynamism, raise employment, and improve public spending on unemployment programs and education. To capture these benefits, they will need to address a number of complex issues.

The first is ensuring that all citizens have affordable broadband access. As of mid-2014, less than half of China's population and less than 20 percent of India's population were online, for example. In the United States, which has one of the highest Internet penetration rates in the world, some 50 million people remain offline. As talent platforms become the most accepted

and efficient way to find work, bridging the digital divide becomes even more critical for inclusive growth.

Much of the impact created by online talent platforms will be related to traditional full-time roles in the formal sector, which continue to be the dominant form of work in advanced economies. But the freelance, temporary, part-time, and contingent segment of the labor force, which existed long before the Internet, is growing. Digital platforms for freelance services—including platforms that dispatch contingent workers to provide services on demand—could dramatically accelerate that growth. This will likely necessitate rethinking some labor market regulations. There are questions, for example, about whether the large contingent workforces employed by on-demand service platforms should be classified as regular employees or as contractors (or a hybrid category yet to be defined). This will determine whether some types of regulations (including minimum-wage laws) apply to them.

Similarly, the systems created to provide worker benefits need updating. The United States, for example, long ago designed a system in which employers are the mechanism for delivering a wide range of benefits (even if employees share the costs with them). These include health insurance, disability insurance, and retirement plans, as well as unemployment insurance, maternity and paternity benefits, worker's compensation for job-related injuries, and paid time off. But freelancers must purchase their own insurance and rely on their own resources if they take time off for any reason; they also lack access to the same kinds of retirement savings plans available through many traditional employers. New online marketplaces and intermediaries may emerge to help expand access to benefits and support services—and if they do, it could become more viable for people to choose a freelance career path.

Today online talent platforms are able to capture rich troves of data on the positions that employers are filling, the skills required, and career pathways that take people from education and entry-level positions into more fulfilling work. Capturing this data and applying sophisticated analytics could produce better insight into how the demand for specific skills and occupations is evolving—in greater detail and something much closer to real time than traditional labor statistics. This could create new visibility into the effectiveness of particular educational institutions and programs, talent migration patterns, and worker productivity. This information would be valuable to policy makers, companies, and individuals alike. There is an enormous opportunity to create a more effective and responsive system for education and training, but it will take private-sector innovation, public-sector leadership, and new types of partnerships to realize this potential.

Beyond the world of policy, educators and vocational training providers of all stripes will need to make active use of this data to shape their offerings. Already it is possible to use online talent platforms to track where the graduates of a given institution wind up in the labor market. Education providers could be held to a new standard of accountability as the outcomes associated with specific institutions and degree programs become more publicly transparent.

Online talent platforms can bring a new dimension to profiles of individual workers: their soft skills, traits, and endorsements from colleagues and superiors. The accumulated ratings and feedback provided to contingent workers through online marketplaces could be valuable, particularly for young people with little other work experience as they seek permanent employment. Accumulating and codifying these reputational elements can help individuals distinguish themselves in the job market and can help employers identify people who are a better fit for the positions they are filling. The issue of data ownership in an age of social media is not unique to online talent platforms, but resolving the question of whether employers, platform providers, or individual workers own this data—as well as who is entitled to use it and under what conditions—will be of increasing importance.

For an ever-broader segment of the workforce, from students to retirees, individuals will have an opportunity to take more active control of their careers. This starts with building a personal online presence and network. As data collection and analysis become more sophisticated, users will have to be mindful that every online interaction can affect their professional reputation. Talent platforms can offer users a great deal of insight, but it is up to individuals to act on that information and use it to plot their long-term career paths. They will have greater agency, and in the future, they may feel less trapped in stagnant local economies as they can more easily learn about openings in other locations and options for long-distance collaboration.

•••

The strains in labor markets did not develop overnight, and they arose from multifaceted causes. In an age of automation, technology is often blamed for these issues. But it could prove to be part of the solution, too. Online platforms are already fundamentally altering the way individuals go about searching for work and the way employers approach hiring and talent development. While most early adopters have been professionals, these platforms are beginning to draw in a wider range of talent and spreading to new industries and geographies. These are early days in their evolution, but as these platforms rapidly expand, the cumulative benefits are growing. Capturing their full potential will require a thoughtful policy framework, private-sector investment and innovation, and—perhaps most important—a whole new level of adaptability on the part of individual workers.

1. THE DISCONNECT BETWEEN WORKERS AND WORK

College graduates in nearly any advanced economy in the 1970s could choose to travel a predictable career path: spot an ad for an entry-level job in the local newspaper, enter a company's training program, move on to better-paying positions at regular intervals, and retire to enjoy a comfortable lifestyle decades later. Previous recessions brought spikes in unemployment, but layoffs tended to be cyclical; workers were called back or found new positions without being thrown out of work for extended periods.

Over the last 20 years, those dynamics have changed. New technologies, the falling costs of communication and transportation, and the opening of markets around the world enabled companies to create a global footprint. Layoffs in advanced economies went from cyclical to permanent, forcing midcareer workers to scramble to find new lines of work. "Jobless recoveries" became the norm, at least in the United States and many countries across Europe.[6]

850M
individuals in seven major economies who are unemployed, inactive, or part-time

Today workers around the world face a much more daunting job market. The worst global recession since the Great Depression still casts a long shadow, but deeper structural changes have been building for decades. Youth unemployment is soaring in countries across Southern and Central Europe; in Spain, for example, more than half of young people lack jobs, and even college graduates struggle to find work. In the United States, students are entering the job market with a mountain of debt, but some find that employers place little value on their degrees. Many of China's new university graduates are not landing the high-paying white-collar jobs they expected. Around the world, millions of young people are stuck in low-skill jobs that leave them frustrated and feeling that they could be accomplishing so much more.

This is only one snapshot of labor market dysfunction from a much larger picture that spans countries and demographic groups. Companies and industries are being rapidly transformed by the powerful currents of globalization and technology, and the skills they need are changing. But even as the business environment has grown more dynamic and fast-paced over the past two decades, the process of educating and training individuals and then connecting them with the world of work has not evolved to the same degree. The ability of labor markets to match willing workers with rewarding job opportunities has been breaking down for many years in advanced economies, and new mechanisms are not taking root quickly enough as workforce needs grow more complex in emerging economies.

This disconnect is a market failure that touches millions of lives. Looking at just seven of the world's major economies (the United States, the United Kingdom, Germany, Japan, China, India, and Brazil), we find that some 120 million people are unemployed or working part-time involuntarily, and 730 million people of working age are not participating in the labor force. A recent survey conducted by LinkedIn found that even 37 percent of those who do have jobs report feeling overqualified for their current roles.

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[6] For more discussion of these trends, see *Global employment trends 2012: Risk of a jobless recovery?* International Labour Organization, 2014; *The world at work: Jobs, pay, and skills for 3.5 billion people*, McKinsey Global Institute, June 2012; and *An economy that works: Job creation and America's future*, McKinsey Global Institute, June 2011.

For individuals, the real-world consequences of this disconnect can include economic insecurity and poverty, deteriorating health, and a lack of fulfillment and pride in what they do every day. On the other side of the equation, companies say they often cannot fill open positions that require specific skills. They may wind up hiring employees who are not the right fit—and are less productive, less innovative, and plagued by morale issues as a result. In some industries, the inability to find the right talent is a constraint on growth. When these stories multiply, they erode productivity across the broader economy, deepen inequality, and fray the social fabric.

36%
of global employers say they cannot find the talent they need

Labor markets are ripe for positive disruption. Because of their unique ability to create transparency, aggregate data, and enable sophisticated searches, online talent platforms can advance that disruption. They are not a panacea by any means; this research assumes that they can address only a fraction of the biggest problems in today's labor markets. But we project that they can change the outcome for 10 percent of the working-age population by reducing the time workers spend unemployed, connecting them with more fulfilling jobs, or helping them increase their income through flexible part-time arrangements—and that translates into new opportunities for some 540 million individuals.

Labor markets around the world suffer from problems that lead to unrealized economic and individual potential

Frictions and imbalances are apparent in labor markets around the world, albeit to varying degrees in different countries and sectors. The Great Recession clearly worsened these strains, but they are not simply a product of the business cycle. In many countries, labor markets have been deteriorating for decades. All of these issues increase the hurdles for individual workers seeking fulfilling, productive work and waste human potential. In most countries, these strains appear to be growing worse. Here we focus on four key issues that online talent platforms can partially address.

Problems matching jobs and workers

Many companies and workers seem to have trouble finding one another. The skills that many workers have may not match the vacancies at hand; information gaps may prevent qualified job seekers from ever learning about promising openings; and the right workers may be in the wrong geographies. The Beveridge curve depicts the steady-state relationship between the unemployment rate and the vacancy rate over the course of a business cycle. It was relatively stable in the United States before the Great Recession, but the curve has shifted since 2009, with more vacancies for a given level of unemployment. This could reflect a decline in matching efficiency (although it could also simply reflect the impact of the recession). This trend has also been observed in other OECD countries, including the United Kingdom, Portugal, and Spain.[7]

Economists have been debating the existence of a broad-based "skills gap," at least in the aggregate, given that wages have not been rising.[8] But executives consistently report hiring difficulties for specific positions at their own firms and in particular industries and regions, indicating issues at the micro level. Thirty-six percent of the 37,000 global employers surveyed by Manpower stated that they could not find the talent they needed in 2014—

[7] Bart Hobijn and Ayşegül Şahin, *Beveridge curve shifts across countries since the Great Recession*, paper presented at the 13th Jacques Polak Annual Research Conference of the International Monetary Fund, November 8–9, 2012. See also Peter Diamond and Ayşegül Şahin, *Shifts in the Beveridge curve*, September 2014; and Sylvain Leduc and Zheng Liu, "Uncertainty and the slow labor market recovery," *Federal Reserve Bank of San Francisco Economic Letter*, July 2013.

[8] For more on the debate over the skills gap, see Paul Krugman, "Jobs and skills and zombies," *The New York Times*, March 30, 2014; Paul Osterman and Andrew Weaver, *Why claims of skills shortages in manufacturing are overblown*, Economic Policy Institute, March 2014; and James Bessen, "Employers aren't just whining: The 'skills gap' is real," *Harvard Business Review*, August 25, 2014.

the highest such percentage in seven years of annual surveys.[9] The types of workers in short supply range from software engineers to big data analysts to skilled electricians and welders. A number of other surveys document similar findings.[10]

The highest response rate for hiring difficulties in the Manpower survey was in Japan, a country at the leading edge of the global aging trend. With its working-age population declining, Japan is already facing a shortage of available workers in critical fields—and these gaps could grow more acute in the years ahead. As skilled workers reach retirement age, the Japanese economy could be drained of valuable skills and experience.[11] This issue is looming in other rapidly aging societies, including Germany, Italy, China, and South Korea.

The swelling demand for software developers and engineers in Silicon Valley often makes the headlines, but other types of specialized skills are also in short supply. McKinsey Global Institute research has found that by 2018, the United States alone could face a shortage of up to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use big data to make effective decisions. These shortfalls are even more acute at the global level.[12] A study by the World Health Organization projects that the current shortage of 7.2 million health-care workers worldwide is likely to grow to 12.9 million by 2035. While much of the gap is concentrated in the emerging world, it also affects developed economies, where 40 percent of nurses are projected to leave the health-care field over the next decade.[13] It is imperative that more students enter these fields.

In some cases, the right workers are out there, but employers have a hard time finding them. This may reflect a lack of transparency regarding the existence of openings. Some occupations, such as sales in the United States, are marked by large numbers of job postings as well as many unemployed workers—but nevertheless, few matches are being made (Exhibit 1). By contrast, workers with only high school degrees must compete against a flood of candidates for every job that requires little education, even if they are low-paying. Applicants routinely outnumber job openings in fields such as general construction, production, and cleaning and maintenance. This points to deepening inequality as well as economic vulnerability for those without credentials.

Geography may prevent some of those matches from occurring. There are large variations in vacancies and unemployment rates at the regional and city levels across the United States and the European Union. Workers may have skills that are in demand elsewhere, but they do not always move to take advantage of those opportunities. In the 1950s and 1960s, one in five Americans moved every year; now that figure has dropped to one in ten.[14] The same trend is seen in other countries.

There are many possible reasons for decreased worker mobility. The potential boost in earnings that could be captured by taking a position in a new location may not compensate for the expense of moving and higher housing costs. Some individuals may not want to uproot their lives or move away from family. Two-income households may find it more difficult to move to pursue a career opening for only one wage earner. Language barriers stand in the way in Europe, as do differences in national license and credential requirements. Nevertheless, a lack of information about opportunities that exist almost certainly plays a role as well.

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9 *The talent shortage continues: How the ever-changing role of HR can bridge the gap*, Manpower Group, May 2014.

10 See, for example, Monika Aring, *Youth and skills: Putting education to work*, Education for All Monitoring Report, UNESCO, 2012; and *Economic conditions survey: Overall financial health and hiring*, Society for Human Resource Management, 2014.

11 *The future of Japan: Reigniting productivity and growth*, McKinsey Global Institute, March 2015.

12 *Big data: The next frontier for innovation, competition, and productivity*, McKinsey Global Institute, May 2011.

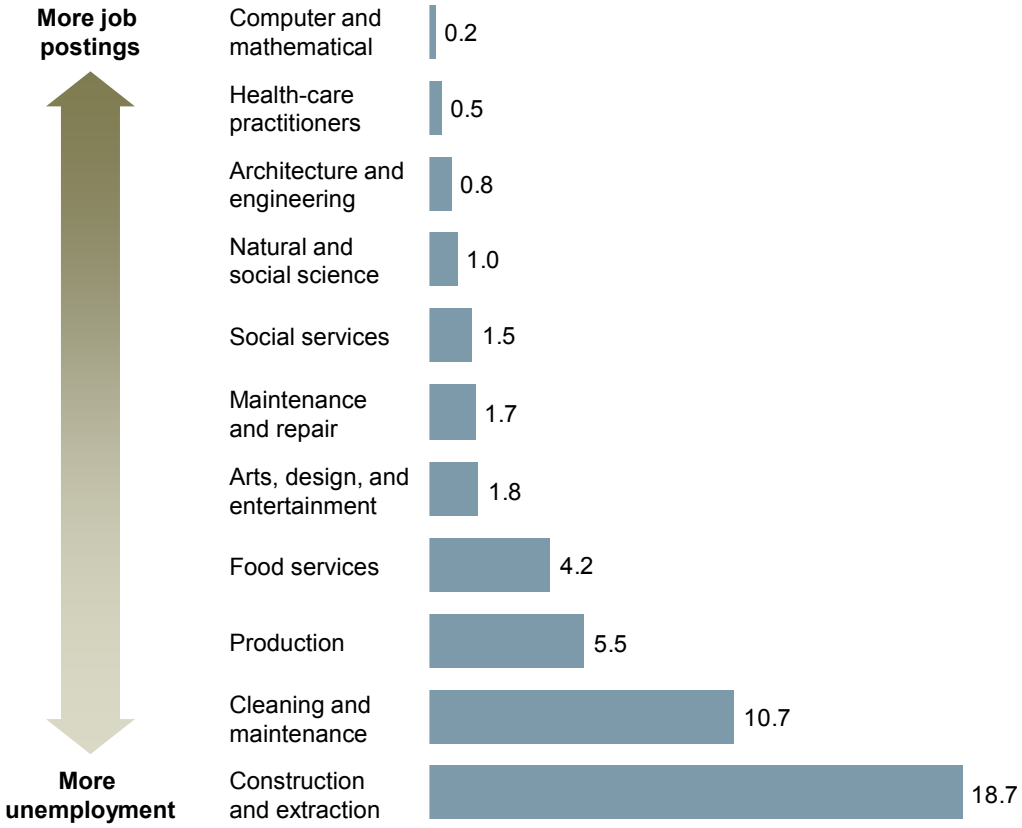
13 *A universal truth: No health without a workforce*, World Health Organization, November 2013.

14 Based on analysis of data from the US Bureau of Labor Statistics.

Exhibit 1

Inefficient labor matching in the United States is evident from large numbers of both unemployed people and vacant positions in certain fields

Ratio of number of unemployed people to job postings, 2014



SOURCE: Burning Glass; BLS; McKinsey Global Institute analysis

Poor utilization of human capital

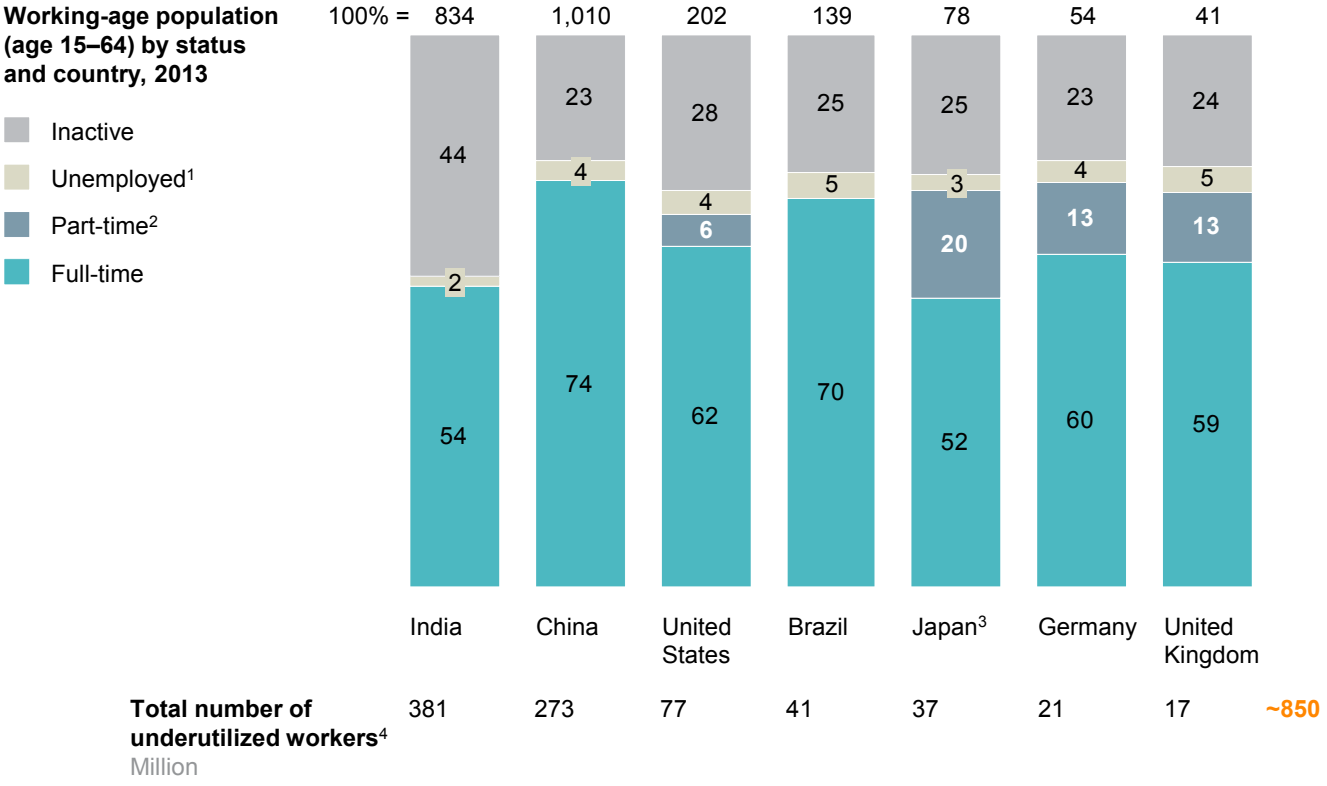
In all countries, large segments of the working-age population do not work. This manifests as high levels of unemployment, low labor force participation, and underemployment of part-time workers who wish to work full-time.[15] In the United States, the United Kingdom, Germany, Japan, Brazil, China, and India, we find 75 million people formally unemployed. But this number is only part of the story. In most countries, 30 to 45 percent of the working-age population is underutilized—that is, unemployed, inactive in the workforce, or working part-time. Across these seven economies alone, this translates into some 850 million people (Exhibit 2). While some of them have no doubt opted out of the workforce or chosen part-time employment as a matter of personal preference, this number still represents millions of individuals who could raise their incomes while engaging in more productive, fulfilling work.

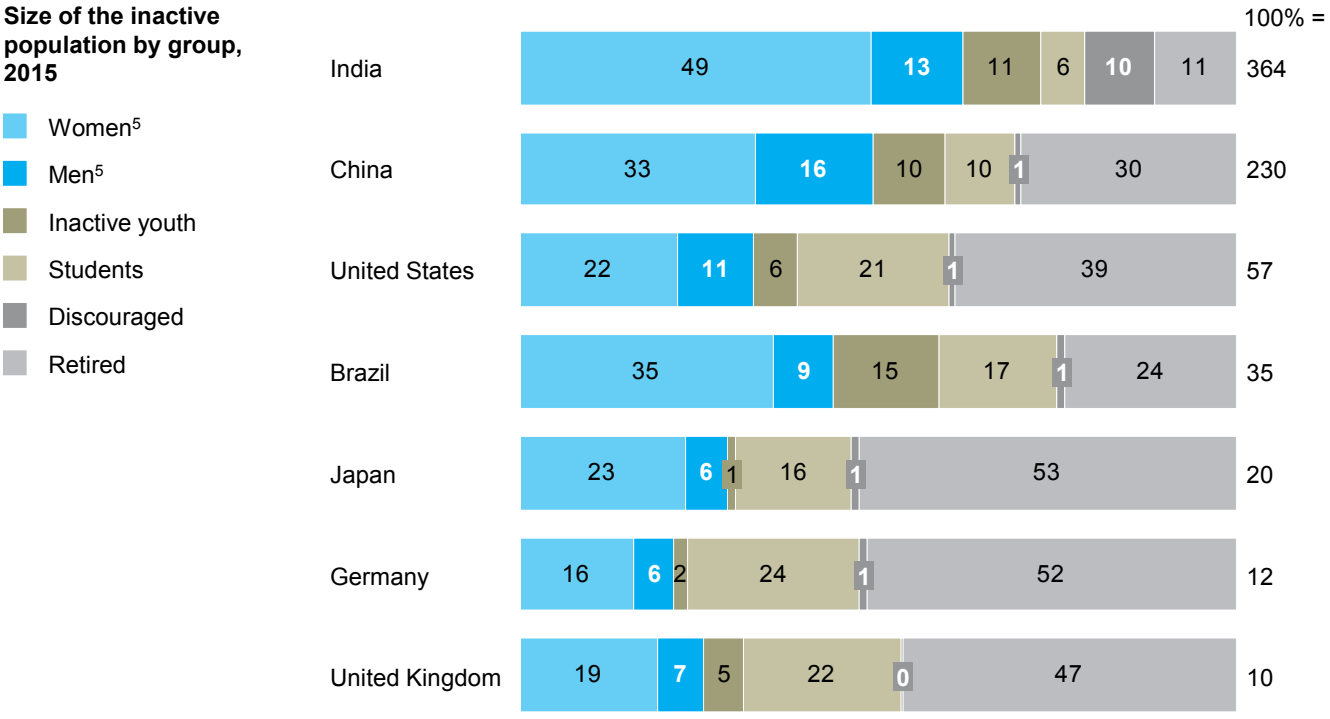
[15] "Underemployment" is defined as the share of the workforce consisting of highly skilled workers in low-skill or low-paying jobs plus those in part-time roles who would like full-time employment.

