

McKinsey&Company

Women Matter

Women and the Future of Work: A Window of Opportunity in Western Europe?

November 2018





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Women Matter

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Executive Summary

Western Europe has made progress towards gender equality over the past two decades, but significant gaps persist in workforce participation, leadership positions and pay. Major disruptions in the labor market have begun that could have profound implications for gender equality through 2030. Automation and artificial intelligence, for example, will displace many workers while, simultaneously, increasing investments, rising incomes or ageing population trends will create new jobs that require skills in short supply.

Depending on how it unfolds, the “future of work” could drive gender equality – or hinder it. Our new research shows that many dynamics could favor women, and that many challenges can and should be turned into opportunities. Focusing on France and Germany, the Western European countries with the two largest workforces, we found that the overall shifts could favor women in France by contributing to a slight improvement in female workforce participation. In Germany, we expect the overall effects to be at least neutral for women.

More important is that these shifts will present major new opportunities for women in some sectors that are likely to grow. For example, women in both countries are well-positioned in the growing health care and social assistance sector and will benefit from dominant positions in some of the sector’s occupations that will grow fastest, including health aides, therapists and physicians.

Women’s prospects are not as bright in some other sectors and occupations. In the professional, scientific and technical sectors, for example, women hold more than their current share in the overall workforce in occupations that we believe will shrink, such as clerical and office support, and are underrepresented in occupations likely to grow, such as computer engineering. They are also underrepresented in the manufacturing sector in Germany, especially in engineering occupations. To capture the growth opportunities in those sectors, they will need to master specific new skills and reorient their careers. Linear career paths may become a relic of the 20th century.

Our research suggests that demand for three skill categories – technological, social and emotional and higher cognitive skills – should grow the most over the next decade. While women overall have great strengths in these categories, they lag men in others, such as advanced technological skills and haven’t yet captured their fair share of leadership positions.

Helping women gain the most valuable new skills – “right-skilling” – and ensuring that they are fairly represented in those efforts will require concerted actions by governments, educational institutions, companies and other public and private institutions. Leaders across these organizations will need to help their stakeholders understand the importance of right-skilling for both women and men and create transparency about major shifts in demand for labor.

Government and industry need to continue designing and supporting targeted training programs to help displaced workers find new jobs, but they also need to take a gender lens and ensure these actions improve gender balance. And while retraining will be required, each country needs to emphasize its efforts on the generations to come: people's interest in science, technology, engineering and mathematics (STEM) begins in childhood, and too many girls turn away from STEM at an early age. Policy-makers and business leaders will also need to continue building the pool of female talent up to management positions.



In brief

At least **STABILITY** of women participation level
in the labor force by 2030



46.6% participation rate maintained in Germany
and potential 0.5pp increase in France
to reach 48.8% participation rate in 2030

DIVERSE LEADERSHIP

*Goes hand in hand with
Organization of the Future*



Companies in top quartile female representation in leadership are champions of the management practices of the future such as supportive and consultative leadership and creating open and trusting environment

5 KEY ACTIONS

To leverage the Future of Work and unlock women potential



Empowering through transparency on future opportunities



Level skill-building playing fields for both women and men



Foster more dynamic career path for women



Create pathways to STEM fields of education



Fix the leadership gap

Introduction

A technological revolution and major demographic trends are reshaping labor markets across Western Europe and around the world – and these changes will accelerate in the years ahead. McKinsey's latest research addresses the question of whether these changes will help resolve gender inequalities or make them worse, and what industry and government can do to keep moving toward equity in the workplace.

Western Europe has made real advances in gender parity, especially in increasing women's representation in decision-making bodies. For example, from 2013 to 2017, women's share of seats on private sector corporate boards in France rose from 26 to 40 percent; in Germany, it rose from 20 to 33 percent. In the same period, the share of women on French and German executive committees of companies in the CAC40 and DAX30 rose from 9 and 7 percent to 17 and 14 percent, respectively.

Despite this progress, Europe is still struggling to bridge the remaining gender gaps in the workplace (*see Box 1*). These shortfalls are costly, and not just in terms of fairness. Research shows that closing the gap could raise Western Europe's annual GDP by USD 2.1 trillion by 2025.¹ Gender equality on a global scale could add as much as USD 12 trillion to the world's global GDP each year.

Now, as companies and governments try to close these costly gaps, powerful trends are transforming the economic landscape. Startling advances in technology and demographic shifts are changing the nature of work, including the value of specific skills – which may have profound implications for gender equality.

According to research by the McKinsey Global Institute, nearly 60 percent of occupations could see at least 30 percent of their tasks automated.² While many jobs will be lost, new jobs will be created. Employers will increasingly value technological, social and emotional, and higher cognitive skills, and require far less manual labor and fewer workers with only basic cognitive skills such as simple data input and processing abilities.

Our research shows that how women fare will vary by occupation and industry sector. Indeed, some are already well-placed to take advantage of new opportunities. Drawing on macroeconomic projections and sectoral data from France and Germany, Europe's two largest labor markets, our study suggests that the technological and demographic waves should be neutral or slightly positive for women in the workplace.

1 *The power of parity: How advancing women's equality can add \$12 trillion to global growth*, McKinsey Global Institute, September 2015.

2 *Skill Shift: Automation and the Future of the Workforce*, McKinsey Global Institute, May 2018.

Share of women on French executive committees in leading companies increased from

9%
to 17%

In Germany, it has increased from

7%
to 14%

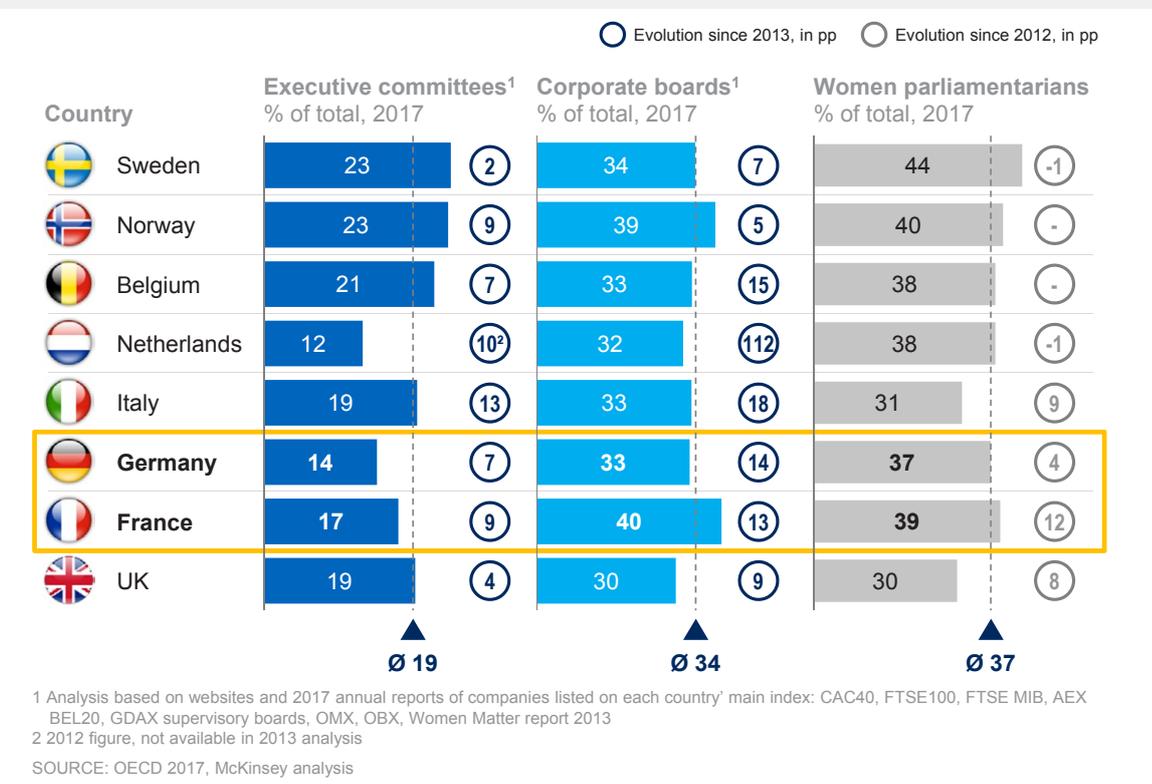
Nevertheless, the major workforce transitions in the years ahead are likely to have large-scale repercussions. Collective actions by government, academia, and industry – along with workers themselves – will be required to ease the path to the future of employment and ensure that women benefit.