Exhibit 2

850 million people across seven countries are economically underutilized, accounting for 30 to 50 percent of the working-age population

%; million people





1 Unemployed as defined here does not equal the unemployment rate because it is divided by the total population instead of the labor force.
2 Part-time employment data are not available for China, Brazil, and India.
3 For Japan we use non-regular employment provided by the "Employment status survey of Japan" as a proxy for part-time employment.
4 Inactive, unemployed, and part-time.
5 Excluding inactive youth, students, discouraged workers, and retired.
NOTE: Numbers may not sum due to rounding.

SOURCE: OECD; UN; World Bank; ILO; Eurostat; national sources; McKinsey Global Institute analysis

3.7
percentage point decline in US labor force participation rate since 2007

The United States has experienced a notable decline in labor force participation since the mid-1990s—and that long-term trend was exacerbated by the Great Recession. The labor force participation rate has fallen by 3.7 percentage points since 2007. Some of this is due to aging. Research has attributed 1.7 percentage points of this decline to aging and another 0.5 percentage points to the cyclical downturn. The residual component reflects other structural issues.[16] Millions of individuals have dropped out of the labor force without a clear reason. Reengaging these people is essential for making their families more economically secure as well as boosting national prosperity.

Some of the unemployed and underemployed would like to work full-time. Others may have dropped out of the labor force because the opportunities available were not attractive or because their personal or family needs would not allow a full-time or even a regular part-time schedule. Some of those in the latter category might choose to work if more flexible and self-directed work options were available.

The long-term unemployed face especially uncertain odds of reentering the workforce. The longer they are out of work, the more discrimination they face from potential employers and the more difficult it is for them to keep their skills up to date. Tens of millions have been unemployed for a year or longer in the seven economies analyzed here. Many eventually become discouraged and drop out of the active job market altogether, so regular unemployment statistics do not even capture their growing ranks. A wide body of academic research has found correlations between extended unemployment and declines in physical and mental health; studies have even shown poorer academic outcomes among the children of the long-term unemployed.[17]

Part of the reason for low overall labor force participation is that many women do not work outside the home while they are raising children. There is a gap in labor force participation in nearly all countries (Exhibit 3). Among high-income countries, Lithuania, Finland, Iceland, and Norway have some of the smallest differentials in the world.[18] But the gap is particularly pronounced in countries such as India and Brazil. The numbers are also deceptive in Japan and Germany, where many women work but have part-time jobs.

300M
youth around the world not engaged in education, employment or training

Youth unemployment has become acute over the past decade. Today some 300 million young people worldwide between the ages of 16 and 24 are not involved in education, employment, or training.[19] Of these, approximately 75 million are unemployed, which means they are seeking work but cannot find it; this applies to approximately one in four young people in the European Union.[20] The youth unemployment rate is nearly 14 percent worldwide, but it- has soared above 50 percent in countries such as Greece, Spain, and South Africa. Without a solid start to propel their careers forward, their economic prospects will be lower over their entire lifetimes. One US study found that the one million young Americans who experienced long-term unemployment during the Great Recession will lose more than $20 billion in earnings over the next decade.[21] This trend could even have far-reaching consequences for political and social stability.

Finally, even people who have jobs may not be fully utilizing their skills. Many workers report feeling overqualified for their current roles, revealing the lack of a good fit between their abilities and their job responsibilities. Thirty-seven percent of global respondents to a recent survey of job seekers conducted by LinkedIn said that they would consider a new job that

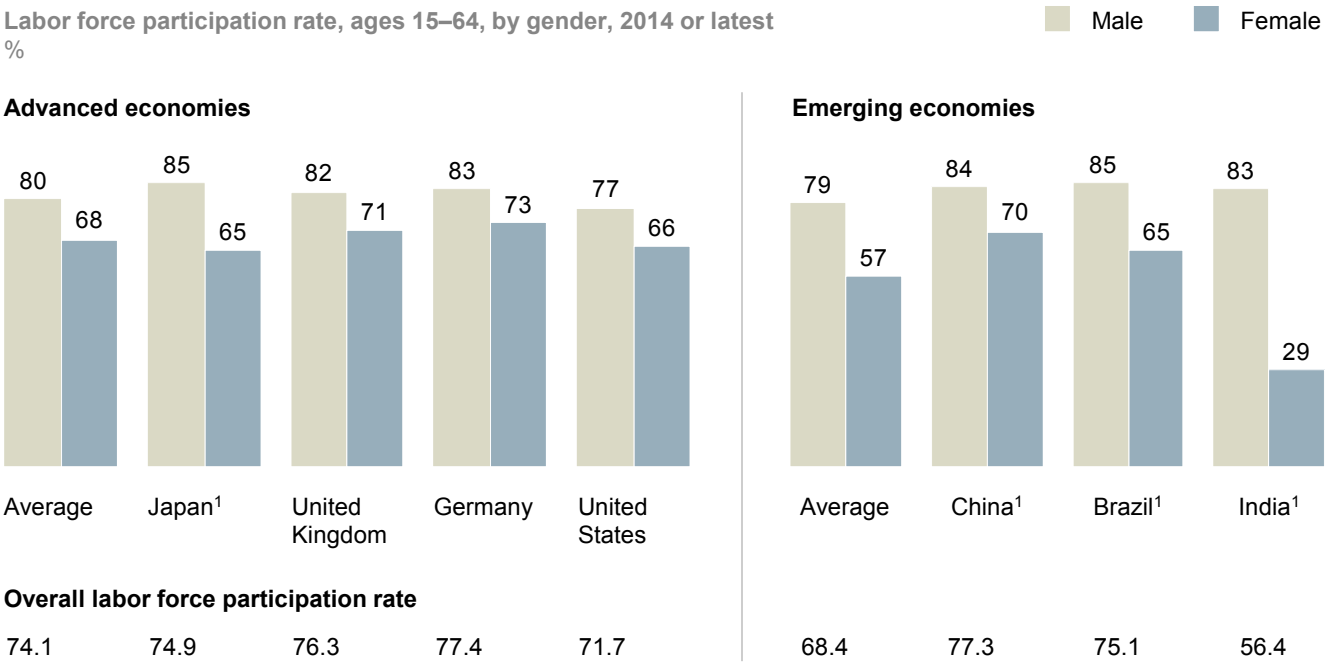
16 *Economic Report of the President,* 2015.
17 Many of these studies are summarized in Austin Nichols, Josh Mitchell, and Stephan Lindner, *Consequences of long-term unemployment*, Urban Institute, 2013.
18 *The global gender gap report 2013*, World Economic Forum.
19 Based on World Bank and OECD estimates.
20 Youth unemployment numbers from the International Labor Organization and Eurostat.
21 Sarah Ayres, *The high cost of youth unemployment*, Center for American Progress, April 2013.

offers a "better fit for [my] skill set," a "more impactful role," or "more challenging work." Perceived overqualification was highest in Japan but was significant in other advanced economies as well (Exhibit 4). For many individuals, work accounts for the majority of their waking hours and informs their identity and sense of self-worth. Real engagement with work can create a sense of purpose, and without it, boredom and frustration set in.

Exhibit 3

Women's labor force participation is lower than men's participation across countries

Labor force participation rate, ages 15–64, by gender, 2014 or latest
%



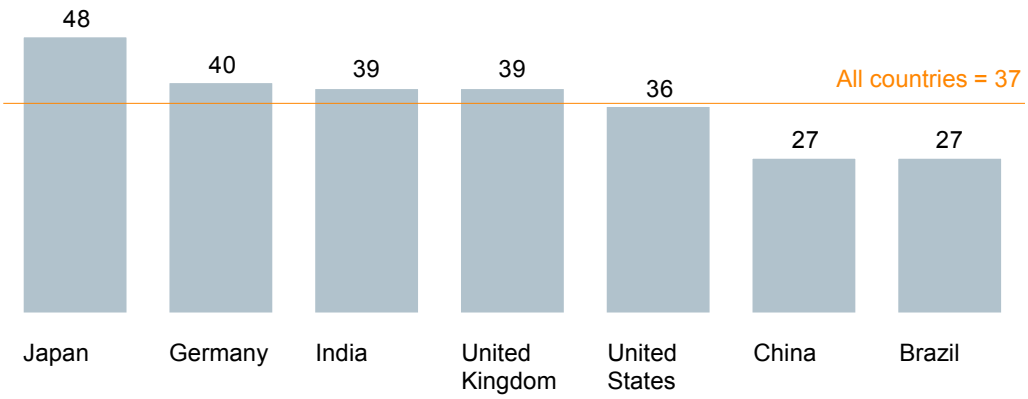
1 2013 data.

SOURCE: World Bank; national sources; McKinsey Global Institute analysis

Exhibit 4

Many professionals report feeling overqualified for their jobs, suggesting room for better job matches

% of respondents who selected "finding a better skill set fit," "more challenging work," and "a more impactful role" as the three top factors enticing them to pursue a new job opportunity
n = 1,510



SOURCE: LinkedIn Job Seeker Survey 2014; McKinsey Global Institute analysis

The impact of poor matching is felt not only in dissatisfaction but also in wages. In the United States, for example, more than one-quarter of workers holding bachelor's or advanced degrees earn less than the median annual wage for two-year associate degree holders. Similarly, one-third of those with associate degrees earn less than the median wage for high school graduates.[22]

Declining labor market fluidity

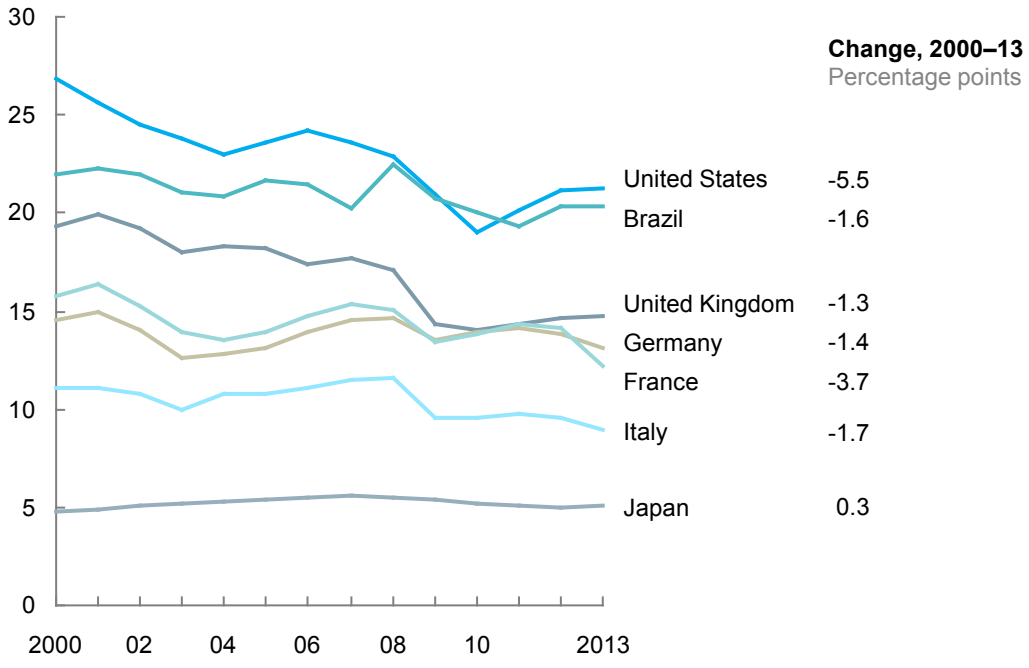
Labor market fluidity, or the ability to move from job to job, is akin to a healthy circulatory system. When people switch jobs of their own accord, they find work that better suits their skills or preferences, raising productivity or satisfaction. Because voluntary job changes are also typically accompanied by higher wages, declining labor market fluidity can contribute to stagnant wage growth.[23] Frequent job changes also reflect the fact that companies are restructuring, expanding, entering, and exiting—all signs of a dynamic economy.

It is therefore a matter of real concern that the rate of job changing is limited in most mature economies and has fallen sharply in the United States, a country with a historically dynamic labor market (Exhibit 5). The average US job tenure has been steadily increasing over the past two decades, from 3.5 years in 1983 to approximately 4.6 years today.[24] This limits the ability for individuals to progress along a career path—and to ratchet up their wages with each new role.

Exhibit 5

Labor market fluidity is declining in most countries

Share of people whose current job tenure is less than one year[1]
% of total employment,



1 Proxy for labor market fluidity.

SOURCE: OECD; national sources; McKinsey Global Institute analysis

[22] *Game changers: Five opportunities for US growth and renewal*, McKinsey Global Institute, July 2013.

[23] Research shows that job switches correlate with rising wages. See, for example, José Mustre-del-Río, "Following the leaders: Wage growth of job switchers," *The Macro Bulletin*, Federal Reserve Bank of Kansas City, December 19, 2014. See also the *Economic Report of the President,* 2015.

[24] Bureau of Labor Statistics data, 2014.

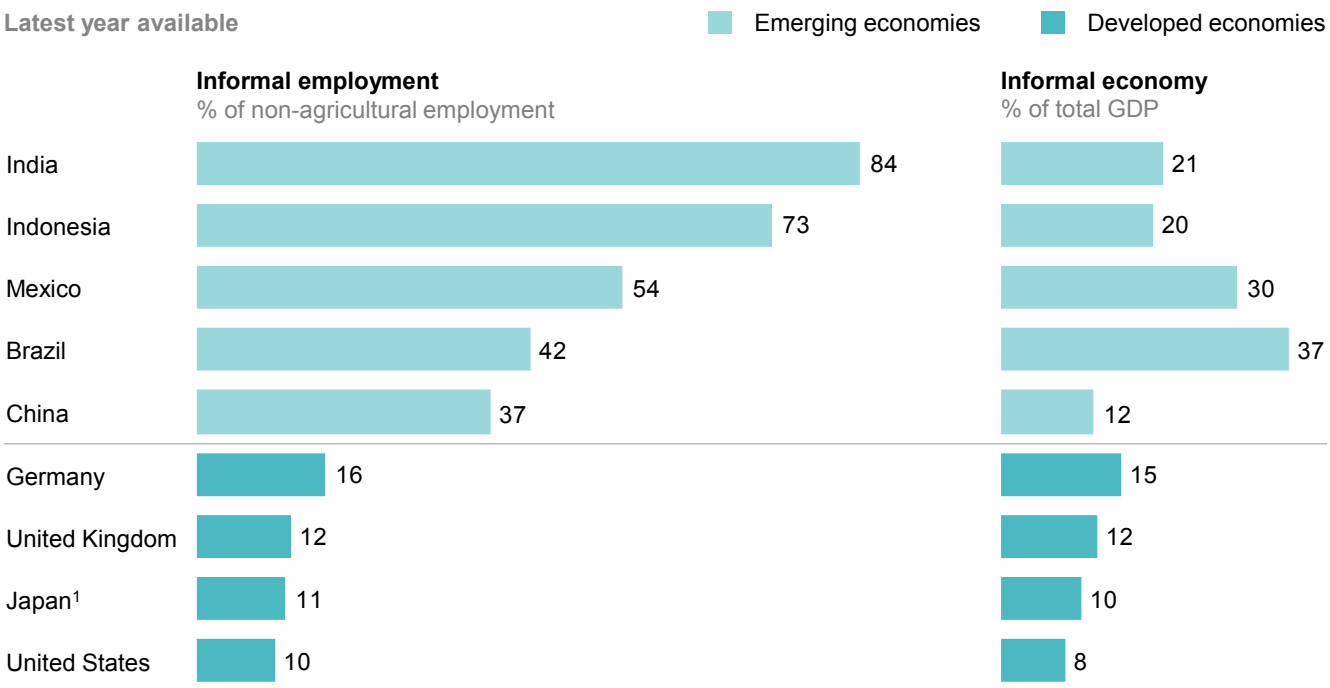
The data from other countries are not strictly comparable, but while the share of people who have been in their jobs for a year or less is 21 percent of employed people in the United States, it is less than 15 percent in Germany and the United Kingdom and only 5 percent in Japan. This reflects differences in cultural norms and labor market regulations, among other factors. But rigidity stifles career progression and limits the opportunities available to the unemployed and to new entrants to the workforce.

Informal employment that limits opportunity

A large share of the labor force in emerging economies is engaged in informal employment (Exhibit 6). Individuals may work for enterprises that operate outside the view of regulators or tax authorities, or they may be self-employed in subsistence agriculture or microbusinesses run by family members. These enterprises typically have poor productivity and limited growth prospects due to their small scale, and workers in the informal sector may be more vulnerable to exploitation. Informality drags down a country's overall productivity and standard of living. Some economists estimate that the informal sector is up to 80 percent less productive than the formal sector, particularly in developing countries.[25]

Exhibit 6

Informal employment accounts for a larger share of employment and GDP in emerging economies than in advanced economies



1 Self-employment as proxy.
NOTE: Informal employment is defined as work in the informal sector (in enterprises that operate outside the view of tax authorities and regulators) or informal employment in the formal sector.

SOURCE: ILO; Schneider et al., *Shadow economies all over the world* (World Bank working paper); literature review; McKinsey Global Institute analysis

[25] Matías Busso, María Victoria Fazio, and Santiago Levy, *(In)formal and (Un)productive: The productivity costs of excessive informality in Mexico*, Inter-American Development Bank, August 2012.

While these businesses are hard to track by their very nature, one study found that the informal sector accounts for 30 to 40 percent of total economic activity in the poorest countries and an even higher share of employment.[26] The International Labour Organization estimated that the informal economy is equivalent to nearly 84 percent of non-agricultural formal employment in India, 73 percent in Indonesia, and 54 percent in Mexico.[27]

Even in advanced economies, however, some types of work are often performed under the table for cash; this is particularly true of household work, agricultural work, and informal construction. This practice leaves workers vulnerable to exploitation, deprives local governments of revenue, and lowers overall productivity.

•••

Online talent platforms are not a cure-all for everything that is ailing in today's labor markets. They cannot boost weak demand in advanced economies, solve complex development issues in the emerging world, or create better jobs across the board. But they can begin to dent the issues described above, including unemployment, discouragement, the lack of flexible options, low job satisfaction, and declining mobility. Given how intractable these problems have been for many years, this is a long-awaited piece of good news for the millions of workers who have been grappling with a tough job market. Labor markets are ripe for positive disruption—one that could empower millions of individuals by connecting them to the right work opportunities in a much more seamless, personalized, and efficient way.

[26] Rafael La Porta and Andrei Shleifer, "Informality and development," *Journal of Economic Perspectives*, volume 28, number 3, summer 2014.

[27] *Statistical update on employment in the informal economy*, ILO Department of Statistics, June 2012.

2. ONLINE TALENT PLATFORMS TRANSFORM THE JOB MARKET

It is hardly news in 2015 that digital platforms have already transformed major segments of the economy. Hundreds of thousands of small vendors are using digital e-commerce platforms such as Alibaba, Amazon, and eBay to transform themselves from startups to "micromultinationals." E-learning platforms have opened up new possibilities for obtaining a quality education anywhere in the world that students have Internet connections. Digital platforms have made it possible for millions of aspiring authors to self-publish their books.

Online talent platforms are similarly poised to transform the world of work. They can be websites, mobile apps, or proprietary corporate systems. Whatever form they take, they are digital environments that synthesize information about individuals and job opportunities to produce better work outcomes.[28]

Some, like LinkedIn and Monster.com, bring together candidates and employers to fill traditional jobs. Others, such as Freelancer.com, function as online marketplaces for contingent workers, while platforms such as Angie's List and Glassdoor publish reviews to give users more transparent information before they make decisions on hiring a service provider or taking a job. Some use the power of big data analytics to scour the Internet to identify, recruit, and screen promising candidates.

The earliest online talent platforms were created as the Internet was taking off in the 1990s, and they have been expanding and evolving ever since (see Box 1, "A short history of online talent platforms"). We believe several forces will dramatically accelerate their reach and impact in the years ahead. First is growing broadband access around the world, often through mobile devices. In the world's poorest countries, even people without indoor plumbing may have smartphones. Second is the big data revolution, which has been made possible by the explosive growth of computing power and the development of sophisticated algorithms; these make it possible to capture, store, and analyze vast quantities of data. Third has been a cultural shift toward greater sharing of personal information online, caused by the growth of social media. Together, these forces are creating the conditions necessary for online talent platforms to transform how large segments of the global workforce choose careers, get jobs, and manage their livelihoods.

[28] Our definition excludes online marketplaces for trading assets or goods (such as ebay, Etsy, and Airbnb) as well as peer-to-peer lending platforms. Though these models use information about individuals and make a "match," labor is not the primary asset in the transaction. We have also excluded platforms facilitating online forums and discussions; general-purpose search tools for finding public knowledge; digital file-sharing or communication tools (such as Box, Dropbox, Google Drive, and Skype); general economic forecasting tools; and general-purpose learning platforms and online universities. We also exclude companies such as BambooHR and Zenefits; although they provide tools for tracking employee benefits, payroll, and time off, they are geared to improving administrative tasks rather than work outcomes.

Box 1. A short history of online talent platforms

It seems like ancient history today, but only 20 years ago, most hiring in advanced economies happened when companies placed ads in the local newspaper and candidates sent in resumes through the mail. That all began to change as the Internet gained traction and maturity. As seminal online newsgroups such as Usenet created networks of users and new ways to share information digitally, some of the Internet's early adopters realized that connectivity had important applications for improving the traditional employment search—and the online job board was born. These early bulletin boards were small-scale, non-profit affairs with a heavy academic and technology focus. The basic concept has expanded and evolved ever since.

By the end of the 1990s, pioneering companies such as the Online Career Center, CareerMosaic, and NetStart (which later become CareerBuilder.com) were creating more sophisticated platforms. An increasing number of employers began to participate, realizing that the Internet could be an effective intermediary and reach more job applicants. As the number of job postings and unique visitors grew, these sites began to add more sophisticated search and filtering functionality to make finding a job more efficient. Monster.com launched in 1999, and today it operates in some 40 countries around the world.[1]

By the early 2000s, as Internet usage expanded and newspaper advertising began to drop, online job searching was becoming the norm, at least for professionals in the United States. Online job aggregators such as Indeed.com and Simply Hired emerged. By compiling the results from multiple job boards onto larger sites, they made job searches more powerful and effective. Economists began to ponder whether this reinvention of the traditional job search could improve the way the labor market functions.[2]

The explosive growth of social networks such as Facebook made Internet users more comfortable with the idea of putting their identities forward and sharing information online. This created greater cultural readiness for new ways of engaging with the job market. LinkedIn, which launched in 2003, was a key force in applying the new concept of social networking to the world of work. Its users create distinct personal profiles, much like traditional resumes, and add connections to build a professional network; they can also amass endorsements and recommendations, communicate directly with other members, and even publish unique content to set themselves apart.

Today we stand at the edge of another potential step change in the scope, functionality, and impact of online talent platforms, as we describe in this chapter. It is important to note that the individual platforms, companies, and functionalities described in this report are examples of where this fast-evolving field stands at this moment in time. But these are still early days, and as the technology grows in both acceptance and sophistication, it may also grow tremendously in scope. It is worth noting how platforms have changed the landscape in areas such as e-commerce. Amazon, for instance, began by making retail processes more efficient in the book-selling business, but over the years it has introduced innovations and business lines that have sent ripple effects through multiple industries; few could have anticipated these developments in the company's early years. Online talent platforms may similarly morph in unexpected and more ambitious directions and branch into areas that cannot be predicted today.

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1 Monster.com corporate website.

2 See, for example, David Autor, "Wiring the labor market," *Journal of Economic Perspectives*, volume 15, number 1, winter 2001; Peter Kuhn and Mikal Skuterud, "Internet job search and unemployment durations," *American Economic Review*, volume 94, issue 1, 2004; Richard B. Freeman, "The labour market in the new information economy," *Oxford Review of Economic Policy*, volume 18, number 3, 2002; and Betsey Stevenson, *The impact of the Internet on worker flows*, Wharton School of Business, University of Pennsylvania, December 2006.

The biggest impact of these platforms to date stems from their ability to match individuals and work opportunities

Exhibit 7 shows the various types of online talent platforms. Their most fundamental function involves matching people with jobs or tasks, and this capability is the main focus of our research. Some of these platforms connect individuals with traditional jobs, and others facilitate contingent or contract work, giving rise to the "gig economy." Both types are evolving rapidly, as described below. A third category includes platforms that companies can use to improve talent management; these are outlined in the next section and explored in greater detail in Chapter 4.

Exhibit 7

We define online talent platforms based on data usage and functionality

	Digital tools that enable users to…	Example platforms, 2015
Matching individuals with traditional jobs	▪ Post full-time or part-time jobs ▪ Create online resumes of individuals ▪ Search for talent or work opportunities based on extended matching attributes ▪ Provide transparency into company or worker reputations, skills, and other traits	Careerbuilder Glassdoor Indeed LinkedIn Monster Vault Viadeo Xing
Online marketplaces for contingent work	▪ Connect individuals with contingent or freelance projects or tasks ▪ Facilitate transactions by providing transparency on reputation and ratings	Amazon Home Services Angie's List TaskRabbit Uber Upwork
Talent management	▪ Assess candidates' attributes, skills, or fit ▪ Personalize onboarding, training, and talent management ▪ Optimize team formation and internal matching ▪ Determine the best options for training and skill development	Good.co PayScale Pymetrics beta ReviewSnap

Note: The landscape of providers and solutions is evolving rapidly. These examples reflect a snapshot as of May 2015.

SOURCE: McKinsey Global Institute analysis

Platforms connecting candidates with traditional jobs

Much of the impact created by online talent platforms will be related to traditional full-time jobs in the formal sector, which continue to be the dominant form of work in advanced economies. Digital platforms gather a much wider universe of candidates and work opportunities than has ever been possible before, then use powerful search capabilities to make better and faster matches. Gathering and filtering a huge volume of information allows workers and employers alike to conduct more detailed searches and make more informed choices, reducing the risk of a bad match for parties on both sides. Because the information is public, there is a disincentive for individuals to exaggerate their experience and qualifications.

Sites such as Indeed, Monster.com, and CareerBuilder allow employers to post job listings that individuals can filter through keyword or location searches. Users can also upload their resumes to be found by employers and receive job recommendations through the platforms. These sites become true marketplaces by virtue of their scale. Indeed claims

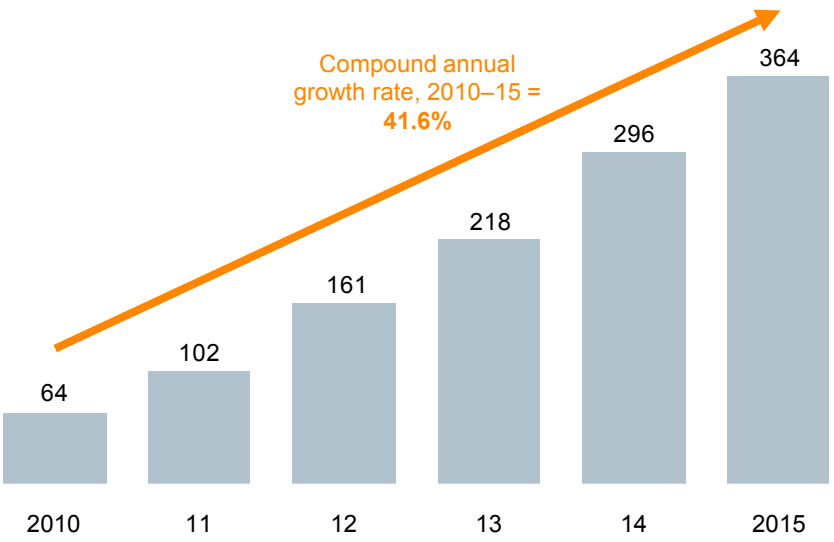
180 million unique visitors every month from more than 50 countries. Some 7,900 job searches are conducted every minute on Monster.com. And CareerBuilder has more than 24 million unique visitors a month and operates in 60 global markets.[29]

The largest online talent platform is LinkedIn, which enables individuals to post public online profiles, much like resumes. It has amassed more than 364 million members around the world in just over a decade and is available in 24 languages (Exhibit 8). The company, which posted revenues of $2.2 billion in 2014, facilitated almost a million hires that year. Individual users can link to and expand their professional networks, communicate with other members directly, list their skills, receive endorsements from colleagues, join interest groups, follow companies, and publish content. Employers can post open positions and invite individuals to submit applications, just as they do on other job sites. Employers and recruiters also use these sites to search for applicants based on worker skills and attributes that match their needs, contact potential candidates directly, and market themselves on their company pages.

Exhibit 8

LinkedIn's growth illustrates the rapid adoption of online talent platforms

Number of LinkedIn members by the first quarter of each year
Million members



Geographic distribution of members—top 10 countries, 2015

Country	Members Million
United States	115
India	31
Brazil	21
United Kingdom	18
Canada	11
France	10
China	9
Italy	8
Mexico	7
Australia	7

SOURCE: LinkedIn; McKinsey Global Institute analysis

The German site Xing works in a similar way; it has 14 million members worldwide, 8.8 million of whom are from German-speaking countries. The French social network Viadeo is based on a pay-for-performance recruitment model for employers. It owns and operates professional social networks with more than 65 million members, including 25 million in China, 3 million in Africa, and 1 million in Russia.

[29] Statistics from corporate websites.

The worker profiles gathered on such sites make passive recruiting possible—that is, candidates may be approached with job opportunities they did not know about, without even applying. Recruiters and HR professionals increasingly use these platforms to seek out and contact the talent they want rather than placing an ad and waiting to see who responds.

Companies such as Github and Gild take the search for the ideal candidate even further. Rather than searching profiles created by individuals themselves on a specific platform, they scan the entire Internet. Github, for example, is capable of finding examples of excellent open-source programming code and identifying its authors for recruiting purposes. Social media has created a rich new vein for companies to tap in identifying candidates.

Platforms connecting freelance workers with specific assignments, projects, or tasks

The freelance, temporary, part-time, and contingent segment of the labor force existed long before the Internet. In fact, freelancing has long been commonplace in professions ranging from writing, editing, design, and web development to many skilled trades, real estate appraisal, and even fitness training. Some individuals turn to it out of necessity, but many value the freedom, flexibility, variety, and autonomy that come with being an independent contractor.

However, statistics do not always provide a clear picture of how many workers are actually freelancing. This is due to the variety of working arrangements that are possible (including incorporated freelancers and other small business owners without employees, independent contractors, full-time employees who moonlight, and those who participate on contingent work platforms).[30] Exhibit 9 offers a snapshot of the overall freelance economy.

In the United States, temporary workers make up 4 percent of the force. Half of this segment (2 percent of the labor force) is engaged in temporary contract employment through companies such as Manpower Inc., which specialize in meeting short-term staffing needs. Traditionally, temporary workers were called in to fill clerical or manufacturing jobs, but they now span a range of occupations and skill levels. Self-employed independent contractors make up another 4 percent of the US labor force, and incorporated self-employment accounts for approximately 2 percent (although it is difficult to know exactly how much of this share is made up of true freelancers). Digital marketplaces for services—including platforms that dispatch contingent workers to provide services on demand—account for an even smaller subset. We estimate that these contingent workers currently make up less than 1 percent of the US working-age population, although this segment is growing rapidly (and it includes some people who have other part-time or full-time permanent jobs and others who were not in the labor force).

Online talent platforms that connect freelancers with specific work opportunities have grown dramatically in the past five years. Employers and buyers of services value the ability to call in outside help for an assignment on short notice. These platforms have dramatically lowered costs for startups and small companies that need specialized help, from accounting to marketing assistance for a product launch. They can also spur large companies to hire contingent workers when they cannot justify a full-time position. Individuals who participate value the ability to market their services more widely to secure a greater volume of assignments, or just to pick up extra work to supplement their regular income.

[30] For more on these data complexities, see Justin Fox, "Where are all the self-employed workers?" *Harvard Business Review*, February 7, 2014.

Upwork (formerly Elance-oDesk) has created online marketplaces for business services, such as software programming, graphic design, marketing, mobile development, and writing. The company states that businesses are already posting more than three million freelance jobs annually on the site, which facilitates some $1 billion in annual earnings for global freelancers.[31]

But online talent platforms are not just for professional services; they run the gamut of assignments. TaskRabbit, for example, takes the contingent approach but applies it to personal services such as running errands and performing home repairs. The site employs some 30,000 pre-approved individuals and background-checked individuals.[32] Many of them use it as a flexible part-time option to make extra money, while others turn it into a full-time job. Like TaskRabbit, Amazon Home Services matches tasks such as moving, repairs, cleaning, and shopping with individuals who have listed these skills, have been vetted by the platform, and can be reviewed by anyone who has hired them. Angie's List invites contractors and repair people to advertise on the site. Its users purchase subscriptions to gain full access to crowdsourced reviews that let them evaluate the quality of the services provided.

A growing array of platforms follow the contingent employment model but concentrate on delivering one type of specialized service, such as Uber, Lyft, and Sidecar for taxi services and UrbanSitter and Care.com for child care. A host of companies provide services on demand, deploying workers at a moment's notice to respond to requests for everything from housecleaning and laundry to food deliveries.

160K
Uber drivers in the United States at the end of 2014

Uber has expanded rapidly in markets around the world by offering one very specific service: driving passengers to their destination. Since its launch in 2009, the company has created a dynamic model for providing a service on demand through its mobile app, building a large contingent workforce in the process. Drivers earn income using their own cars (and covering their own expenses), but they have lower barriers to entry than in the traditional taxi industry and the ability to create their own flexible schedules. At the end of 2014, there were 160,000 active Uber drivers in the United States alone, and they received more than $650 million in payments during just the fourth quarter of that year.[33] Because Uber has rapidly gained market share from the more regulated traditional taxi and limousine industry, it has encountered resistance around the world—and has even been banned in some jurisdictions.

[31] "Elance-oDesk relaunches as Upwork, debuts new freelance talent platform," Upwork corporate press release, May 5, 2015.

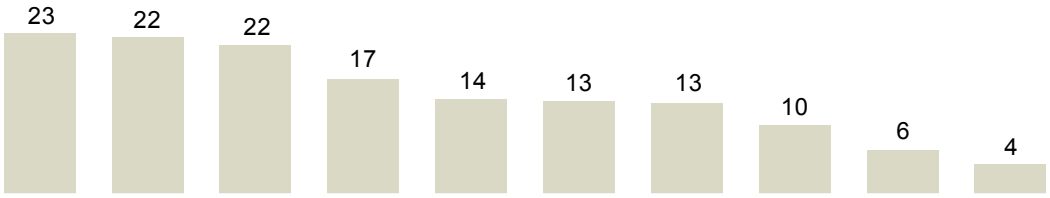
[32] TaskRabbit corporate blog, March 2015.

[33] Jonathan Hall and Alan Krueger, *An analysis of the labor market for Uber's driver-partners in the United States*, January 2015.

Exhibit 9

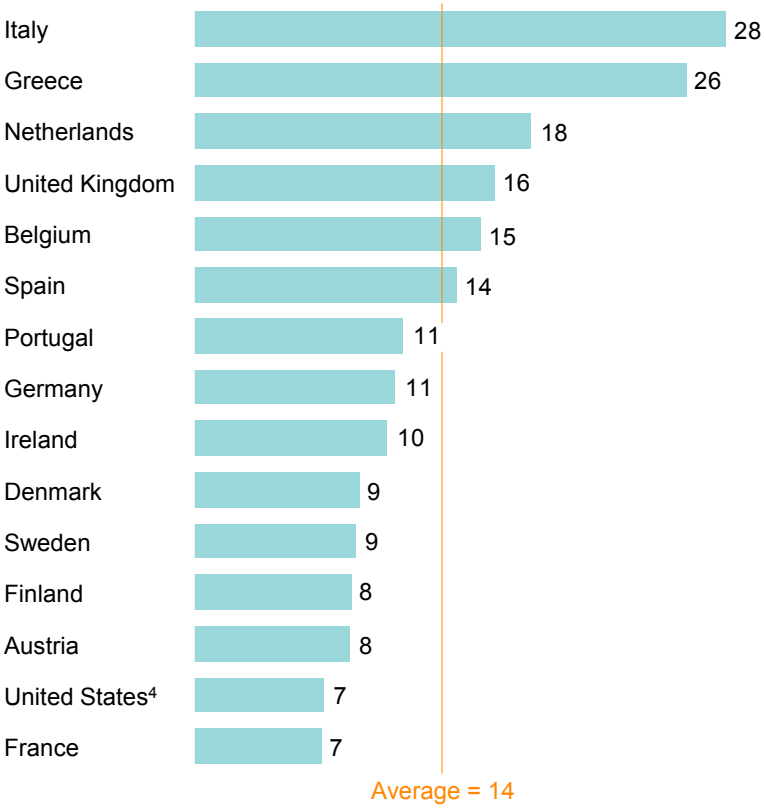
Snapshot of the freelance economy

Temporary workers' share of total employment, 2013[1]
%



	Spain	South Korea	Portugal	France	Japan[2]	Germany	Italy	Ireland	United Kingdom	United States
Million people	4.0	5.6	1.0	4.4	8.8	5.6	3.2	0.2	1.8	6.2
Compound annual growth rate, 2000–13 %	-0.2	-2.1	-0.4	0.9	0.5	2.6	0.8	6.6	-0.1	0.4

Unincorporated self-employed in business services, 2014[3]
% of total business services employment



The online "gig economy"

Platform	Number of individuals in the United States[5]
Upwork	2,500,000 freelancers
Uber	160,000 drivers
Lyft	60,000 drivers
Taskrabbit	25,000 service providers
HourlyNerd	10,000 consultants
Freelance Physician	10,000 physicians
Sidecar	6,000 drivers
Postmates	4,000 messengers
Instacart	1,000 shoppers
Favor	225 messengers

1 Temporary workers are employees who do not have a permanent contract with employers.
2 Temporary workers are a subset of non-regular workers; the latter account for one-third of employment in Japan.
3 Workers in such industries as information and communications, finance, professional, technical, and scientific services, and administration who do not have any other employees.
4 US data from 2011.
5 Numbers represent most recent obtainable data, between 2013 and 2015. The inactive share of these numbers is unknown.

SOURCE: OECD; The Conference Board; Eurostat; BLS; *Freelancing in America*, Freelancers Union & Elance-oDesk; McKinsey Global Institute analysis

Online talent platforms can help companies even after the hiring process by making workers more productive

Companies stand to gain a great deal from adopting online talent platforms. The sections above describe how employers can identify and recruit the best talent, lowering the considerable costs of recruiting. But the possible uses extend far beyond finding the right candidates.

Employers may also use online tools to test a job candidate's skills, aptitudes, and fit during the screening process. This helps companies find candidates who are more likely to thrive in the work environment, succeed in the role, and remain with the company for a longer period. Good.Co, for example, uses psychometric tests to determine if a particular worker will be a good fit with company culture and job requirements. Knack uses video games that can detect an applicant's soft skills, such as creativity, persistence, extroversion, and leadership. This information enables companies to make better hires.

Other platforms are useful for managing people more effectively after hiring. This can start with making the onboarding process more efficient and comprehensive—which reduces the time it takes for a new employee to start producing. Others apply the same kind of capability used in the recruiting process to match employees with work assignments and form more effective teams. Yammer is a social enterprise network that facilitates internal communication and teamwork. This type of platform can also help workers access internal expertise, which is a critical capability across a large organization.

Big data has not penetrated the human resources departments of most large companies, but small and midsize tech and service firms (many based in Silicon Valley) are creating innovative applications for them. Platforms such as Halogen and Reviewsnap make it easier for employers to provide digital performance feedback to employees, to set and manage goals and rewards, to onboard new employees, and to provide training. Glassdoor and PayScale can help with benchmarking salaries. Taleo, which was recently acquired by Oracle for $1.9 billion and had 20 million users in 2013, offers companies enterprise tools for human resources management. Evolv (now part of Cornerstone OnDemand) has created systems that encompass onboarding, social collaboration, learning and skills development, performance metrics and reviews, compensation, and succession planning. These HR technologies are particularly valuable for employers with large and geographically dispersed workforces.

Finally, online talent platforms can help companies use data on the "people" side of their operations to improve long-range planning. This could involve a multinational mapping out future expansion, a manufacturing firm planning ahead as its workforce ages, or a professional services firm creating a more effective pipeline for developing the next generation of managers and executives.

In Chapter 4, we calculate the impact of these tools on output and costs for different types of companies.

Online talent platforms can transform the way individuals navigate the world of work

Navigating the job market is daunting for most individuals, and the experience is made more difficult by a lack of information and information asymmetries. Online talent platforms can make the process more transparent. They not only open up new possibilities, but they can enable individuals to make better decisions. When individual success stories are multiplied millions of times over, they create significant impact on employment, productivity, and participation.

38%
of survey respondents said talent platforms helped them get a job they would not have otherwise found

- **Broader choices, greater agency.** The availability of comprehensive online job listings provides workers with more options, both directly and indirectly. By one measure, the number of online job ads in the United States alone increased from 2.5 million in 2005 to 5.4 million in early 2015—and this number is expected to continue to grow.[34] Forty-two percent of global respondents to a recent LinkedIn survey said that an online talent platform broadened their job options, and 38 percent said that using a platform helped them secure jobs they would not have otherwise found. Having greater choices (as well as far more detailed information about those choices) gives workers more options, more mobility, and a better sense of the wages they can command on the open market. In fact, the most sought-after candidates may not need to apply for jobs at all; the opportunities may come to them as passive recruiting becomes more widespread. In fact, 75 percent of hires made through LinkedIn in 2014 were passive recruits.[35]

- **Ability to find the right role.** Satisfied workers are more productive workers. Some platforms offer individuals new visibility into what it would be like to work for a given company; this increases the likelihood that they will choose a job and a work environment they will enjoy. Platforms such as Glassdoor and Vault gather anonymous reviews and salary information from current and former employees. This kind of reputational information helps job seekers make more informed decisions about whether they would find specific roles to be fulfilling. LinkedIn data shows that hires from online platforms are eight times more likely to be at the same company after two years and are 11 percent more satisfied in their jobs than in their previous positions (Exhibit 10).

- **Flexible work arrangements.** As described above, freelance platforms can improve the ability of individual workers to market their skills more widely and find new clients. On-demand service platforms have created "fractional" employment models that allow individuals to shape their own work schedules to fit their needs. While some individuals make their entire living through these platforms, there is evidence that many others use them to supplement their income. At Uber, for instance, 61 percent of drivers in the US work on a very part-time basis and have other employment.[36] This fractional employment model raises questions about the quality of jobs that are being created and the responsibilities of the entities creating those jobs, but it does provide individuals with avenues for earning income. Because these assignments are flexible and self-directed, they can allow part-time workers to increase their hours or even draw stay-at-home mothers, seniors, and discouraged workers who have left the labor market back into productive work.