Box 1: Highlights of the remaining gender gaps in Western Europe

- While women’s participation in the workforce rose from 44 to 47 percent from 2000 to 2017, it is still below their 51 percent share of the population.
- Women still occupy more jobs in low-wage occupations and low-productivity sectors, which helps explain why they represent 47 percent of the labor force but account for only 38 percent of GDP.
- The average adjusted pay gap for EU member states is 11 percent; this gap is 9.8 percent in France and 6.7 percent in Germany.
- Women still do 64 percent of unpaid care work (housework, child and elder care), and 31 percent do part-time work compared to only 8 percent of men.
- While women account for 51 and 55 percent of graduates of secondary and tertiary education, they represent less than 20% of executive committees’ members in leading companies across Europe (see exhibit below).

EXHIBIT

Women are still underrepresented in the top management of corporates and parliaments





01

The Future of Work – A potential step towards greater gender parity



Contrary to the claims of some observers, our research shows that the looming shifts in employment could help reinforce women's participation in the labor force, quantitatively and qualitatively. Indeed, considering the effects at the sector level in France and Germany, we see opportunities to reduce persistent gender imbalances.

Women could maintain their participation rate in Germany and grow it by half a percentage point in France

Women should not be more impacted than men by the job shifts through 2030. By maintaining their current share in the labor force in job reductions and creations by 2030, women could even slightly increase their participation rate in France by 0.5 percentage points, while maintaining it in Germany (*Exhibit 1*).

Women in France could enjoy twin benefits: less exposure to the disruption of automation – according to our model, women hold 47.4 percent of the jobs likely to be lost, 0.9 percentage points lower than their current share in the labor force – and better positioning in largest pockets of growth in employment. In France, these pockets where women have a higher participation (1.4 percentage points above their current share), will account for half of job creation.

In Germany, job displacements will likely strike men harder than women, but job creation will tend to benefit men, maintaining today's overall employment imbalance.

In France, women could increase their workforce participation by **0.5pp.**
In Germany the effect is neutral

Box 2: Our methodology

To assess female workforce participation in 2030, we looked at different sectors (from health care and social assistance to manufacturing) and occupations (from clerical workers to managers).

For each combination of sector and occupation ("cell"), we used the McKinsey Global Institute's (MGI) estimate of jobs gained and lost per cell and combined it with Eurostat data on today's female participation per cell.