- **More informed decisions about education and training.** Many students pursue courses of higher education based on faulty expectations of what will lead to a stable career. Online talent platforms are gathering enormous troves of data on current and projected trends in the demand for skills, career paths, and work opportunities that can change this dynamic. Platforms can provide students with better visibility into the salaries associated with specific jobs and industries as well as how the graduates of specific institutions are faring in the job market. There is potential for platforms to provide workers with a full return-on-investment profile for any proposed course of education or training. In the United States, where student loan debt has become an alarming burden on young people, this capability could prove to be especially valuable. Companies like Viridis and Pymetrics offer certifications that link to employer needs with the aim of creating a match. Individuals can use these platforms to gain insight into which skills they will need in the future and which fields offer the greatest job and wage growth; already,

[34] The Conference Board Help-Wanted Online data series.

[35] LinkedIn Job Seeker Survey 2014.

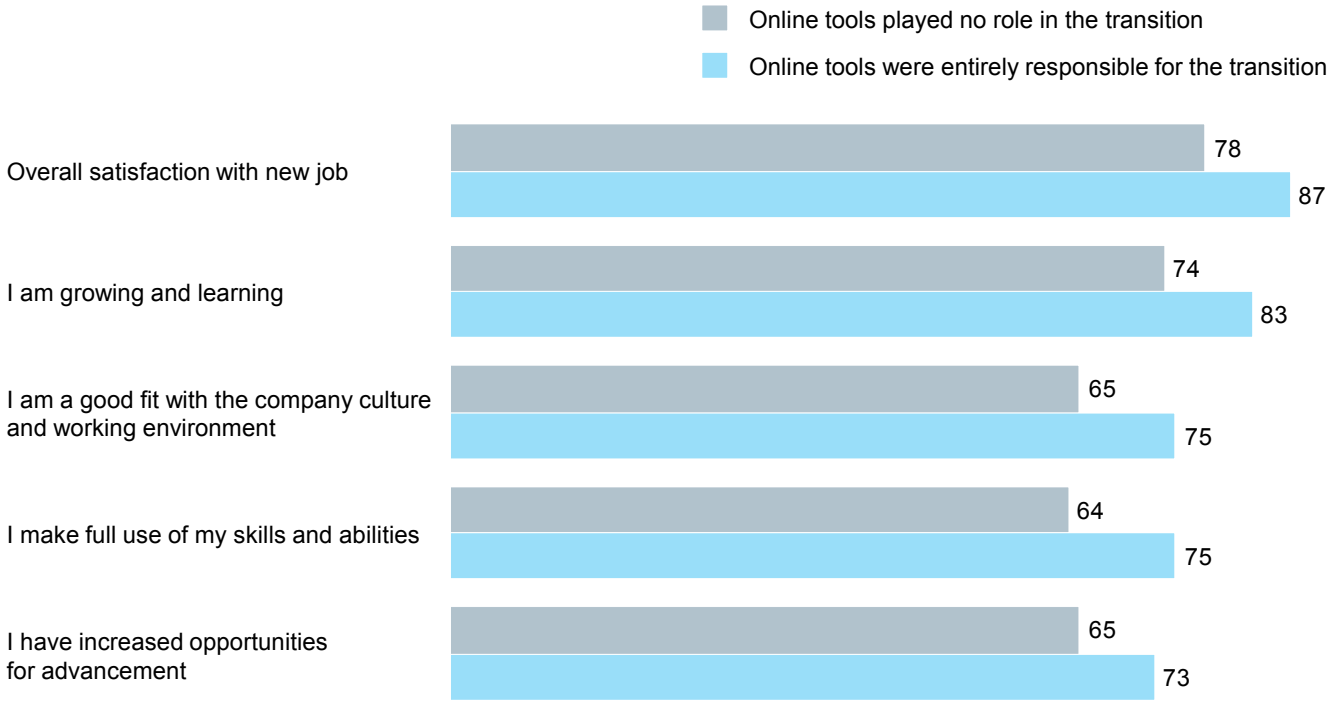
[36] Jonathan Hall and Alan Krueger, *An analysis of the labor market for Uber's driver-partners in the United States*, January 2015.

almost 20 percent of LinkedIn survey respondents said they have used online platforms to understand the skills that are in demand and seek training.

Exhibit 10

Individuals who find new jobs using online talent platforms report higher job satisfaction

Survey question: "How does your current work situation compare to your previous work situation on each of the following dimensions?"
Job satisfaction ratings for current compared to previous job (% of ratings of 4 and 5 on scale of 1–5)[1]



1 Scale: 1 = Significantly worse, 2 = Somewhat worse, 3 = Neither worse nor better, 4 = Somewhat better, 5 = Significantly better.
NOTE: The number of responses differed by measure, ranging from 1,576 to 1,615 responses for the sample for whom online tools played no role in the transition and 729 to 733 responses for the sample for whom online tools were entirely responsible for the transition.

SOURCE: LinkedIn global survey, 2015; McKinsey Global Institute analysis

Individuals will benefit from online talent platforms to varying degrees

For individuals across the spectrum of work, voluntary job changes are typically associated with higher wages or with other intangible benefits that entice workers to switch (such as a better lifestyle, more opportunities for advancement, or a more enjoyable workplace). To the extent that online talent platforms enable more frequent job switches and better matches with employers, we would expect individuals to have more ability to see their income grow.[37] Almost one-third of LinkedIn survey respondents reported that they use online talent platforms to better understand their value in the job market.

To date, most users of online talent platforms have been educated and skilled professionals seeking traditional, permanent employment. They are already reaping huge benefits by significantly reducing search time and expanding their job options. Many are receiving job offers through passive recruiting and watching as employers bid up their salaries.

While online talent platforms are expanding into new occupations, sectors, and geographies, the majority of workers who lack specific credentials or distinctive skills have

[37] See, for example, José Mustre-del-Río, "Following the leaders: Wage growth of job switchers," *The Macro Bulletin*, Federal Reserve Bank of Kansas City, December 19, 2014; and Betsey Stevenson, *The impact of the Internet on worker flows*, Wharton School of Business, University of Pennsylvania, December 2006.

not yet migrated onto these sites to the same degree. But as job searching becomes more digitized for everyone, this will change over time.

Some individuals who lack distinctive skills may find that employers can replace them more easily and at lower cost. This could limit their wage growth and increase the income gap between the highly skilled (and highly paid) and the less educated segments of the workforce. But online talent platforms can add a potentially valuable new dimension to profiles of individual workers: their soft skills, traits, and endorsements from colleagues and superiors. This may allow workers without formal educational credentials to showcase other traits that set them apart, such as work ethic, creativity, and customer service. Expanded credential features can be tailored to specific occupations. Online platforms could enable individuals to codify these traits through mechanisms such as endorsements and ratings for services provided. Questions on who owns this type of data are important to resolve, as we discuss in the final chapter of this report.

Over time, other new capabilities are emerging that have the potential to help a much wider range of people. Talent platforms are uniquely positioned to track the positions that employers are filling, the skills required, and the career pathways that take people from education and entry-level positions into more fulfilling work. They can empower individuals—from high school students to workers seeking a mid-career change—with better information about educational investment and training.

Another potential issue is the quality of jobs created by contingent work platforms. Some of the workers who participate in these digital marketplaces value the ability to set their own hours and control their schedule, but for others, short-term contract work may be their only option for getting by in a difficult labor market. On-demand platforms may create more work opportunities, but they also shift more risk and responsibility from employers to workers if such workers are not covered by laws protecting regular employees.[38] For more on the issues surrounding contingent workers, see the discussion in Chapter 5.

•••

Online talent platforms are reaching a new stage in their evolution. Having attracted hundreds of millions of individual users as well as the world's major employers, they are rapidly spreading around the world and into additional sectors of the economy. As with any enterprise that relies on the Internet, their ability to create value increases along with the number and diversity of their participants. In a world that will have more than eight billion smartphone subscriptions by 2025, online talent platforms have enormous room for growth. Existing platforms will continue to expand their networks, new platforms will be created, additional functionalities will be added, and the data sets created by this activity will grow richer and deeper. The next chapter looks at how this could add up to significant macroeconomic impact over the coming decade in countries around the world.

[38] Richard Reeves, "Is free working a forlorn hope?" *Management Today*, April 1, 2015.

3. THE ECONOMIC POTENTIAL OF ONLINE TALENT PLATFORMS

Traditional approaches to job searching and hiring have often failed to deliver the best results for workers and companies alike—and when these issues are multiplied many times over, they take a toll on the broader economy. But as online talent platforms rapidly expand the size of their networks and the volume and types of data they can synthesize, the cumulative benefits are growing larger. These new marketplaces and digital tools are bringing much-needed efficiency and transparency to the process of matching people with work. Essentially, they reduce the transaction costs associated with employers filling positions and workers finding new jobs. They are not a panacea for the problems in labor markets, but they can make important inroads.

Economic growth ultimately boils down to the size of a country's labor force and the output created by each worker. Online talent platforms strengthen these drivers in multiple ways. These include drawing inactive workers into the labor force and making it possible for people who want more work to add hours. Talent platforms can reduce unemployment by cutting the search time needed to find a new job and enabling new matches that would not have otherwise happened. They can also raise productivity by facilitating job matches that are a better fit and offering an alternative to workers in the shadow economy.

540M
individuals worldwide could benefit in various ways from online talent platforms

Our research finds that by 2025, online talent platforms could add $2.7 trillion, or nearly 2 percent, to global GDP. They could also increase employment around the world by 72 million full-time-equivalent positions. But the actual number of people who benefit would be much larger, since millions more will gain the ability to add small numbers of additional hours through contingent work platforms, and still others will be able to switch from unfulfilling jobs to better positions. We project that 10 percent of the global labor force could benefit in various ways from online talent platforms by 2025. This represents some 540 million people connecting with new opportunities, a development that could create significant economic and societal value.

Beyond the direct economic impact captured in our projections, online talent platforms also have the potential to reduce the misallocation of resources in education systems and public-sector labor market support programs around the world. In addition, they may spur important long-term dynamic effects, such as enhancing innovation, shifting the mix of skills in the labor force over time, and speeding the process of creative destruction.

Online talent platforms can influence three drivers of economic growth

Online talent platforms can directly affect three components that drive economic growth: labor force participation, the overall level of employment, and labor productivity. By improving each of these, they can increase GDP. One important caveat in our analysis is that we use a supply-side model of the economy, which assumes that by 2025, economies around the world will no longer have slack in aggregate demand or in labor markets, so that everyone who wants to work can find a job. This is plausible given that online talent platforms may enable additional hiring—and as more people find work and increase their incomes, their spending boosts aggregate demand further, enabling job creation for others.

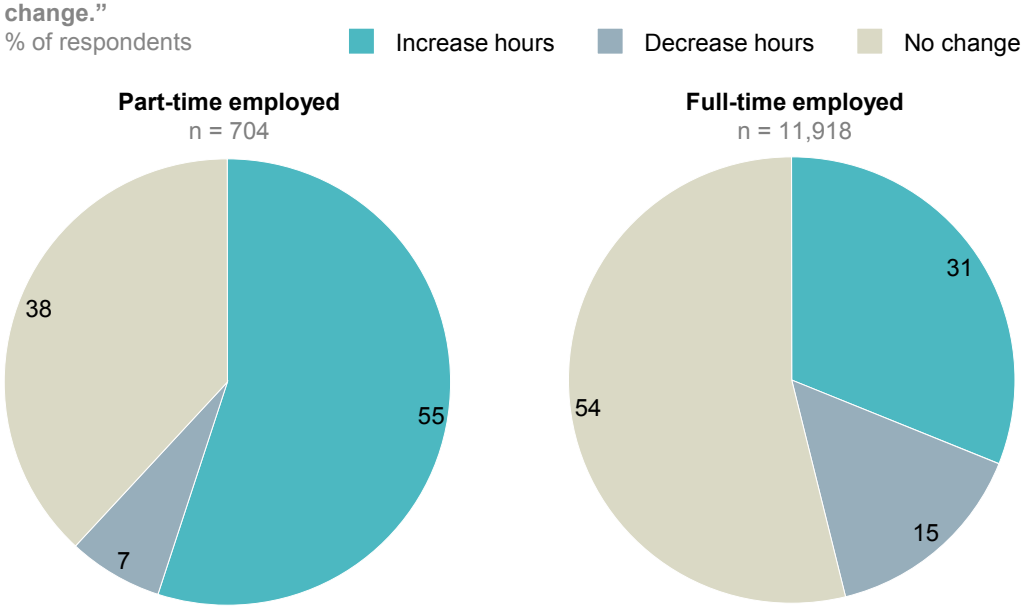
Increasing labor force participation and hours worked

Around the world, anywhere from 30 to 50 percent of the working-age population is not working, is unemployed and looking for work, or is working in a part-time capacity only. As we noted in Chapter 1, this amounts to nearly 850 million people in seven of the world's major economies (the United States, the United Kingdom, Germany, Japan, China, India, and Brazil). While many have chosen not to work for personal reasons or cannot work for health reasons, there is clear evidence that a large share would choose to work for a few hours per week if they had the opportunity. A recent survey in the United States found that three-quarters of self-identified homemakers, or stay-at-home mothers, would be likely to return to work if they had flexible options.[39] In a global survey conducted by LinkedIn in 2015, 55 percent of part-timers and 31 percent of full-time workers said they would like to add hours for a proportionate increase in pay (Exhibit 11).

Exhibit 11

More than half of part-time workers would increase their hours for a proportionate increase in pay

Survey question: "Consider the following hypothetical situation: If you could keep your current role but change the number of hours you work in exchange for a proportionate pay increase or decrease, would you prefer to: a) increase hours for proportionate pay increase; b) decrease hours for proportionate pay decrease; or c) neither, I'd prefer no change."



NOTE: Numbers may not sum due to rounding.

SOURCE: LinkedIn global survey, 2015; McKinsey Global Institute analysis

Platforms such as Freelancer.com, TaskRabbit, Uber, Lyft, and Handy have created a new model of "fractional employment" that can appeal to people who do not want traditional full-time positions (including stay-at-home mothers, seniors, and students). The availability of these options can activate people who were previously out of the labor force altogether. It also creates avenues for people who are working part-time to add hours, increasing their output. One study found that the majority of Uber drivers had other jobs but drove for the platform to increase their hours worked.[40]

[39] Kaiser Family Foundation/*New York Times*/CBS News poll of 1,002 non-employed US adults, December 2014.

[40] Jonathan Hall and Alan Krueger, *An analysis of the labor market for Uber's driver-partners in the United States*, January 2015.

There is some evidence that these platforms do indeed draw individuals into the labor force. In Germany, one study found that Internet job searches were not only correlated with better matches, but they were especially valuable for helping mothers return to the job market.[41] And the more than $900 million of contract work facilitated by Upwork (then Elance-oDesk) in 2014 strongly suggests that companies that cannot justify a full-time position will hire an external contractor for specific assignments.[42]

Reducing unemployment

Online talent platforms also create economic impact by reducing unemployment. This happens in two ways: by reducing the amount of time people spend looking for new jobs, and by enabling new matches that might not have otherwise taken place.

At any given time in a healthy economy, some people are unemployed and searching for work. There is a normal degree of turnover as businesses shut down and start up, as people move to new locations, and as students and others enter the labor force while older people retire. Labor market fluidity is a positive dynamic in the economy. It is correlated with higher overall employment, wages, and productivity. Not only does it enable people to find better-paying and more productive jobs, but it also allows companies to expand and contract. Moving labor efficiently from shrinking firms to young, growing enterprises aids the process of creative destruction that lies at the heart of economic growth.[43] As noted in Chapter 1, labor market fluidity (or turnover) is much higher in the United States than in most other countries, with roughly 5 million people (3 percent of the workforce) leaving their jobs every month and 5 million people hired for new positions. But even US labor market fluidity has been falling, which represents a worrisome trend.

45%
average reduction in job search time reported by survey respondents

Online talent platforms have given employers new tools for recruiting while enabling individuals to search for jobs more broadly and more efficiently. This significantly reduces the transaction costs associated with hiring workers. A LinkedIn survey found that around 60 percent of respondents who had recently switched jobs said that their use of online talent platforms had cut their search time (Exhibit 12). As the duration of frictional unemployment is reduced, the so-called natural rate of unemployment in the economy is lowered, enabling more people to be employed at any given time.[44]

Talent platforms may also enable new matches between companies and unemployed job seekers that would not have otherwise taken place—that is, they reveal possibilities that were previously unknown to either party. Almost half of the LinkedIn survey respondents reported that online talent platforms broadened their options and helped them spot opportunities they would not have otherwise found. Because online talent platforms aggregate candidates and job openings across regions or even entire countries, they may address some geographic mismatches between workers and jobs. Even if only a small fraction of workers are willing to move for a job in another location, the overall effect would be significant. During a sample week in early 2015, some 36 percent of the applications submitted on LinkedIn were for jobs based more than 100 miles away from the applicant's home.

41 Constantin Mang, *Online job search and matching quality*, Ifo Institute, May 2012.

42 *Elance-oDesk 2014 annual impact report*.

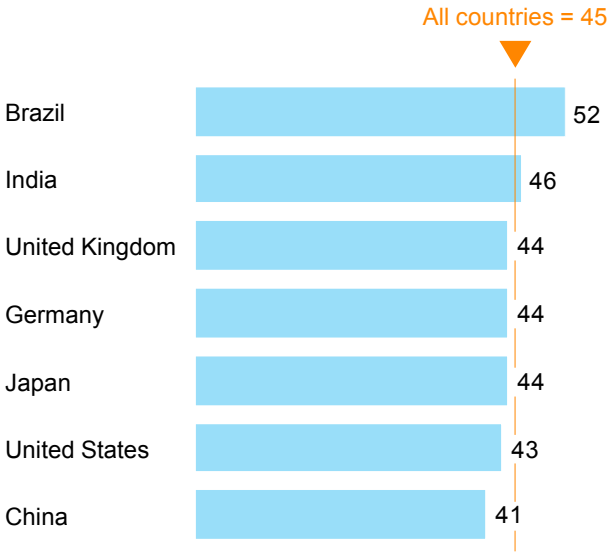
43 Steven J. Davis and John Haltiwanger, *Labor market fluidity and economic performance*, NBER working paper number 20479, January 2015; *Economic Report of the President,* 2015.

44 In economic terms, this concept is known as the NAIRU, or the non-accelerating inflation rate of unemployment. By shortening job search time, online talent platforms may enable a lower NAIRU, all else being equal. See, for example, David Brauer, *The natural rate of unemployment*, US Congressional Budget Office, working paper series 2007-06, April 2007. For more on how job transitions affect the natural rate of unemployment, see Christopher A. Pissarides, *Equilibrium unemployment theory*, MIT Press, second edition, 2000.

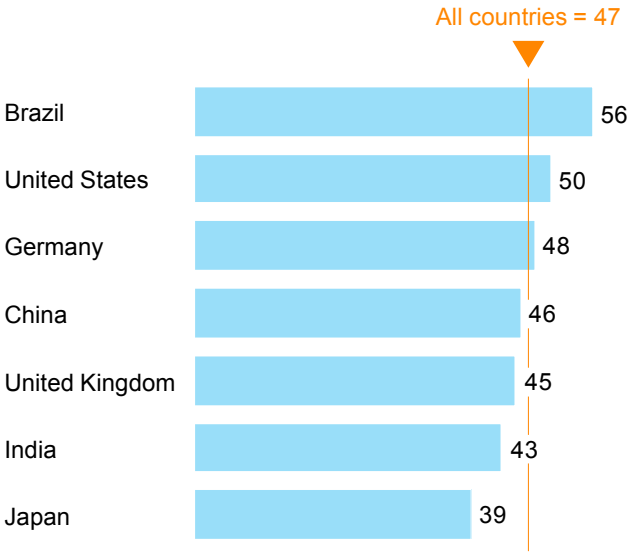
Exhibit 12

Online talent platforms significantly reduce job search time and improve job options

Survey question: "By what percent would you say your transition time was reduced [if LinkedIn or similar tools reduced it]?"
% reduction in transition time
(n = 6,924)



% of respondents stating that LinkedIn or similar platforms helped to broaden or improve their job options
(n = 5,750)



SOURCE: LinkedIn global survey, 2015; McKinsey Global Institute analysis

Raising labor productivity

Talent platforms can contribute to increasing labor productivity—the output generated by each worker—in two ways. The first is by putting the right person in the right job. As noted in Chapter 1, a survey conducted by LinkedIn in 2014 found that some 37 percent of respondents around the world feel their current jobs do not fully utilize their skills. This represents an enormous waste of human capital. When overqualified individuals languish in jobs they find unfulfilling, they are not as productive as they could be.

37%
global survey respondents reporting that their current jobs do not utilize their skills

Online talent platforms increase the odds of making better job matches by giving both individuals and employers visibility into a wider range of options. Employers can also use sophisticated algorithms for recruiting, screening, and assessment to ensure that the candidates they are evaluating will fit their needs more precisely. Use of big data analytics tools or online tests of soft skills (such as teamwork) can also indicate whether a particular job candidate will fit with a company's culture and organization. And individuals can use online talent platforms such as Glassdoor to see what current and former employees say about their job satisfaction, workplace environment, and salary before choosing to accept an offer. The result in many cases will be a better match between workers and jobs.

The second type of productivity impact comes from drawing people who are engaged in informal work into the formal economy. The informal category encompasses workers in enterprises that are engaged in legitimate business activities but fail to fully comply with all tax, labor market, and product regulations, as well as individuals working on their own providing services or selling goods. The latter phenomenon includes domestic workers, skilled tradesmen, and others who are paid on a cash basis and do not report their income to the tax authorities.

The individuals working in informal situations typically earn low wages and lack legal and social protections. Informal enterprises lack the economies of scale, technology, and management expertise to raise their productivity and grow. Previous McKinsey research has found that around the world, informal enterprises have sharply lower productivity than formal companies in the same sectors.[45]

Online talent platforms can bring some individuals out of the shadows and guide them to better opportunities, significantly raising their productivity. This may happen through platforms that match workers with permanent employment (full-time or part-time) or through digital marketplaces for contingent work. Bringing under-the-table workers onto contingent work platforms can enable them to secure a greater volume of work or to specialize. For example, platforms such as TaskRabbit and Handy bring services such as dog walking, lawn mowing, and house cleaning (activities that skew heavily toward informality) to the formal sector as workers and small businesses register online. Since payments are made digitally through most of these platforms, the incomes of individual workers can be aggregated and reported to tax authorities. In the United States, for instance, most of these platforms provide their contractors with 1099 tax documents at the end of the year.

By 2025, online talent platforms could increase global GDP by $2.7 trillion and improve job outcomes for 540 million people

Online talent platforms will not solve all of the labor market strains around the world. But helping even a very small fraction of the individuals affected by these issues could have an enormous impact on the economy, given the sheer number of people this represents.

We calculate the potential impact of these platforms on GDP and employment by quantifying the various mechanisms described above for increasing labor force participation and hours worked, reducing unemployment, and raising productivity. For each of these mechanisms, we make conservative assumptions about the numbers of people that online talent platforms could reach (see Box 2, “Methodology for calculating impact on GDP and employment”).

Our model shows that with plausible assumptions, online talent platforms could add $2.7 trillion to annual global GDP by 2025. This would represent an increase of 2 percent over current projections for world GDP in that year (Exhibit 13). Reaching this potential implies raising the annual rate of global GDP growth from consensus forecasts of 4.0 percent to 4.2 percent.[46]

[45] For more on the definition of informality as well as an exploration of how the prevalence of informal businesses can lower productivity and hinder economic growth, see *A tale of two Mexicos: Growth and prosperity in a two-speed economy*, McKinsey Global Institute, March 2014; *Africa at work: Job creation and inclusive growth*, McKinsey Global Institute, August 2012; Joe Capp, Heinz-Peter Elstrodt, and William B. Jones Jr., “Reining in Brazil’s informal economy,” *McKinsey Quarterly*, number 1, 2005; and Diana Farrell, “The hidden dangers of the informal economy,” *McKinsey Quarterly*, July 2004.

[46] As currently projected by IHS Global Insight, The Economist Intelligence Unit, and the International Monetary Fund.

Box 2. Methodology for calculating impact on GDP and employment

Our microeconomic modeling approach calculates the potential increase in labor productivity (output per worker) and the number of hours worked that could be enabled by online talent platforms. We relied on a variety of sources showing the impact that online talent platforms are already having. These include proprietary data from a new survey conducted by LinkedIn, microeconomic data from other online talent platforms, and industry and company-level data. We also use macroeconomic data on demographics, labor market characteristics, Internet penetration, and GDP forecasts.

We built detailed country-specific models for seven large economies that cover a range of income and development levels: the United States, the United Kingdom, Germany, Japan, China, India, and Brazil. We extended the results from these seven models to 47 additional countries, based on their macroeconomic and labor market characteristics. Together these countries account for 90 percent of global GDP and 80 percent of global employment. We then extrapolate the figures to account for the remainder of the global economy.

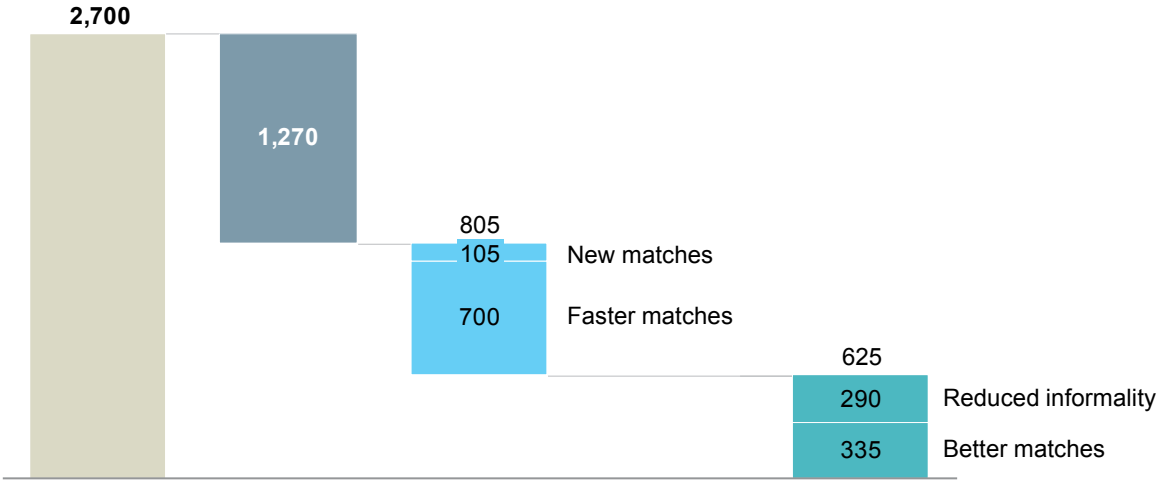
For each of the seven focus countries, we model the impact of the following mechanisms for raising GDP and employment: 1) increasing participation by drawing inactive people into work; 2) increasing hours worked among part-time employees; 3) reducing unemployment through faster matches; 4) reducing unemployment by enabling new matches; 5) raising productivity by creating *better* matches between workers and jobs; and 6) raising productivity by drawing workers out of informal employment. We do not include any induced effects. For each country, we use country-specific assumptions; actual data on the number of people who are employed, unemployed, and inactive; and Internet penetration today and projected for 2025. See the separate online technical appendix for further detail.

We acknowledge one important caveat: Our analysis uses a supply-side model of the economy, and assumes that by 2025, economies around the world will no longer have slack in aggregate demand or in labor markets. This means that everyone that wants to work can find a job. Given the lingering labor market woes in the aftermath of the Great Recession, this may seem like a strong assumption. However, it is reasonable to expect that economies will no longer be in a cyclical downturn in a decade's time and will have returned to health. Moreover, there are several reasons to believe that online talent platforms will enable additional hiring. This may come from startups, which can turn to contingent marketplaces to hire specialized help and lower their business costs; from large companies that find it feasible to hire a fractional worker when they would not have hired a full-time worker; and from growing demand for services that people used to perform themselves, from household chores to driving to child care. Finally, when more people find work and increase their income, their additional spending creates aggregate demand that enables job creation for others.

Exhibit 13

Online talent platforms have the potential to increase global GDP by $2.7 trillion and employment by 72 million full-time equivalents by 2025

GDP contribution
$ billion



	Total impact, 2025	Higher participation[1]	Reduced unemployment	Higher productivity
GDP increase %	2.0	0.9	0.6	0.5
Additions to the workforce Million FTE[2]	72	47	25	

1 Includes increasing participation among people who currently do not work and increasing hours among part-time workers.
2 Full-time equivalents.
NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

Online talent platforms could improve work outcomes for 540 million people around the world

In addition to increasing GDP, our model shows that online talent platforms would have a substantial impact for individual workers. These platforms could boost global employment by 72 million full-time-equivalent positions by 2025 by reducing unemployment and increasing participation.[47]

However, the total number of people whose working lives would be improved by online talent platforms is much larger: some 540 million individuals, or 10 percent of the global working-age population in 2025 (Exhibit 14). This includes 230 million who would have shorter job searches, reducing the amount of time they spend unemployed, or would be able to find job opportunities they otherwise would have missed. Some 200 million people who are not in the labor force or are currently working only part-time would be able to add at least a few more hours per week, mainly through online marketplaces for contingent work. Another 60 million would benefit from finding a job that better matches their skills or

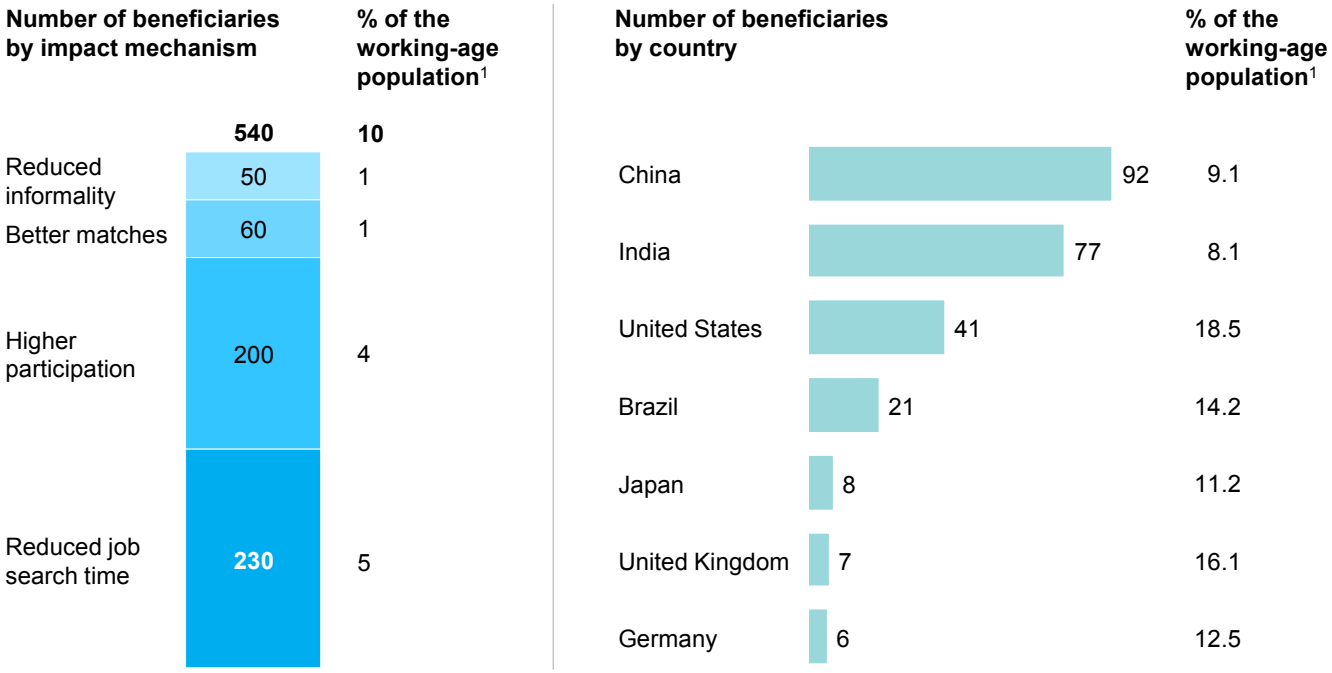
[47] Our supply-side analysis assumes that by 2025, the world economy and global labor markets will be operating without slack, meaning that everyone who wants to work will be able to find a job. In the long term, this assumption of the economy operating in equilibrium is plausible. If this assumption does not hold, then the increase in the number of full-time-equivalent positions may be less than we project.

preferences. And up to 50 million people in informal employment could find more formal opportunities that give them better prospects for growth.

Exhibit 14

By 2025, online talent platforms could benefit some 540 million people, or 10 percent of the working-age population

Million people, 2025



The total number of people who could potentially benefit far exceeds the 72 million full-time equivalent jobs created. The 540 million figure includes people who will experience faster job searches, people who are already employed but find better jobs, people who add hours on freelance platforms, and people who move into the formal sector.

1 Ages 15–64.
NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

Increasing participation in work has the largest impact on GDP

Online talent platforms exert their largest effect on GDP by increasing the number of people participating in the labor force and increasing the hours worked by those currently in part-time positions. This could add $1.3 trillion annually to global GDP by 2025 (Exhibit 15). The size of this impact reflects the large share of working-age people who are out of the labor force in most countries and the power of platforms to create flexible and accessible work opportunities for them. Even assuming that only a very small share of individuals who are out of the labor force begin to work through online talent platforms (for instance, we assume that only 12 percent of inactive women would pursue this option), and that they work minimal hours when they do, this represents a large increase in participation. These effects could raise employment by 47 million full-time-equivalent positions.

The ability of faster matching to reduce unemployment could also produce substantial economic impact, adding some $700 billion to annual global GDP in 2025. This is a conservative estimate based on the assumption that the current level of labor market fluidity remains the same. But there are some reasons to believe that continued adoption of online labor platforms could increase the rate of job switching as new opportunities become more available and passive recruiting becomes more prevalent. The effect of enabling “new” matches is much smaller, at $105 billion annually. Together these two effects could add

up to $805 billion to annual global GDP by 2025 while increasing global employment by 25 million full-time-equivalent positions.

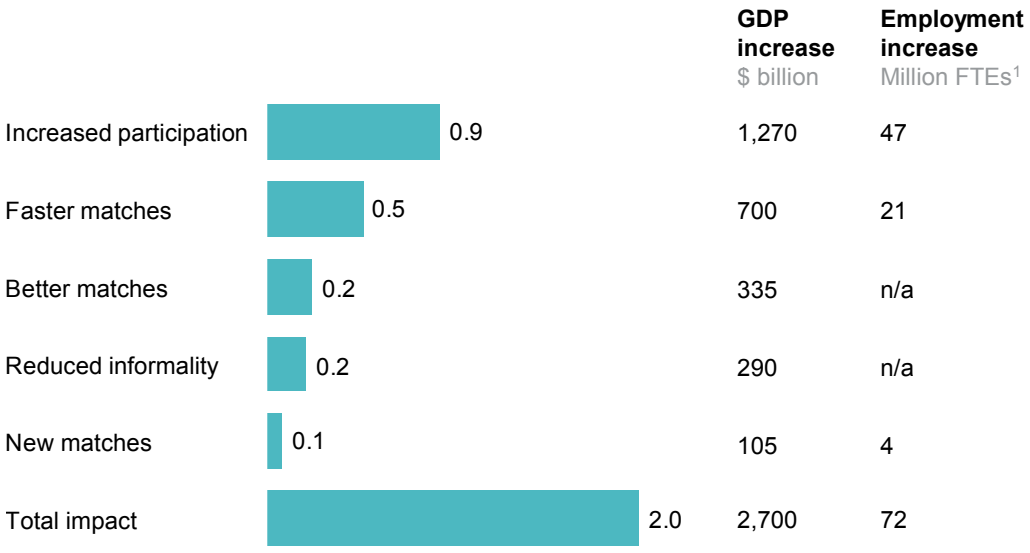
Creating better matches between workers and jobs could raise global GDP by $335 billion by 2025. This reflects the fact that more than one-third of people today feel their jobs do not fully utilize their skills, and the average worker obtains a substantial increase in wages by switching jobs. Since this affects people who currently have jobs, we assume it has no impact on raising employment.

Finally, platforms create economic value by enabling people to shift from informal to formal employment. This adds another $290 billion in annual global impact.

Exhibit 15

The most important mechanisms for boosting global GDP are increased participation and reduced job search time

Impact of online talent platforms by mechanism, 2025
%



1 Full-time equivalents.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

The economic impact varies by country

The extent to which online talent platforms can raise GDP and employment varies greatly depending on a country's starting point in terms of labor market characteristics, education and income levels, demographic trends, and Internet usage. Exhibit 16 shows the potential impact for countries around the world.

The largest potential to raise GDP is found in countries with persistently high levels of unemployment and low labor force participation, including South Africa and Spain. The power of online talent platforms for these and similar countries is in reducing the natural rate of unemployment by getting people into new jobs faster, and by enabling new matches that may otherwise not have occurred. A third important effect in these countries is drawing young people who are not in education or employment into work, for instance through online marketplaces for contingent work.

Exhibit 16

The potential impact of online talent platforms varies across countries

GDP >0.9% 0.5–0.9% <0.4% **Employment** >3% 2–3% <2%

Economies	GDP	Share of GDP (%)					GDP	Employment	
Advanced	%	Increased participation	Faster matches	New matches	Better matches	Reduced informality	$ billion	% of employees	1,000 people
Spain	3.3	0.8	1.7	0.4	0.2	0.2	58	4.4	748
Greece	3.2	0.9	1.5	0.4	0.2	0.2	10	4.3	161
Portugal	2.5	0.8	1.0	0.3	0.1	0.2	7	3.2	140
Italy	2.5	1.0	0.9	0.2	0.2	0.2	52	3.1	734
United States[1]	2.3	1.1	0.6	0.1	0.4	0.1	512	2.7	4,091
France	2.3	1.1	0.7	0.1	0.3	0.1	64	2.9	784
Belgium	2.2	1.1	0.5	0.1	0.3	0.2	12	2.7	120
Sweden	2.1	0.9	0.6	0.1	0.4	0.1	11	2.5	119
Finland	2.1	1.0	0.5	0.1	0.3	0.1	5	2.5	61
Denmark	2.1	0.9	0.5	0.1	0.4	0.1	6	2.4	67
Canada	2.0	1.0	0.5	0.1	0.4	0.1	41	2.4	436
United Kingdom[1]	2.0	0.9	0.5	0.1	0.4	0.1	68	2.4	766
Australia	1.9	1.0	0.4	0.1	0.4	0.1	28	2.2	271
Germany[1]	1.7	0.8	0.4	0.1	0.4	0.1	70	1.9	708
Switzerland	1.7	0.9	0.3	0.1	0.4	0.1	8	1.9	98
Singapore	1.7	1.0	0.2	0.0	0.3	0.1	9	1.9	67
South Korea	1.6	0.9	0.2	0.0	0.4	0.1	39	1.8	416
Netherlands	1.6	0.7	0.3	0.0	0.4	0.1	14	1.8	147
Austria	1.5	0.8	0.3	0.0	0.3	0.1	7	1.7	70
Japan[1]	1.5	0.7	0.2	0.0	0.4	0.1	78	1.6	906
Emerging									
South Africa	3.9	1.1	2.1	0.1	0.2	0.4	20	5.0	861
Colombia	3.1	0.9	1.4	0.2	0.1	0.5	25	3.7	946
Philippines	2.7	0.9	0.9	0.1	0.2	0.6	22	2.9	1,359
Egypt	2.7	1.4	0.5	0.1	0.2	0.4	21	3.2	945
Russia	2.5	0.9	0.7	0.1	0.2	0.6	82	2.5	1,605
Hungary	2.5	1.0	0.8	0.2	0.2	0.4	7	2.9	110
Nigeria	2.5	1.3	0.3	0.1	0.2	0.7	20	2.6	1,889
Turkey	2.5	1.3	0.4	0.1	0.3	0.4	41	2.8	799
Brazil[1]	2.4	0.8	0.8	0.1	0.1	0.6	69	2.6	2,686
Peru	2.3	0.8	0.5	0.1	0.2	0.8	12	2.0	320
Chile	2.3	0.9	0.8	0.1	0.2	0.3	12	2.8	210
Mexico	2.3	1.0	0.6	0.1	0.1	0.4	60	2.6	1,349
Poland	2.2	0.9	0.6	0.1	0.4	0.2	27	2.5	353
Indonesia	2.2	0.9	0.8	0.1	0.1	0.3	57	2.7	3,538
Kenya	2.2	1.1	0.4	0.1	0.2	0.4	3	2.4	536
Saudi Arabia	2.1	1.3	0.2	0.1	0.3	0.2	32	2.5	276
Czech Republic	1.9	0.8	0.4	0.1	0.4	0.1	7	2.1	103
Malaysia	1.9	1.1	0.1	0.0	0.2	0.5	16	2.0	286
India[1]	1.9	1.2	0.2	0.0	0.2	0.3	222	2.2	11,343
Thailand	1.8	0.8	0.1	0.0	0.1	0.8	20	1.3	511
China[1]	1.5	0.7	0.4	0.0	0.1	0.2	485	1.7	12,868

1 Detailed results and insights are available for these countries.
NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Online Talent Platforms Model; McKinsey Global Institute analysis

In most advanced economies, the largest impact comes from enabling more adults and young people who are not currently employed or looking for a job to work through fractional arrangements on contingent work platforms. This accounts for roughly half of the impact in a range of countries, including the United States, France, the United Kingdom, and South Korea. The increase in labor participation also comes through increasing the numbers of hours worked by part-timers. This effect is particularly large in Germany and Japan, where many women work but only in part-time positions.

These same mechanisms can also have a large impact in emerging economies, but many of them also stand to make large gains by shifting more people into formal employment from the informal economy, increasing their productivity.

Online talent platforms can reduce the need for unemployment benefits and make education spending more effective

Beyond their direct economic impact, online talent platforms can help improve the allocation of resources in education systems, vocational training programs, and public-sector labor market programs around the world. In addition to creating savings simply by reducing unemployment (and thus the need for unemployment benefits), these platforms have broader long-term potential to make systems for skills development more closely attuned to the needs of employers across the economy.

Talent platforms are collecting a time series of extremely detailed data on the skills that are in demand and the paths that individuals follow from education to roles in specific industries. With this data in hand, they are gaining the ability to make more accurate projections about which jobs are in demand and in decline in a given region (as well as what training is needed to get them). This information can help the next generation of students make more informed decisions about which courses of education to pursue and how cost-effective certain programs will be. Educational institutions, placement services, and training providers can become more responsive to these trends. Some of the public funding that goes toward less effective programs today could be redeployed to other productive uses.

Labor market programs

The United States, the United Kingdom, Germany, and Japan alone spend an estimated $190 billion annually on unemployment benefits as well as other labor market programs such as job-placement services, training programs for the unemployed, and employment subsidies. Lower unemployment could obviously lower the spending required to provide this support—and online talent platforms help to achieve this by accelerating the process of matching workers with jobs and by enabling some matches that otherwise would not have been made.

Public-sector employment agencies do not always generate the kind of data needed to provide solid evidence of their outcomes or effectiveness. One recent study that examined job-placement programs in France found that they helped the recent college graduates they were designed to benefit, but they simply displaced other workers, producing a limited overall benefit.[48] Another study found that in 2009, nine US federal agencies spent approximately $18 billion to administer 47 employment and training programs. But it found little information on the impact of these initiatives and the degree of overlap between them (or the degree of overlap with state and local initiatives).[49]

[48] Bruno Crépon et al., *Do labor market policies have displacement effects? Evidence from a clustered randomized experiment*, November 2012.

[49] *Multiple employment and training programs: Providing information on co-locating services and consolidating administrative structures could promote efficiencies*, US Government Accountability Office, February 2011.

9%
reduction in public spending on labor market programs

By providing more visibility into the skills that are in demand by employers, online talent platforms have the potential to improve the way public-sector job programs function. They can apply better data, new approaches, and new technologies—as well as reducing the overall need for the government to act as an intermediary between the unemployed and the job market. They can also improve data sharing and coordination between agencies at various levels of government as well as providing a basis for partnerships involving private-sector employers and education providers.