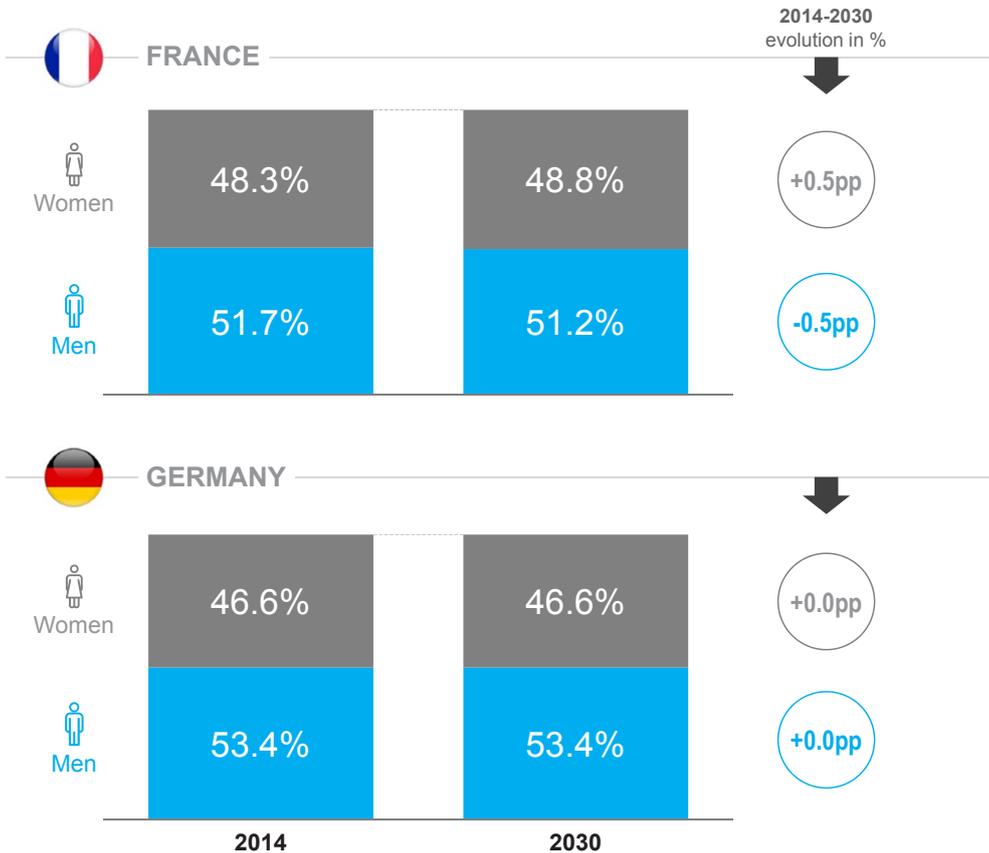
Our projections are built on the hypothesis that men and women maintain the share for each cell.

For the skill data, a similar approach was used, combining the MGI's skill shift data and Eurostat data on today's female participation per cell.

EXHIBIT 1

In the Future of Work, women can maintain their participation rate in Germany and slightly improve it in France

Projection of employment distribution by gender, %



SOURCE: MGI Automation model, Eurostat employment by gender 2015

As major pockets of employment growth emerge, opportunities for women will vary

To assess the level and nature of employment opportunities emerging for women, we projected net job creation by sector in France and Germany and focused on the largest job creation sectors overall. In France, we expect most job additions through 2030 in health care and social assistance, professional, scientific, and technical services,³ manufacturing, and wholesale and retail, amongst others. In Germany, manufacturing will create the most new jobs, followed by professional, scientific, and technical services and health care and social assistance (*Exhibit 2*).

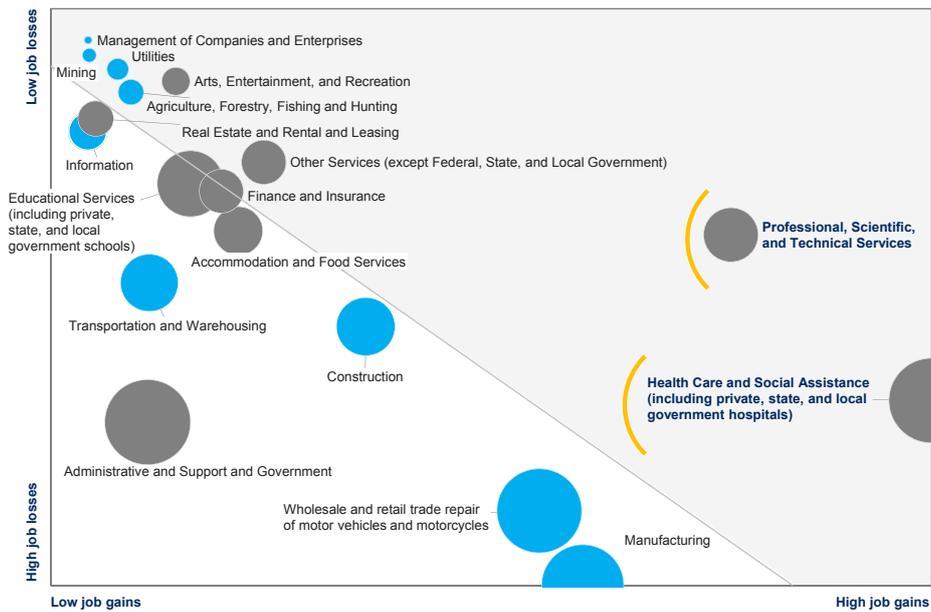
³ In this report, the “professional, scientific, and technical services” sector encompasses the following occupations: accounting, tax preparation, bookkeeping and payroll services, architectural, engineering, and related services, specialized design services, computer systems design and related services, management, scientific, and technical consulting services, scientific research and development services, advertising and related services, and other professional, scientific, and technical services. Source: McKinsey Global Institute.

EXHIBIT 2

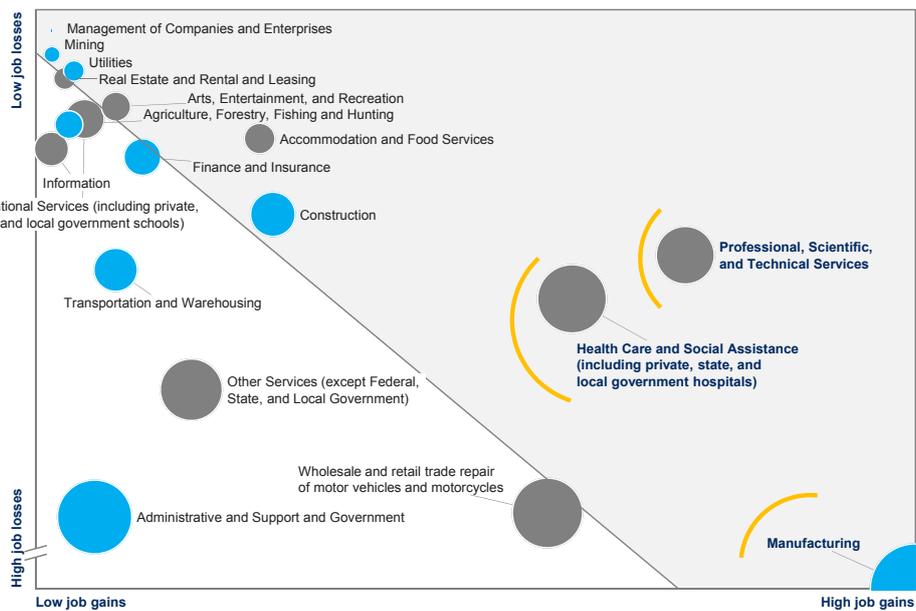
Most job additions are expected in the health care and social assistance, professional, scientific and technical services and manufacturing sectors, both in France and Germany

○ 1,000,000 FTEs in 2014 ■ Growing sectors ● Share of women higher than in the overall workforce (48% in France, 47% in Germany) ● Share of women lower than in the overall workforce (48% in France, 47% in Germany)

FRENCH SECTORS RANKED BY JOBS GAINED AND LOST



GERMAN SECTORS RANKED BY JOBS GAINED AND LOST



SOURCE: MGI Automation model, Eurostat employment by gender 2015



Our research reveals that the emerging pockets of growth across sectors and occupations will present varying opportunities for women depending on their level of representation in the labor force. As the future of work reshuffles the cards of employment, the overall picture is promising for women as long as they consolidate their dominant positions in some sectors/occupations and, conversely, benefit from major disruptions in others to improve gender distribution.