We estimate that the savings could amount to $18 billion annually, or 9 percent of labor program spending, across these five countries. The largest potential impact is in the United States, where we estimate a savings of $11 billion in annual spending (or 13 percent of 2014 expenditures).

Education and training programs

A college education is still the best route to higher earning potential over an individual's lifetime.[50] But while the evidence is clear at the aggregate level, cracks are now appearing in this long-held assumption for some individuals.

Today considerable public and personal resources go into educating people who end up not working or in jobs that do not utilize their education. In the United States, for example, more than one-quarter of individuals holding a four-year bachelor's degree earn less than the median annual wage of individuals with a two-year associate degree. Similarly, one-third of those with associate degrees earn less than the median wage for high school graduates.[51] There may be many reasons for this discrepancy in earnings: some graduates may live in parts of the country with lower wages and lower costs of living; others may have willingly chosen low-paying careers in public service or creative fields. However, it is also likely that many students pursued higher education for the express purpose of preparing for solid careers but simply misjudged which degree programs to pursue or lacked information about employment and earning prospects in their field of study.

$89B
annual tertiary education spending that could be allocated more effectively

Graduates in other countries experience similar problems. In the United Kingdom, the government estimates that almost half of college graduates are in jobs that do not require a college education.[52] In China, unemployment among recent university graduates is around 16 percent, even though the labor market is relatively tight. In some Chinese cities, semi-skilled manufacturing workers can earn more than degree holders who land office jobs.[53]

Labor market outcomes are not the sole purpose of higher education, of course. Universities are not merely factories churning out workers; they enable the pursuit of knowledge for its own sake and can raise the productivity of a person in whatever job he or she takes. There is a danger that an overly narrow focus on science, technology, engineering, and math skills, for example, is debasing the value of a liberal arts education. In fact, a wide variety of disciplines can instill critical thinking skills, writing ability, and the intellectual curiosity that individuals need to be adaptable to changing labor market demands throughout their lives.[54] Despite that important caveat, we believe that current labor market outcomes do indicate the existence of some misallocation.

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50 *Education at a glance 2014: OECD indicators*. See also David H. Autor, "Skills, education, and the rise of earnings inequality among the 'other 99 percent,'" *Science*, volume 344, number 6186, May 2014; Seth Zimmerman, *The returns to college admission for academically marginal students*, May 2013; Mary C. Daly and Leila Bengali, "Is it still worth going to college?" *Federal Reserve Bank of San Francisco Economic Letter*, May 2014; and *Graduates in the UK labour market 2013*, UK Office for National Statistics, November 2013.

51 *Game changers: Five opportunities for US growth and renewal*, McKinsey Global Institute, July 2013.

52 Office of National Statistics.

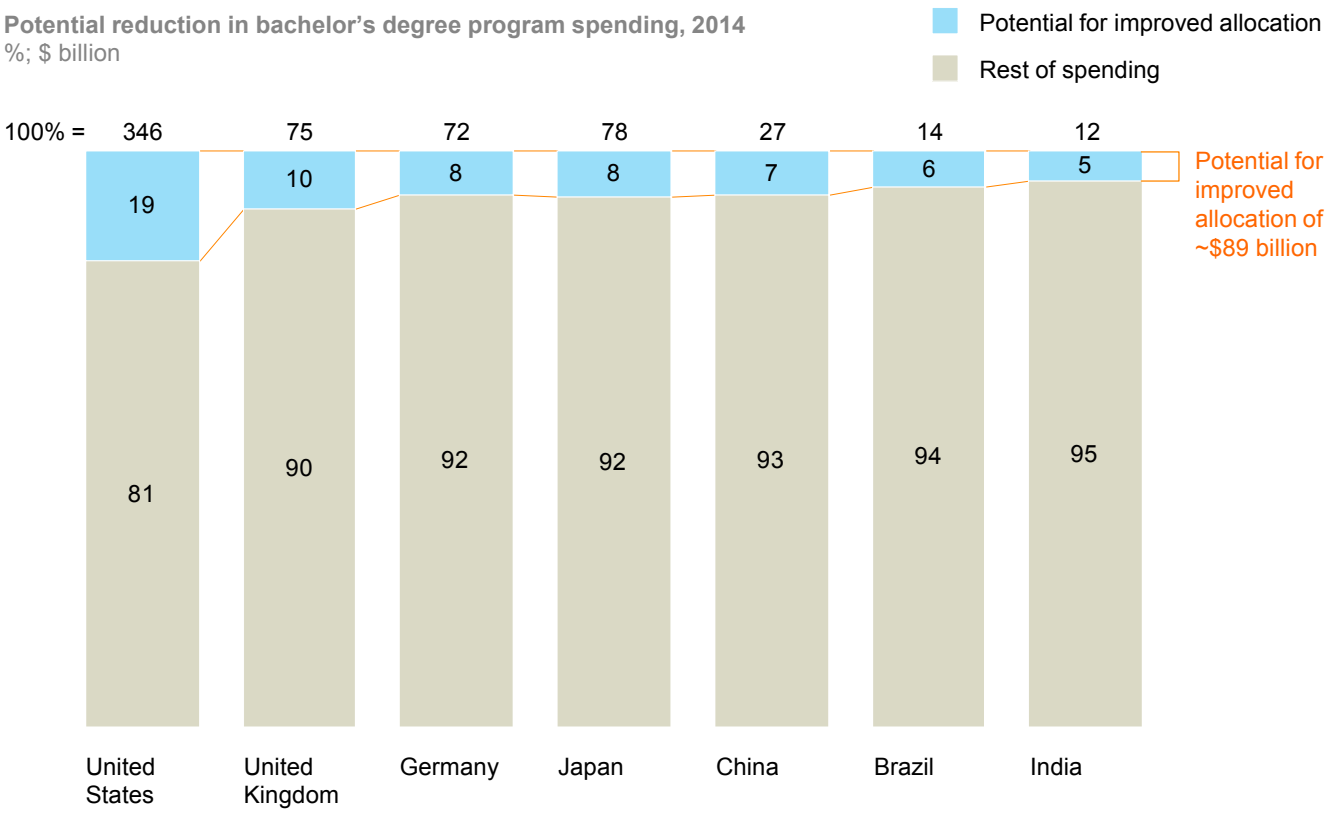
53 For more on this issue, see Yukon Huang and Canyon Bosler, "China's dangerous graduate glut," *BloombergView*, May 13, 2014; and William Kazer and Liyan Qi, "Beijing's latest worry: Colllege grads," China Realtime blog, *Wall Street Journal*, May 27, 2013.

54 For a deeper discussion of this issue, see Fareed Zakaria, *In defense of a liberal education*, W. W. Norton & Company, 2015.

In seven major economies we analyzed, total public and private spending on tertiary education came to $740 billion in 2014, of which $625 billion went toward bachelor's degree programs or their equivalents. Spending for all types of tertiary education ranges from 0.5 percent of GDP in China to 2.5 percent of GDP in the United States. By considering underemployment as well as unemployment among degree holders against annual higher education spending, we arrive at a rough estimate of the scope of the problem, which comes to $89 billion across our seven focus countries. These are highly imperfect measures, but they do convey a sense of the scale of the problem (Exhibit 17).

Exhibit 17

Seven major economies could reallocate up to $89 billion annually in tertiary education spending



SOURCE: OECD; national sources; World Bank; McKinsey Global Institute analysis

In the United States and the United Kingdom, this misallocation takes a particular toll. Students in these countries are incurring an enormous and rapidly rising burden of educational debt—one that stood at $1.3 trillion for the United States and $165 billion in the United Kingdom in 2015.[55] Some of the millions who carry student loan debt occupy low-wage jobs and are hard pressed to make their repayments. Even graduates who land good jobs may find their ability to save for home purchases or otherwise start their economic lives compromised for decades.[56] Some $624 billion and $45 billion of the outstanding student loans in each of countries, respectively, can be attributed to financing bachelor's degrees or equivalent programs. We estimate that people who end up with suboptimal work outcomes incur up to 10 percent of student loans directed to these programs. If these students choose targeted two-year vocational programs instead, their student debt would be lower.

[55] Data from the US Congressional Budget Office and the UK House of Commons Social and General Statistics section.

[56] *Household debt and credit report 2013*, The Federal Reserve Bank of New York.

Online talent platforms could help to avoid at least some of this misallocation and debt burden. These platforms can track trends in the demand for skills, salaries, and the work outcomes associated with specific institutions and degree programs. This can help students make more informed decisions and help educational institutions design programs that offer a better chance of success.

Educators and vocational training providers of all stripes will need to make active use of this data to shape their offerings. They may be held to a new standard of accountability as the outcomes associated with specific institutions and degree programs become more publicly transparent.

Online talent platforms may have broader long-term effects on economic dynamism

In addition to the direct impacts described above, talent platforms may increase innovation, boost productivity, and improve the development of human capital across economies. We do not attempt to quantify these effects, although they would contribute to GDP growth in the longer term. This raises the possibility that the true economic potential of online talent platforms could be much higher than our estimate suggests.

The first of these effects relates to new business formation and innovation. The availability of freelance help has vastly reduced the cost and lowered the barriers to starting a business.[57] With minimal capital, an entrepreneur with an idea can now create a small company while outsourcing accounting, graphic design, marketing, and other specialized functions on contingent platforms such as Upwork and Freelancer.com. Over time, the availability of these freelance services may increase the number of startups and unleash potential entrepreneurs.

Talent platforms can also boost innovation by making it easier for creative minds in the same or related fields to find one another. This offers new possibilities for collaboration, innovation, and idea sharing. While these effects cannot be predicted or orchestrated, it is worth remembering that chance encounters produced some of the greatest technology innovations in recent memory. Online talent platforms provide a new setting in which such encounters can take place. The value of the next big breakthrough is impossible to calculate, but potentially huge.

A second important long-term benefit of online talent platforms may be to improve the skill mix of the economy. Today there are important gaps between the skills that employers demand and those that the workforce offers. As described above, online talent platforms are becoming repositories of vast data sets that can be analyzed to understand these trends, giving policy makers, educational institutions, and companies a far more detailed and real-time view of labor market needs. Students, workers in the early stages of their careers, and those seeking to make a midcareer change can also use this information as they choose educational and training paths. Over time, this should allow the overall mix of skills in the economy to adjust more rapidly and more accurately, boosting overall productivity.

The third important long-term benefit is making companies more productive. Companies are already turning to talent platforms to attract better-performing or more innovative employees and cut the onboarding time needed to bring them to full productivity. This creates opportunities to increase revenues and reduce costs. The companies that quickly and fully embrace these tools have a better chance to become more efficient, innovative,

[57] Andrew Burke, "The entrepreneurship enabling role of freelancers: Theory with evidence from the construction industry," *International Review of Entrepreneurship*, volume 9, number 2, 2011.

and profitable. As they muscle out their competitors for market share, the process of creative destruction raises productivity and living standards across the broader economy.

While online talent platforms could spur all of these positive effects, they also have the potential to exacerbate the economic disparities that have been growing wider in recent decades. They are already enabling people with distinctive skills to command higher wages and more attractive employment offers. But as their use grows among segments of the labor force without credentials, employers may regard those workers as more replaceable, compressing their wages even further. In addition, these platforms enable the most innovative workers to find each other and aggregate in specific companies, further increasing their productivity and compensation, while less skilled workers pool together in less competitive companies.[58] Talent platforms also transform labor markets from small local pools into large national (or even global) markets—and larger markets will bid up the salaries for the most highly sought-after talent.

These effects will not be easy to combat, particularly in the short term. Over the longer term, however, talent platforms could dramatically improve access to information about educational outcomes and the skills that are in demand. If they are successful, the next generation could take advantage of these insights to make better-informed decisions about what kind of training to seek out. This could expand their options and leave fewer students saddled with unsustainable debt.

•••

Online talent platforms have the potential to become faster and more effective clearinghouses that can inject new momentum and transparency into job markets. By 2025, these platforms could boost global GDP by $2.7 trillion annually. But the impact would be far more tangible and personal to the 540 million individuals who could connect with better opportunities and more rewarding work through online talent platforms. Realizing the full potential will hinge on the rate of adoption by individuals and employers alike. Chapter 4 will examine how these platforms are changing the workplace and how companies can use them to secure a competitive advantage.

[58] Michael Kramer, "The O-ring theory of economic development," *The Quarterly Journal of Economics*, volume 108, number 3, August 1993.

4. TALENT MANAGEMENT FOR COMPANIES

In a more digitally connected and knowledge-based economy, companies increasingly create value from ideas, innovation, research, and expertise. Having the most skilled and creative talent can make or break a business. But companies are struggling to land the right candidates, draw the best performance out of their existing workforces, and develop the skills and leadership they will need to meet their organizational goals over the long term. The challenges are proliferating with the impending retirement of the baby boomers, the arrival of highly connected and highly mobile millennials in the workforce, and the advent of new "virtual office" models.[59]

For decades, many business leaders thought of their human resources departments in terms of compliance, record keeping, and support. In the absence of a solid business case for investing in talent, they put limited resources into HR technology capabilities, even as functions such as sales and marketing, operations, and supply chain management were heavily digitized. But today a growing number of organizations are turning to online platforms as they realize that focusing on human capital management can produce significant returns on investment.

275BPS
average improvement in company profit margins

Digital platforms are now available to improve the full spectrum of talent management, including recruiting, screening, onboarding, compensation, engagement, retention, and leadership development (Exhibit 18). An integrated human capital management system can use hard data to find the best candidates and track organizational dynamics, providing greater visibility into what works and what does not in each of these areas. It can take some of the same basic matching functionalities of public talent platforms and apply them internally, using detailed information about employees to match them with specific assignments, teams, and development opportunities. Companies that move quickly to integrate these technologies and use them in a strategic way can improve their productivity, agility, and employee engagement, securing a significant and lasting advantage.

The early adopters are already discovering that better-informed decisions—about whom to hire, how much to pay, how to combine the most effective teams, how to retain employees, and how to help employees develop over time—can lead to better business results. By modeling sample companies in a variety of industries, we estimate that online talent platforms can increase a company's output by up to 9 percent and lower costs related to talent and human resources by up to 7 percent.[60]

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[59] *The state of human capital 2012: False summit*, McKinsey & Company and The Conference Board, October 1, 2012.

[60] "Output" in this context could translate into increased revenue or into other types of productivity gains (such as freed-up time for new client development, to give just one example).

Exhibit 18

Online talent platforms create value for companies by improving recruiting, talent management, and long-term planning

Impact category	Mechanism	Example platforms, 2015	
Recruiting and talent acquisition	Find better candidates	▪ LinkedIn ▪ Monster	▪ SmashFly ▪ ZipRecruiter
	Discover hard-to-find, niche talent	▪ Dice ▪ Entelo ▪ Hired	▪ LinkedIn ▪ Niche Talent
	Access non-traditional workers or channels	▪ LinkedIn ▪ TalentBin	▪ Tomigo
	More efficiently filter to select interviewees	▪ Chequed ▪ ClearFit ▪ Hire IQ	▪ TalentWise ▪ TrueAbility
	Use candidate data for better assessment	▪ Codility ▪ JobFig	▪ Pomello
	Tailor approach to each candidate	▪ Future providers to emerge	
Managing individual and group talent	Tailor onboarding	▪ Bloomfire ▪ Simpler	▪ Yammer
	Form more effective teams and groups	▪ Better Workplace	▪ Tower Metrix
	Find internal expertise and knowledge	▪ Batterii	▪ Quandora
	Identify skill gaps, training opportunities	▪ Mindflash	▪ Zapoint
Planning for the future	Predict and optimize attrition	▪ Activ8 Intelligence ▪ GoodData	▪ People Insight ▪ Visier
	Plan for succession paths	▪ DataClear	▪ PeopleFluent
	Anticipate and plan for future talent needs	▪ Aruspex	▪ Orca Eyes

Note: The landscape of providers and solutions is evolving rapidly. These examples reflect a snapshot as of May 2015.

SOURCE: McKinsey Global Institute analysis

Talent is a critical issue for business leaders

Top talent matters and drives results. Recent research has shown that outcomes across a variety of industries can be attributed to a small group of star performers.[61] Google has calculated that the business impact of its top performers can be up to 300 times higher than that of the average employee.[62]

But finding the right talent is difficult—and is becoming more so in an age of rapidly intensifying global competition. More than a third of global employers surveyed by Manpower reported that they could not find the talent they needed in 2014. This applied to high-skilled and low-skilled positions alike, and more than half of affected firms said that

[61] Ernest O'Boyle Jr. and Herman Aguinis, "The best and the rest: Revisiting the norm of normality of individual performance," *Personnel Psychology*, volume 65, issue 1, 2012.

[62] Chris DeRose, "How Google uses data to build a better worker," *The Atlantic*, October 7, 2013.

this had a tangible impact on their ability to meet customer needs.[63] Previous MGI research has projected a shortage of 38 million to 40 million workers with college or postgraduate degrees by 2020.[64]

Top performers usually know their value and are "footloose" as a result. The benefits that online platforms can deliver to individuals (described in greater detail in Chapter 2) include greater agency, mobility, and self-determination. Job switching will become easier, and top performers are increasingly being approached with offers without actively job hunting. In the case of the highly skilled, this dynamic plays out in the workers' favor, while companies face higher turnover. One survey found that a quarter of high performers believed they would be working for a different company within a year.[65]

Once employees are hired, companies must focus on retention. Although turnover is good for individual workers and represents a positive dynamic in the broader economy, high attrition rates are expensive for companies. Workplace platforms offer new ways to hold those costs down by increasing employee engagement and flagging early warning signs so that managers can intervene before a high performer leaves due to low morale or boredom (Exhibit 19).

Exhibit 19

Lack of advancement opportunities, unsatisfactory leadership, and lack of recognition are the main drivers behind the decision to leave an employer

Survey question: "Which of the following contributed to your decision to leave your previous employer?"
% of respondents (n = 17,718)

SOURCE: LinkedIn Job Seeker survey, 2014; McKinsey Global Institute analysis

Creating an effective environment where talented people will strive for excellence cuts to the heart of corporate performance. McKinsey research has found that companies that ranked in the top quartile for organizational health (including leadership, talent, knowledge, culture, motivation, and learning, among other factors) delivered total returns to shareholders that were three times higher than those of unhealthy companies.[66] New workplace platforms take a more holistic approach to understanding what keeps employees motivated.

[63] *The talent shortage continues: How the ever-changing role of HR can bridge the gap*, Manpower Group, 2014.

[64] *The world at work: Jobs, pay, and skills for 3.5 billion people*, McKinsey Global Institute, June 2012.

[65] Jean Martin and Conrad Schmidt, "How to keep your top talent," *Harvard Business Review*, May 2010.

[66] Aaron De Smet, Bill Schaninger, and Matthew Smith, "The hidden value of organizational health—and how to capture it," *McKinsey Quarterly*, April 2014. See also Scott Keller and Colin Price, *Beyond performance: How great organizations build ultimate competitive advantage*, John Wiley & Sons, 2011.

Online talent platforms create value for companies by improving their human capital management

People decisions matter—not only for executives but also for entry-level workers, administrative staff, sales teams, and customer service representatives. Online talent platforms can help to address every stage of an employee's work life, from recruiting and onboarding to training and team formation. These new workplace platforms are not just technology tools for human resources managers but platforms on which every employee is meant to actively engage. This underscores the importance of using them in thoughtful and strategic ways. The frequency of interaction can provide new transparency into what motivates an organization's workforce and drives performance, helping managers make people decisions that are grounded in hard data rather than gut instinct.[67]

Online talent platforms can help companies take a more holistic approach to finding the right people, maximizing employee engagement and productivity, and planning strategically to meet future organizational needs for skills and leadership.

Finding the right people

To date, the clearest value and impact of online talent platforms has been in harnessing the power of search technology for hiring. The platforms can accomplish this through a variety of means, including traditional postings on job sites, passive recruiting, social referrals, and more sophisticated assessments. Across all of these functions, platforms increase the odds of matching the right person to the right role.

38%
top-performing hires sourced from online talent platforms

Companies can draw a much wider selection of applicants by posting openings on major job sites and professional social networks. One study of 4,000 companies in 31 countries found that 38 percent of "quality hires" are sourced from social professional networks.[68]

But companies are no longer limited to posting a job and waiting to see who responds. A growing number of organizations are hiring "passive" candidates. They can seek out the talent they want, even if those individuals are not actively job hunting, and then approach any number of prospective candidates in an immediate but personalized way. This approach can be much more effective for discovering talent in fields where previous work is digitized and accessible online. GitHub and HackerRank, for example, search online repositories of open-source code to identify top programmers, enabling employers to reach out to the best talent.

Social platforms such as Zao and Jobvite invite employees to tap their existing professional networks for referrals. Jobvite's customer data shows that employee referrals have the highest applicant conversion rate (they make up 7 percent of applicants but 40 percent of hires).[69] Zappos, for example, announced that it was doing away with traditional job postings altogether and creating its own social network where prospective candidates can interact with current employees.

Online talent platforms also help companies reduce the time and cost of applicant screening—and use data to make their assessments more effective. Companies no longer have to sift through stacks of resumes. Interactive platforms make it easier for them to source talent from a much wider sea of candidates, then filter the results by specific skills and attributes in a faster and more detailed way. Speeding the process of making a match is an important aspect of the technology, since unfilled positions reduce output and recruiting costs can be considerable whether or not companies turn to outside agencies. Screening tools that use sophisticated data algorithms can also save on interviewing time and reduce the human biases in hiring and screening if employers use them with care.

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67 *Taking measure of talent*, Harvard Business Review Analytic Services white paper, 2012.
68 LinkedIn 2015 global recruiting trends report.
69 Jobvite corporate website.

Digital tools can improve the odds of choosing the right candidate. Even if candidates have the right skills and experience on paper, employers will want to avoid hiring them if they are not a good fit for the company's culture. Platforms that incorporate big data analytics can spot trends and patterns that indicate whether candidates will mesh with the workplace, whether they will perform well in the available role, and whether they will be likely to stay. Xerox reduced new hire attrition and improved the productivity of call center agents by 3 to 4 percent by instituting a 30-minute online screening test for applicants and comparing the results to a profile of top performers.[70] A recent study by Evolv measuring half a million performance data points for nearly 20,000 employees across the United States found that there was no statistical difference in performance of hires who had been among the long-term unemployed versus other employees. This kind of data-driven insight can give companies broader access to larger pools of productive talent, reduce discrimination, and even make a dent in unemployment.[71] Goldman Sachs has begun to use machine learning algorithms to screen resumes and has reported better outcomes and reduced bias as compared to its traditional process.[72]

<20%
of HR professionals feel they have the capabilities needed to adopt social recruiting

A recent US survey found that more than 90 percent of recruiting and human resources professionals use or expect to adopt recruiting strategies that mine social media networks for potential candidates, but fewer than 20 percent felt they had already developed the full capabilities needed to do so successfully.[73] Companies are only beginning to adopt these new tools, and they have yet to capture the full potential in terms of bottom-line results and competitive advantage. But since they have a clear incentive to adopt digital platforms for recruiting and hiring, the impact of these new technologies is poised to grow tremendously in the decade ahead.

Maximizing employee engagement and productivity

When employees feel energized by their work, valued by their organization, and happy in their environment, they are more productive. Digital platforms can help to create those conditions by allowing even the largest organizations to move away from a one-size-fits-all approach to human resources and talent management. Tasks and incentives can be matched to the employee to create greater impact and productivity.

Beyond the hiring process, talent platforms can create a more comprehensive and personalized onboarding process that accounts for what companies know about new hires and their skills when they arrive. Appical, a Dutch startup that uses digital games to transform the onboarding process, is among the companies creating tools that streamline orientation and training for new employees and speed time to productivity.

In a fast-changing business environment where technology is continuously evolving, companies in knowledge-intensive industries need mechanisms that support not just one-time training but ongoing self-directed virtual learning. Digital training platforms such as Knewton enable companies to cut back on training sessions led in person while creating learning programs that are more comprehensive, personalized, and effective.

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70 Jessica Leber, "The machine-readable workforce," *MIT Technology Review*, May 27, 2013.

71 Michael Housman, *The truth about the long-term unemployed*, Evolv Workforce Insights, 2014.

72 From proceedings of the Wharton People Analytics Conference, April 2015. Machine learning algorithms are algorithms that make use of data to "learn" how to classify and codify outcomes or make decisions based on indications of success from human users. Nathan R. Kuncel, Deniz S. Ones, and David M. Klieger, "In Hiring, Algorithms Beat Instinct," *Harvard Business Review*, May 2014

73 Jobvite 2014 social media recruiting survey of 1,855 recruiting and human resources professionals across industries.

Platforms can be particularly valuable for forming more effective internal teams. Platforms can sort information on employees' skills, their performance on previous assignments, their working style, their availability, and their locations. One study in the automotive industry found that teams with a good balance of skills, strengths, and diversity were up to 14 percent more productive than other teams.[74] Online platforms can also streamline the way employees find colleagues with specific expertise. This is a particularly important capability for large multinationals with operations spread across geographies.

Predictive analytics can also highlight when employees are likely to depart and flag the need for interventions (such as mentoring, job reassignment, or advancement) to improve employee satisfaction. These early warnings are valuable, because turnover is costly. Bank of America was able to improve productivity using Sociometric Badges and Sociometric Analytics to gauge team cohesion and engagement in its call centers, and its turnover also dropped sharply as a result.[75]

Planning strategically to meet future needs for skills and leadership

22%
of executives view their current talent pipeline as promising

Many companies create long-term strategic road maps, but few integrate human capital into the planning process. Online talent platforms can make that possible by mapping a company's current workforce competencies against those goals so that desired business capabilities, growth aspirations, and strategies are actually supported with the appropriate talent and skill set. This data could make it possible for companies to understand which types of skills reside in which geographies and what kind of scarcity they may face in the future. These insights can help to inform complex decisions such as where to open a new manufacturing facility, whether to add a business line, or whether an acquisition makes sense.

Platforms can also help companies make succession plans and address employee mobility and growth over the long term. A recent survey of executives found that leadership development was their number-one concern.[76] Another study that included interviews with more than 800 executives found that only 22 percent view their talent pipeline as promising.[77] To deal with this type of concern, 3M has implemented a wide-ranging human capital planning process to plan for succession management in light of its aging workforce. After creating an integrated technology platform for workforce planning, the company increased internal mobility for employees and boosted productivity by 4 percent.[78]

[74] Derek C. Jones and Takao Kato, *The impact of teams on output, quality, and downtime: An empirical analysis using individual panel data*, July 2007.

[75] Sociometric Solutions corporate website.

[76] *The state of human capital 2012: False summit*, McKinsey & Company and The Conference Board, October 1, 2012.

[77] Claudio Fernandez-Araoz, "Is your company ready for the looming talent drought?" *Harvard Business Review*, July 2014.

[78] World Economic Forum, Repository of talent mobility good practices, accessed at www.weforum.org/best-practices/talent-mobility/human-capital-planning.

Box 3. Confronting the potential downside of workplace platforms

At their core, platforms are simply tools—and like any tool, they have to be wielded in the right way to produce outcomes that benefit both companies and employees. These systems do open the door to both unintended consequences and intentional abuses that have to be carefully considered and dealt with.

Platforms that use digital algorithms in the hiring process, for instance, can help companies make decisions that are based more fully on merit than on subconscious biases or the "old boys' network." But these tools could open the door to both intentional and unintentional discrimination. Employers could screen out individuals based on, for example, political postings, participation in parenting discussions, or visits to support groups for specific health conditions. One call center used data algorithms to identify the attributes of workers who stayed in the job the longest to reduce attrition costs. Over time the company found that the algorithm was screening out applicants based on length of commute—but because it was eliminating certain zip codes, the result was inadvertent discrimination (which the company corrected once the pattern became apparent). Companies will have to make a conscious effort to use these new tools to enhance diversity and fairness in hiring rather than closing off equal opportunity.

Our research focuses on talent platforms that combine information about worker attributes with work opportunities. This definition excludes a number of platforms that are pure enterprise systems designed to boost operational efficiency. Although they fall outside the scope of our research, automated just-in-time scheduling systems that adjust to demand have set off a wave of controversy and questions over what uses are legal.[1] Many companies, particularly in the retail and food industries, have used software tools to manage their workforce deployment so tightly that employees are given little notice or inadequate downtime before shifts. Unpredictable and erratic schedules can make logistics like child care impossible for employees, and when shifts are cut short, they lose pay. Hourly employees often find their incomes and lives squeezed.

Dynamic scheduling does not have to be used in this way. Companies that want to provide their employees with greater flexibility can do so, using platforms that not only take into account the worker's suitability for a given assignment but combine that information with his or her preferred tasks and times to work. Zappos has launched an initiative to reward customer service agents with "surge pay" during peak call volume times, ensuring that flexibility matches with customer demand. On-demand service platforms adjust pricing and deployment to meet instantaneous spikes in demand, and they have created flexible work opportunities that are entirely self-directed. Approaching worker schedules with empathy can create a win-win situation that pays off with greater retention, improved morale, and better customer service and performance.

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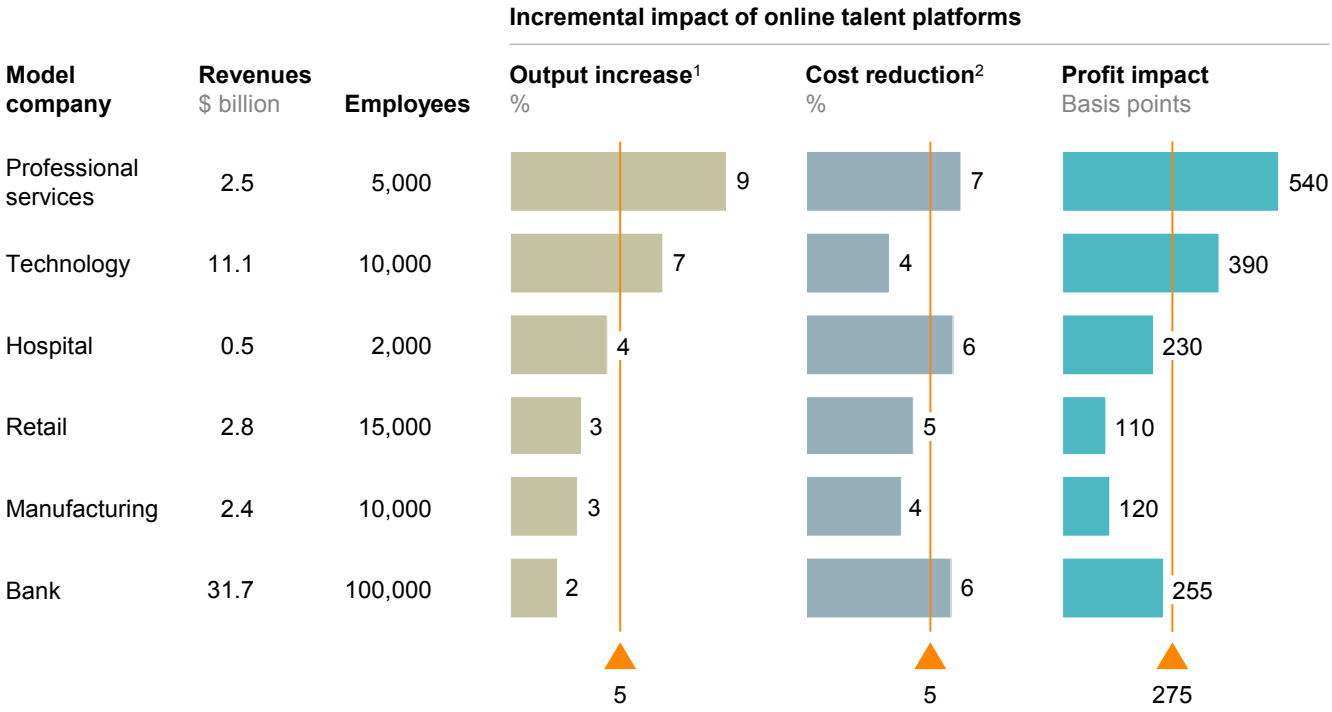
[1] Hiroko Tabuchi, "Retailers scrutinized for schedules and staffing," *New York Times*, April 13, 2015.

Online talent platforms can have real impact on the bottom line for a variety of organizations

By summing up the various effects described above and applying the results to a variety of sample organizations, we estimate that online talent platforms can increase a company's output by up to 9 percent and lower costs related to talent and human resources by up to 7 percent (including savings on recruiting, interviewers' time, training, and the various efficiencies that can be gained by hiring more productive workers; Exhibit 20).[79] Companies that use workplace platforms to increase employee engagement and satisfaction can also reduce attrition. This can represent a major savings for firms with high turnover today, and it will be a key point of competition in the future, since workers will become increasingly mobile in a more digital labor market.

Exhibit 20

Online talent platforms can increase output by up to 9 percent and reduce costs by up to 7 percent



1 Includes productivity gains in front- and middle-office workers, which can translate into revenue or other increased output opportunities.
2 Includes productivity effect in middle- and back-office workers, and savings in recruiting, interviewing time, training, onboarding, and attrition costs.
Note: Numbers may not sum due to rounding.

SOURCE: BLS; company annual reports; McKinsey Global Institute analysis

The degree to which a specific company can benefit from adopting online talent platforms depends on the mix of talent and skill needed in its workforce and the company's operating model.

Companies with a large share of highly skilled workers have significant opportunities to improve recruiting and personalize various aspects of talent management, including training, incentives, and career paths. Highly skilled workers typically have larger variations in performance and impact on output than low-skill workers—and companies make a greater investment in them. It is therefore vital for companies to get better-quality hires in the door and create the type of positive engagement that will retain top performers.

[79] These results are not based on a dynamic model; they capture the potential gains that early adopters can make today. As adoption reaches critical mass across a given industry, the competitive advantage will become smaller—but the potential costs of failing to adopt talent platforms may become greater.

Conversely, online talent platforms can also make an enormous difference to companies with large low-skilled workforces, high attrition rates, or both. The biggest impacts for these companies come from better screening and assessment of job candidates. Platforms using big data analytics can make better predictions about candidates' ability to perform tasks as well as the likelihood of their timeliness, reliability, and commitment. These forms of assessment can make an enormous difference in reducing the huge costs of turnover and new employee training. By finding the right people, they can also improve the quality of customer service, which is a critical aspect of generating revenue and creating brand loyalty.

In terms of operating models, organizations that frequently form project teams have a great deal to gain from by adopting tools that allow them to match employees based on their specific skills, strengths, past projects, social networks, fit with co-workers, and other criteria. This type of internal matching capability is also useful for any large and complex organization that is spread over multiple geographies, business lines, or divisions. Multinationals have huge layers of middle managers, senior executives, and skilled professionals, and they can benefit from a centralized system that can match these candidates to new assignments, fill gaps in the talent pipeline, and enable succession planning.

We analyzed the potential impact on six different types of organizations: a tech firm, a professional services firm, a bank, a manufacturer, a retailer, and a hospital (Exhibit 21). See Box 4, "A note on methodology."

Box 4. A note on methodology

To estimate the potential of online talent platforms for companies, we selected six representative types of firms with diverse workforce mixes, operating models, and financial characteristics.

We then constructed a "model company" to correspond with these six firm types using publicly available financial statements and annual reports, occupational and salary data from the US Bureau of Labor Statistics, and expert interviews. We began by determining the mix of employees and categorizing workers by skill level, average salary, expected attrition rates, and common costs such as training.

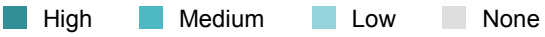
For each category of workers and roles within a company, we noted any additional operating model characteristics such as rapid team formation, high attrition rates, or knowledge sharing. We also categorized roles as front office, back office, or middle office, based on whether a particular role or worker type directly impacts sales and company output, plays a supporting role, or does both.

To assess the effect of each mechanism associated with online talent platforms, we used case examples, the average industry performance versus "best-in-class" performance (with and without digital platforms), and input from McKinsey and external experts in the relevant industries. We considered output, labor costs, training cost, recruiting costs, and retention as outcome metrics. We then summed each of those impacts across each category of workers in a given model company.

These estimates assume a static external environment and the ability of the companies in question to use online talent platforms to attract higher-quality talent. In a competitive environment in which multiple companies are vying for the same talent and have developed equivalent skills at using online talent platforms, the effect would be smaller. See the separate online technical appendix for further detail.

Exhibit 21

The potential impact is driven by different mechanisms in different types of companies



	Impact mechanism	Total profit increase Basis points	Profes-sional services	High tech	Hospital	Retail	Manu-facturing	Bank
Recruit-ing	Find better candidates	80						
	Discover hard-to-find, niche talent	10						
	More effectively filter to select interviewees	5						
	Use candidate data for better assessment	35						
	Tailor cultivation approach to each offeree	5						
Managing talent	Tailor onboarding to hire skills, network	15						
	Personalize training and learning opportunities	20						
	Form more effective teams and groups	10						
	Find internal expertise and knowledge	45						
Planning for the future	Predict and optimize attrition	40						
	Plan for succession paths	10						
	Anticipate and plan for future talent needs	1						
	Total profit impact Basis points	**275**	**540**	**390**	**230**	**110**	**120**	**255**

SOURCE: McKinsey Global Institute analysis

A professional services firm

Advisory, consulting, and law firms employ highly educated professionals who work directly for clients in completing tasks. The business model involves finding expertise from across a widely dispersed organization and repeatedly forming internal project teams for short periods.

Because of these unique operating characteristics, these firms are primed to capture some of the largest gains from adopting online talent platforms. We estimate that platforms can increase their output by 9 percent and reduce talent and HR costs by 7 percent. Because professional services firms have so few back-office employees and most professionals interact directly with clients, most of the productivity gains may be reflected in increased output.

9%
potential increase in output for early adopters in professional services

The biggest impact comes from recruiting better talent, forming more effective teams, and matching knowledge and expertise internally. In global firms, where expertise is dispersed across many offices and client work spans many industries and functions, tracking down the right person internally can consume significant time, if the right person can be found at all. Digital platforms that catalog individual expertise at a detailed level and enable faster identification can have substantial productivity implications. Team formation can take knowledge, skills, interpersonal traits, timing, and geography into account, and the potential to build smarter teams will have a huge and direct impact on the results they can produce. The longer-term indirect effects can include greater innovation, stronger client service that is able to meet changing market needs, and time that is freed up to redeploy and cultivate new business. Improved team and professional development experiences for employees can reduce burnout and turnover.

Recruiting at these firms can be extremely expensive on a per-employee basis. Online talent platforms can make this process more cost effective while creating more customized recruiting programs and offers, filtering applicants more quickly, and using candidate data for better assessment.

A high-tech firm

Tech firms depend on highly skilled engineers, product managers, and sales representatives who are difficult to find and hire in today's competitive market. The best are routinely approached with new offers or opportunities. The recruiting process for assessing and cultivating these workers often consumes large amounts of time from other engineers and managers. Unfilled openings can be extremely costly in terms of reduced innovation, longer product release times, and reduced capacity to stay competitive by implementing new product features. Due to the unique and measurable nature of some tasks carried out at tech firms (such as computer programming), online talent platforms are also particularly effective at identifying candidates with natural demonstrated skill passively—even if they lack formal credentials. Sourcing this highly sought-after talent from a broader pool of candidates and narrowing the pipeline of interviewees early can free up significant time for managers while also boosting productivity when the individuals are on the job. Online talent platforms can help companies cast a wider and more effective net to attract the most qualified or niche talent in a faster and more effective way—and after they are brought on board, platforms can be used to retain these highly valued employees and keep them engaged. Tech employees also benefit from the ability to find internal expertise and form more effective teams.

We estimate that tech firms could capture a 7 percent increase in output, primarily from hiring more productive engineering and sales force talent; they could also reduce talent and HR costs by 4 percent. Beyond the impact for individual companies, the ability to match and motivate the right talent in the tech industry has the unique potential to spark the type of innovation that can have wider economic and social benefits.

Google has attracted wide notice for pioneering a new data-driven approach to talent management. Its "People Analytics" department sets out to solve both tactical and aspirational questions about the way the company operates, such as how team dynamics translate into results. The group aims to use rigorous testing and statistical analysis to inform (but not replace) human judgment regarding people decisions. It has, for example, created a consistent set of interview questions with detailed criteria for evaluating how a candidate responds.[80]

[80] See Laszlo Bock, *Work rules! Insights from inside Google that will transform how you live and lead*, Twelve, 2015; and Christopher Mims, "At Google, the science of working better," *The Wall Street Journal*, March 29, 2015.

A retail bank

Consumer-facing retail banking branches have a mix of employee types, with relatively high proportions of low- and medium-skilled generalists working in office roles as well as back-office employees carrying out tasks ranging from loan processing to customer service. A number of soft skills and difficult-to-assess qualities are important for tellers and loan officers, whose roles require heavy interaction with customers. Tellers and customer service representatives in particular have extremely high attrition rates, so a great deal of expense goes into replacing them and training new hires.

6%
potential reduction in costs related to talent and HR for retail banks

We calculate that online talent platforms could increase output for our sample retail bank by up to 2 percent and reduce costs related to talent and HR by approximately 6 percent. The gain in output comes from improving the productivity of front- and middle-office workers such as tellers, sales and product representatives, and managers. Their ability to build relationships and interact with high-end retail customers and the owners of small and medium-sized businesses directly impacts revenue. By identifying candidates with the right people skills and sales ability, a bank can keep customers happier and improve its ability to cross-sell and upsell financial products and services. The cost savings to banks comes primarily through reduced teller attrition and improved back-office worker productivity (which can reduce errors and speed processing time). Talent platforms can help banks capture this potential by matching people with the right personality and skills in these roles and then delivering personalized onboarding, incentives, and training to keep them engaged.

Wells Fargo, for example, created a model that could predict the most qualified candidates for teller and personal banker positions based on their background, career motivation, performance, and life/work skills. The bank started by administering the assessment to 1,000 employees already in those positions (with a full range of performance ratings) to determine the most important factors for success and retention. When job seekers apply for customer-facing positions, Wells Fargo now administers the test online and then automatically schedules applicants who do well for interviews. By the end of the first year, its teller retention rose by 15 percent, and personal banker retention went up by 12 percent.[81]

A midsize manufacturer

Manufacturers rely primarily on a large number of medium- and low-skilled employees, with a layer of higher-skilled engineers and designers guiding product innovation. In advanced economies, the new world of manufacturing demands workers who can be more flexible, exercise judgment, and operate complex computerized machinery. Hiring has been challenging, however. Interest in manufacturing has been waning among younger workers, and applications have declined.

Online talent platforms have the potential to increase a midsize manufacturer's output by 3 percent and reduce talent and HR costs by 4 percent. The primary driver of both improvements is higher worker productivity, which comes from being able to find and match candidates with specific skills and improve screening. As the manufacturing workforce ages, analytics can identify the risks associated with losing specific skills as employees retire so that managers can plan ahead to fill these gaps. Better forecasting and signaling mechanisms can help replenish the talent pipeline over the longer term; many students are not considering manufacturing careers today, but they could discover solid career paths that they might otherwise overlook. Beyond the bottom line, more efficient manufacturers are critical to boosting overall economic output and reducing costs of end goods to consumers.

[81] Katie Kuehner-Hebert, "Predictive analytics for hiring," *BAI Banking Strategies*, September 6, 2013.

A hospital

Hospitals are complex environments in which many employees have specialized skills, and nurses, who typically represent up to 40 percent of a hospital staff, are on the front lines of patient care. New nurses require a lengthy onboarding period and substantial ongoing training, and the stakes are high. They must be continuously matched to departments and to patient cases based on their training in specialized fields, doctor preferences, availability, and myriad technical requirements. "Float pools," made up of nurses not assigned to a particular group, are common within large hospital systems. Attrition varies dramatically by geography and is lower at unionized hospitals, but can reach as high as 30 percent among lower-skilled nurses.

25%
of the cost savings for hospitals is from customized training

We estimate that online platforms can increase our sample hospital's output by 4 percent.[82] This effect is primarily due to more efficient patient response times by more productive nurses. A hospital could also reduce talent and HR costs by 6 percent by reducing attrition and making its workforce (including administrative and back-office workers) more productive. About a quarter of the cost savings associated with recruiting and training employees comes from customized learning opportunities; platforms could help to standardize mandatory ongoing training (which can vary widely today) and ensure that workers receive the right content based on their background, expertise, and responsibilities.