Women are well-positioned to capture job opportunities in sectors where their current weight is high

In sectors where they are already well-represented, such as in health care and social assistance and wholesale and retail trades, women are well-positioned to capture new job opportunities. In health care and social assistance, one of the largest pool of job creation, the dynamics favor women both in France and Germany. Indeed, for these two countries, health care and social assistance will account for 18 percent of job additions and provide a third of the total potential for women.

Overall, we expect to see 1.15 million and 1.65 million new health care and social assistance jobs in France and in Germany by 2030, respectively, and the displacement of about 600,000 positions in each country. Given women's already high job participation in the sector – currently 72 percent in France and 78 in Germany – they may be well-positioned to benefit from the sector's growth.

Looking at pockets of growth amongst occupations in this sector, most of the job additions are likely to occur in health aide and support roles. For this profession category, 370,000 new positions should be created in France by 2030, while 140,000 may be at risk. In Germany, we expect 780,000 additional jobs and 180,000 full-time workers potentially displaced. Women are well-positioned to benefit from this growth, as they already hold more than 80 percent of these roles in France and Germany (*Exhibit 3*).

We also expect the number of jobs for therapists, doctors, and personal care and childcare workers to rise in both countries. Given the 64 to 89 percent share of women in these three occupations in France and Germany today, these categories appear to be major pools of professional opportunities for women for decades to come.

72%

Share of jobs in the health care and social assistance sector occupied by women in France and

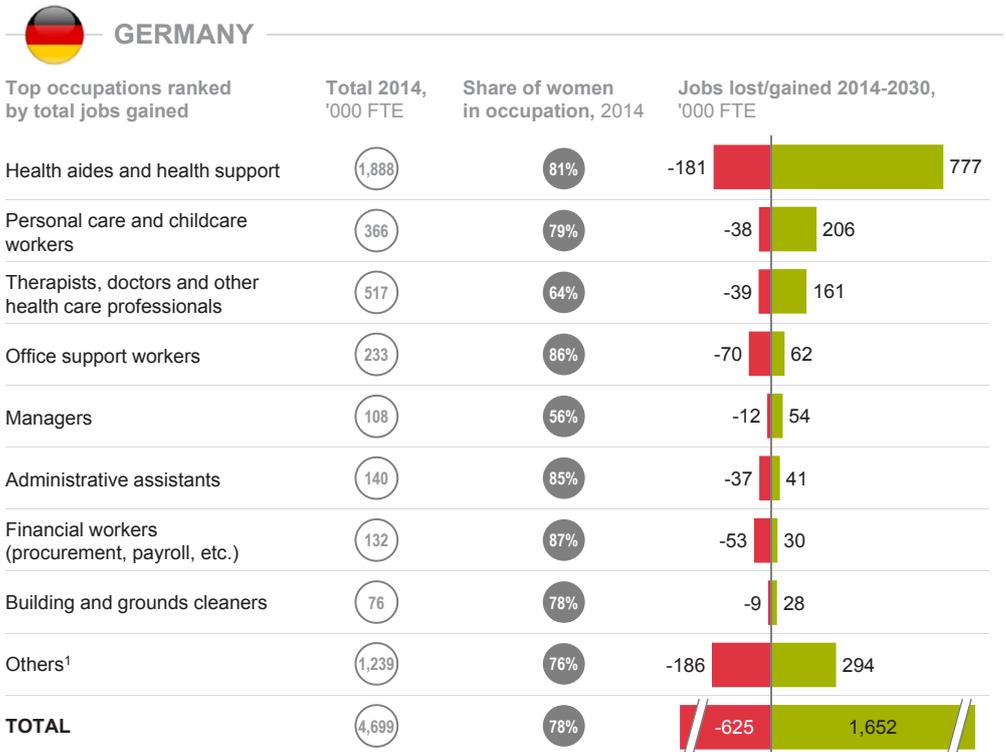
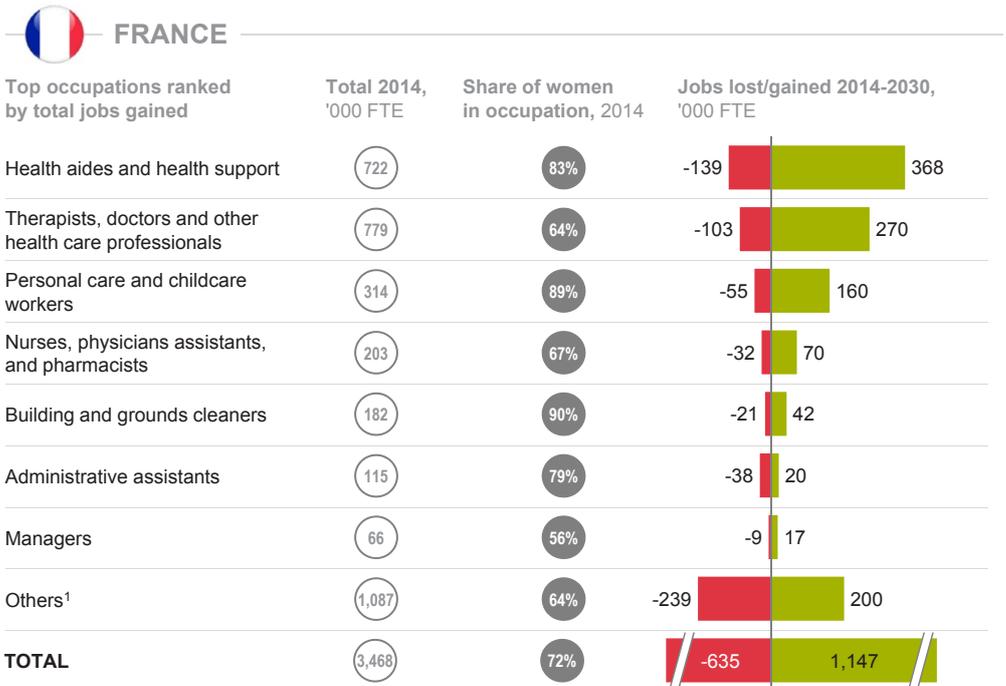
78%