The potential is greater for large hospital systems with more complex and dispersed facilities than smaller independent hospitals have. Platforms can provide more sophisticated matching solutions to better deploy the float pool by taking into account the very specific skills of each available nurse. They can also make better use of per diem physicians looking to pick up extra hours or maintain their skills. Real-time communication and collaboration tools could be valuable for immediately accessing organization expertise. Hospital systems that are building trauma centers, new service delivery lines, or specialized outpatient centers can turn to platforms for easier and more targeted talent recruitment.

The ability of talent platforms to codify skills, screen applicants carefully, and streamline operations can actually improve patient care and save lives when applied to a hospital setting (as well as potentially helping to hold down health-care costs for the economy as a whole). Platforms could reduce the likelihood of error or critical staff shortages. In instances where extremely specialized knowledge is needed to treat complex cases, or combinations of expertise are required to treat patients, these platforms could match physicians to provide more holistic and better coordinated care.

A retail chain

Retailers that operate brick-and-mortar stores with national footprints typically hire great numbers of workers—simply because they often have high turnover. Attrition rates frequently run as high as 75 percent. The majority of retail jobs do not require higher education, but they do require excellent people skills and other traits such as reliability, punctuality, and attention to detail. Conditions can change rapidly throughout the year; during the busy holiday season, for example, many companies increase their workforces by 50 to 60 percent for several weeks. This requires the ability to hire, screen, and train rapidly, and to do so repeatedly.

[82] In the case of a hospital, "output" could be thought to mean the general capacity of a hospital to handle patients at an equivalent or higher quality of care than is typically provided.

We estimate that online talent platforms can increase our sample retail store's output by 3 percent and reduce talent and HR costs by 5 percent. Talent platforms have the potential to revolutionize hiring practices, customer service, and back-office efficiency by selecting the right people for the job. Predictive hiring can help to address high attrition, which is one of the highest and most debilitating labor costs for retailers. Talent platforms can also make back-office support functions more efficient and contribute to creating more cohesive teams through better matching.

Attrition rates can run as high as **75%** for retailers

Stronger professional development programs that identify top performers and help them become managers would improve retention and morale. Best-in-class retail organizations are currently able to source 80 to 90 percent of their managers internally instead of hiring from the outside, significantly reducing costs, increasing morale, and motivating other workers with a defined career path and prospects for advancement. Talent platforms can help improve this internal talent funnel by helping companies to identify workers for advancement and providing them with tailored training.

In addition to direct improvements to the bottom line, retailers can enhance the value of their brand and win customer loyalty through improved people operations. Front-line retail workers shape the customer experience, which suffers when morale is poor and stores are understaffed. Best Buy's use of analytics, for example, has determined that the value of a 0.1 percent increase in employee engagement at a particular store is $100,000 in that store's annual operating income.[83] If retailers as a group can create more supportive and engaging environments for workers, the gains will be particularly important given that the sector employs an enormous number of workers in economies around the world.

•••

Talent is not only a company's biggest asset but one of its biggest investments as well. The early adopters of online talent platforms stand to gain tremendous advantages relative to their competitors. These companies will be the first to find and acquire the hires that are truly the best fit for a given role. They will also be well positioned to boost efficiency, innovation, and customer service while holding down the costs of attrition and training. These goals can be achieved in a way that improves operations while simultaneously creating a better workplace experience for employees. Some of these effects will result in shifts of value from one company to another, but in other cases they will lead to net productivity gains for the economy.

[83] Thomas H. Davenport, Jeanne Harris, and Jeremy Shapiro, "Competing on talent analytics," *Harvard Business Review*, October 2010.

5. CAPTURING THE OPPORTUNITY

Online platforms are already fundamentally altering the way individuals go about searching for work and the way employers approach hiring and talent development. Professionals have made up the majority of early adopters and have been the biggest beneficiaries to date. But these platforms are beginning to draw in a broader range of workers, from students to retirees; they are also rapidly spreading to new industries and geographies. This report has shown that they could unlock real value over the next decade.

Some of that potential value will emerge organically as networks grow larger, data sets become more diverse and readily available, and technologies continue to mature. Individuals will become more proficient and comfortable with navigating a more digital job search and managing their personal profiles. Companies will have to develop new capabilities in analytics and adapt new operating processes to find and recruit talent. At a broader level, economies could gain new momentum as online talent platforms make hiring more efficient, allow labor markets to clear faster, and make organizations more productive. Over the longer terms, talent platforms can track data in a way that helps the workforce develop skills that better match the needs of employers. It is also important to note that these technologies are still evolving rapidly, and adoption is just beginning to take hold. Considering how past technologies have evolved, we acknowledge that online talent platforms may well gain scope, capabilities, and potential that cannot be predicted today.

Moving closer to this world will require actions at many levels. Policy makers will need to expand access to the Internet, rethink labor market regulations regarding contingent workers and how a range of benefits are provided, and consider broader questions of data ownership and online privacy. The public and private sectors will need to cooperate to ensure that the data collected within online talent platforms can be harnessed to gain better insights into the skills companies are seeking, how graduates of different educational and training institutions fare, and what career pathways can lead to success. Companies will need to adopt systems that can integrate people data into strategic planning—and prepare for a whole new chapter in the war for talent. Individuals will need to make use of the insights available on talent platforms, become more adaptable, and take ownership of their careers and futures.

Policy makers must address digital infrastructure and regulatory issues

Policy makers have significant incentives to enable the growth of online talent platforms, given their potential to increase GDP, raise employment, and avoid misallocated spending on unemployment programs and education. Beyond the fiscal impact, online talent platforms can create new avenues for spurring innovation and increasing economic dynamism.

Bridging the gaps in digital infrastructure

Much has been written about the digital divide. Given current trends in the expansion of the Internet, McKinsey has estimated that somewhere between 3.8 billion and 4.2 billion people—or more than half the world's population—will remain offline in 2017. Some three-quarters of those likely to be left behind are concentrated in 20 low-income countries, and they are disproportionately poor, illiterate, rural, and female.[84] Even among the emerging economies analyzed in this report, Internet penetration is relatively low: 54 percent in

[84] *Offline and falling behind: Barriers to Internet adoption*, McKinsey & Company Technology, Media & Telecom Practice, August 2014.

Brazil, 47 percent in China, and only 20 percent in India.[85] But the digital divide is not just a phenomenon in the emerging world. Even in the United States, which has one of the highest Internet penetration rates in the world, some 50 million people remain offline.

As online talent platforms become the norm for individuals to find work and companies to fill jobs, bridging the digital divide becomes even more critical for inclusive economic development. Gaps in broadband and mobile networks will have to be addressed, and affordable Internet service will have to be widely available to allow everyone access to opportunity. In rural areas and other places where the business case does not make sense for the private sector, the public sector may have to provide funding or incentives, establish public-private partnerships, or address obstacles to investment in order to provide the necessary infrastructure.

In addition, millions are offline due to a lack of digital capabilities. Education systems around the world will be challenged to teach basic digital literacy to all; it is becoming a prerequisite to economic participation and job prospects. Schools will also need to develop curricula for advanced students to acquire more sophisticated digital skills.

Harnessing the insights from online talent platforms

Today online talent platforms are gathering rich troves of data on how labor markets function. By capturing and saving this data over time, they can track the positions that employers are filling, the skills required, and career pathways that take people from education and entry-level positions into more fulfilling work. Capturing this data and applying sophisticated analytics could produce better insight into how the demand for specific skills and occupations is evolving—in greater detail and something much closer to real time than traditional labor statistics. This could create new visibility into skills shortages and requirements, the effectiveness of particular educational institutions and programs, talent migration patterns, and worker productivity. This information would be valuable to policy makers, companies, and individuals alike.

There is an enormous opportunity to create a more effective and responsive system for education and training—one that empowers individuals with better information about career paths and educational investment while shifting the overall mix of skills to meet the needs of the economy more dynamically. But capturing this opportunity is not a given. It will take private-sector innovation, public-sector leadership, and new types of partnerships to realize this potential. Much of this data is being captured by individual platform operators, but taking this capability to the next level may require a consortium of such companies or cooperation with the national statistical agencies that currently track labor market data and outcomes.

When New York City wanted to promote startups and technology jobs, for example, officials turned to LinkedIn for insight. The company provided a map of job openings and talent that showed a local shortage of workers with mastery of specific programming languages. New York used this information to determine how to allocate $10 million in funding to help city schools, non-profits, and companies bridge these gaps.[86] A similar approach is being applied to a new federal effort to partner with local communities and employers across the United States to train workers for unfilled technology jobs.[87] Similar public-private partnerships involving platform providers could tackle a range of labor market challenges, such as connecting military veterans with job opportunities.

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[85] Internet World Stats as of mid-2014.

[86] Amarita Jayakumar, "How big data could make job hunting less stressful," *Washington Post*, March 15, 2015.

[87] Greg Jaffe and Amarita Jayakumar, "Obama unveils new tech training initiative," *Washington Post*, March 9, 2015.

Beyond the world of policy, educators and vocational training providers of all stripes will need to make active use of this data to shape their offerings. Already it is possible to use online talent platforms to track where the graduates of a given institution wound up in the labor market. Education providers could be held to a new standard of accountability as the outcomes associated with specific institutions and degree programs become more publicly transparent.

Addressing broader issues of data ownership and privacy

Online talent platforms may bring a potentially valuable new dimension to profiles of individual workers: their soft skills, traits, and endorsements from colleagues and superiors. The accumulated ratings and feedback provided to contingent workers through online marketplaces could be a valuable asset, particularly for young people with little other work experience, as they seek to expand their careers or seek permanent employment. Accumulating and codifying these reputational elements can help individuals distinguish themselves from others looking for work and can help employers identify people who are a better fit for the positions they are filling.

These ratings have value to multiple parties. For the worker, they serve as an opportunity to distinguish themselves and demonstrate value to employers and customers. For the platform provider, they create a reason for the worker to stay affiliated with that platform. For the customer, they provide information that improves the quality of the service and reduces risk. The value also varies by performance. High-performing and highly rated individuals will have a deep interest in sharing their results with others, whereas those with less satisfactory records might not want the information to get out to future employers or customers.

This issue of data ownership in an age of social media is not unique to online talent platforms. Resolving the question of whether employers, platform providers, or individual workers own this data—as well as who is entitled to use it and under what conditions—will be of increasing importance.

Similarly, personal privacy is another issue that touches every part of the Internet, and online talent platforms are no exception. It is particularly relevant to platforms that use big data tools to "scrape" social media sites to help employers identify, follow, and engage with prospects even before they are ready to hire. Because findings from such searches can theoretically go beyond skills and experience to encompass hobbies, habits, or aspects of an individual's personal life, companies will have to set thoughtful limits about how they use these tools—and individuals will need to be conscious of what they share and post online.

Policy makers continue to wrestle with striking the right balance between protecting individual privacy and capturing the full benefits of data sharing and private-sector innovation. Today there is a patchwork of federal and state privacy laws across the United States. The European Union has a more overarching and comprehensive framework, although enforcement varies among members, and countries have their own fragmented data storage policies. A recent EU ruling created the "right to be forgotten," which gives individuals greater rights to have personal information removed from public websites. Brazil has recently drafted its own new data privacy law. Fragmented standards around the world can significantly increase the cost and complexity of storing data about workers and constrain the ability to understand trend lines that begin in historical data. Clarifying ambiguous privacy frameworks could lay the groundwork for capturing the beneficial aspects of online talent platforms.

Rethinking national trade statistics

Digital platforms have user networks that span borders, so governments will need to track the growing international trade associated with them. National balance of payments statistics and data collection efforts were designed in the postwar era, when most trade was in physical goods. But online talent platforms may facilitate an explosion in global trade in services, and policy makers will need to devise a way to track these flows.[88] When a US company hires a software programmer in India to perform a task, for instance, this should be counted as a business service import for the United States and an export for India. The statistics become even more complicated if a European company makes the same transaction using a US-based platform. Governments around the world will need to invest in finding ways to capture these flows more accurately.

Rethinking labor regulation and benefits for contingent work

The freelance, temporary, part-time, and contingent segment of the labor force existed long before the Internet. But statistics have never painted a very clear picture of its size due to the many varieties of working arrangements that are possible. In the United States, temporary workers make up 4 percent of the labor force (2 percent are engaged in temporary contract with through staffing agencies). Self-employed independent contractors make up another 4 percent of the labor force; incorporated self-employment accounts for approximately 2 percent, although it is difficult to know exactly how much of this share is made up of true freelancers. Online platforms that dispatch contingent workers to provide services on demand account for an even smaller subset, which we currently estimate to be at less than 1 percent of the overall US working-age population.

As technology makes new remote working arrangements possible, freelancing can offer more freedom and flexibility than ever before—but it also comes with an element of insecurity. Policy makers around the world will need to consider the best way for contingent workers to access the full range of benefits in the future. These include health insurance, disability insurance, retirement plans, and benefits such as unemployment insurance, parental leave, worker's compensation for job-related injuries, and paid time off.

The United States, for example, designed a system many years ago in which employers are the mechanism for delivering a wide range of benefits (even if employees share the costs with them). Because they fall outside this system, US freelancers currently have extremely limited options for retirement savings. The annual caps for savings in an individual retirement account were $5,500 for those under age 50 and $6,500 for those over 50 in 2015—far below the $18,000 and $24,000 caps that apply to employer-based 401(k) plans, and not enough to build wealth for retirement. Freelancers must purchase their own health and disability insurance, and they must rely on their own resources if they take time off for any reason, including illness, the arrival of a new baby, or caring for sick family members.

If alternative working models and employment relationships become more commonplace, policy makers will need to consider designing a system of more portable benefits that is geared to these new realities. New online marketplaces and intermediaries may emerge to help expand access to benefits and support services—and if they do, choosing a freelance career path could become more viable.

As new digital marketplaces for on-demand services continue to proliferate, there are growing questions about whether their large contingent workforces should be classified as regular employees or as contractors. The answers have important implications for whether some types of labor market regulations apply to these workers.

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[88] *Global flows in a digital age: How trade, finance, people, and data connect the world economy*, McKinsey Global Institute, April 2014.

As of this writing, class-action lawsuits brought against Uber and Lyft over this issue were headed to jury trials in California; other on-demand companies in other industries are facing similar suits as well. The outcomes, while still uncertain, could affect the viability of the business model underpinning the on-demand economy. Uber and Lyft, for example, could be required to reimburse drivers for expenses such as gas and insurance as well as paying for unemployment insurance, Social Security, and other benefits if their drivers are classified as employees.[89] Minimum wage laws could also apply. Concerns over protecting jobs in the traditional taxi industry led regulators in France, Germany, and Spain to ban Uber (a move the company is currently contesting).[90]

It will be increasingly important to clarify how the contingent workforces associated with talent platforms are treated under the law. New frameworks may need to develop. Countries such as Germany, Sweden, and Canada, for example, have a "dependent contractor" category that grants some additional protections to workers who fall somewhere between employees and independent contractors and are dependent on a single employer.[91]

Companies and organizations must invest in new capabilities

In the new knowledge-based economy, winning companies will be those that successfully attract, retain, and deploy the most productive human capital—and the arrival of online talent platforms may ratchet up the war for talent. In a world where workers have greater mobility and competitors have new tools for poaching the top-performing people (or even entire teams), it is becoming more important than ever for companies to create a compelling value proposition and continued growth opportunities for their employees.

The organizations at the leading edge of these trends are already cultivating real analytic and social media skills in their human resources departments, but the vast majority have a great deal of catching up to do. Most organizations lack integrated systems for managing their current workforces—let alone for identifying and engaging with potential recruits or developing long-term plans for talent needs. With multiple systems and fragmented data, their visibility into such issues is limited.

Aside from investing in new platforms and capabilities, organizations will need to change the way they operate. "Human resources" will no longer be about compliance or specific transactions during hiring or performance reviews. It is becoming a more holistic concept—one that aims to create a tailored work environment for employees and align it with business objectives. Interactive tools for performance, learning, and engagement can be embedded into everyday processes to support business priorities. There are many new systems that create internal social media interaction, make individual performance more transparent, monitor productivity and engagement, and assess whether an employee is a good fit for a certain team or assignment.

Companies will have to test these new systems carefully—and avoid taking them to such extremes that employees become distracted by these tools or feel resentful of being monitored. The tool that works in one corporate culture for boosting morale and productivity could become a "venting board" or subject to abuse in other environments.

This last point is especially important because workers are not the only ones who need to manage their online profiles. Just as they carefully manage their consumer brands, companies now have to be conscious of managing their reputations as employers. Online

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89 Tracey Lien, "Uber and Lyft drivers' class-action lawsuits will go to jury trials," *Los Angeles Times*, March 12, 2015.

90 Dara Kerr, "Uber fights back in Europe, files complaints against governments," CNET, April 1, 2015.

91 *Challenging the legal boundaries of work regulation*, Judy Fudge, Shae McCrystal, and Kamala Sankaran, eds., Hart Publishing, 2012. See also Lauren Weber, "What if there were a new type of worker? Dependent contractor," *Wall Street Journal*, January 28, 2015.

platforms now allow employees to rate and review the experience of working at a given company, so workplace practices are becoming transparent to prospective candidates (and even to clients and competitors, who may also see this information and form opinions about a company's integrity). Before deciding to change jobs or accept a new role, many individuals now scour platforms such as Glassdoor to learn what existing employees have to say about job satisfaction, company culture, and lifestyle—and these intangible factors may be as important to highly skilled professionals as compensation.

Talent platforms will also have significant implications for individual managers and manager-employee relationships. On the one hand, increased visibility into the performance, goals, and development needs of individual employees could make it possible for managers to provide better coaching and create an environment that brings out each person's best effort. On the other hand, these systems could also be open to abuse, and companies will need to be careful about how they are incorporated into operating models and how they reflect organizational values.

Finally, small businesses could reap big benefits from online talent platforms. Startups and small firms that lack extensive human resources operations now have avenues to improve the way they hire and train employees. It has also become vastly easier for small firms to contract out specific assignments (from web design to accounting to public relations for a product launch) when they cannot afford to make a full-time hire. Conversely, online talent platforms could eventually put the business model of talent recruiting agencies at risk.

Individuals will have opportunities to manage their careers more actively

As online talent platforms become the norm for hiring, individuals will need to engage if they are going to be competitive in the job market. In the short term, this means putting time and care into building a personal online presence. To stand out, they will need to showcase their experience, establish expertise by joining groups or posting content, and build their professional networks. However, users will have to be mindful that every online interaction or indiscretion can affect their professional reputation. That calls for caution, but there is also greater room to gain the attention of prospective employers and find opportunities that they never knew existed.

Some of those new opportunities may include signing on for long-term projects rather than traditional open-ended employment for a company. This model is already commonplace in the world of media and entertainment and in the construction industry, and as talent platforms take hold, it may appear in other industries and on a larger scale.

Passive recruiting already appears to favor those whose work product and materials can be placed online in digital form and shared, including programmers, designers, writers, architects, and artists. Lower-skilled and non-tech workers, and those whose work is less easily digitized, will have less to gain from this aspect but may benefit in other ways. Individuals without formal education credentials may be able to differentiate themselves through their online reputation via recommendations from former customers or employers. Online assessments may lower the risk of taking a chance on someone with natural talent for a certain role even if he or she has limited experience or has been unemployed for a long stretch.

Today everyone really does have a permanent record. Reputations are continuing to grow more publicly visible, which may make it harder to overcome past mistakes. But individuals can also arm themselves with better information about which skills will pay off and which companies offer good work environments. They can find job openings and connect with employers and colleagues anywhere around the world. They will be more mobile and more in charge of charting their own career path.

This will require adjusting to a new way of thinking about the world of work, however. Online talent platforms can offer users a great deal of information and insight, but it is up to individuals to act on that information and use it to plot their long-term career path. They will have greater agency, and in the future, they may feel less trapped in bad local economies as they can more easily learn about openings in other locations and opportunities for long-distance collaboration.

The days of joining an employer, rising through the ranks, and staying for decades are over. Workers in many fields are becoming free agents—for better and for worse. They may face more uncertainty and more frequent transitions, but that can bring greater access to opportunity than ever before.

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Governments around the world have struggled to move the needle on employment in recent years. Online talent platforms show real promise for injecting more transparency and dynamism into job markets. As people connect with work opportunities more efficiently, the potential exists for even larger economic ripple effects in the years ahead. In order to capture these benefits, regulatory frameworks, corporate practices, and individual mindsets will have to change along with technology. With the right investment, a thoughtful approach, and continued innovation from the private sector, the world could move closer to the goal of creating a labor market that works.

ONLINE APPENDIXES

A complete technical appendix describing the methodology and data sources used in this research and a separate appendix of country insights are available at www.mckinsey.com/mgi.

Technical appendix

The technical appendix includes details on the following topics:

- Methodology and data sources for determining GDP and employment impact in seven focus countries and 47 additional economies
- Quantification of the number of individuals whose employment outcomes could be improved by online talent platforms by 2025, by country and globally
- Estimation of potential savings in labor market program spending and improved tertiary education spending
- Methodology for determining the impact on the financial performance of sample companies in six industries.

Country appendix

The country appendix provides a detailed description of the labor markets and potential impact of online talent platforms in our seven focus countries: the United States, United Kingdom, Germany, Japan, China, India, and Brazil. For each country, we provide information regarding:

- Historical labor market trends, including the size of the working-age population, labor force participation rate by demographic group, unemployment rate, and labor market fluidity
- Survey evidence on the extent to which companies say they can find the talent they need and other indicators of job market matching inefficiency
- Individual adoption of online talent platforms as well as LinkedIn membership and survey data on job satisfaction, desire to work more hours, benefits of online talent platforms, and other topics
- The GDP and employment impact of online talent platforms by 2025, with a discussion of factors that drive the results
- The number of individuals whose job outcomes could be improved by online talent platforms by 2025, and specific ways this will be achieved
- The potential to reduce labor market program spending and improve the impact of education spending through better data and signaling.

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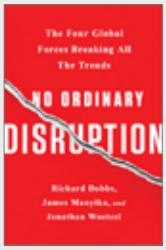

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