in Germany

EXHIBIT 3

Women are positioned to benefit from growth in the health care and social assistance sector in France and Germany

● Share of women higher than in the overall workforce (48% in France, 47% in Germany) ● Share of women lower than in the overall workforce (48% in France, 47% in Germany)



¹ Including information and record clerks, health technicians, nurses, assistants and pharmacists, etc.
SOURCE: MGI Automation model, Eurostat employment by gender 2015



Women current participation in highest growth pockets in the professional, scientific and technical services sector ranges

from **31** to **49%**

In Germany, women only hold

21% of engineering positions in manufacturing

Women will need to reorient towards high-growth occupations and build their mobility across sectors to tap emerging opportunities

In two other sectors that will create 40 percent of new jobs – professional, scientific, and technical services and manufacturing – women are underrepresented today and will have to do more to build their presence in high-growth occupations. To that end, we clearly need to understand the challenges at stake in these two industries.

In the professional, scientific, and technical services sector, we expect 900,000 and two million job additions in France and Germany, respectively. Although women comprise nearly half of the labor force in this sector, they are disproportionately represented in three categories of positions where we expect major displacements: office support workers, information and record clerks, and financial workers – most in procurement and payroll – where digitization and automation are making rapid gains. In France, women hold more than 80 percent of the positions in these three categories (*Exhibit 4*).

Meanwhile, women’s participation ranges from 31 to 49 percent in the sector’s three fastest-growing occupations. In France, these are computer engineers, managers and business and financial specialists, and in Germany, computer and building engineers, engineers, and business and financial specialists.

It is imperative to build women’s awareness of the opportunities existing in the sector so that they can gain ground in its growth by reorienting from one occupation to another.

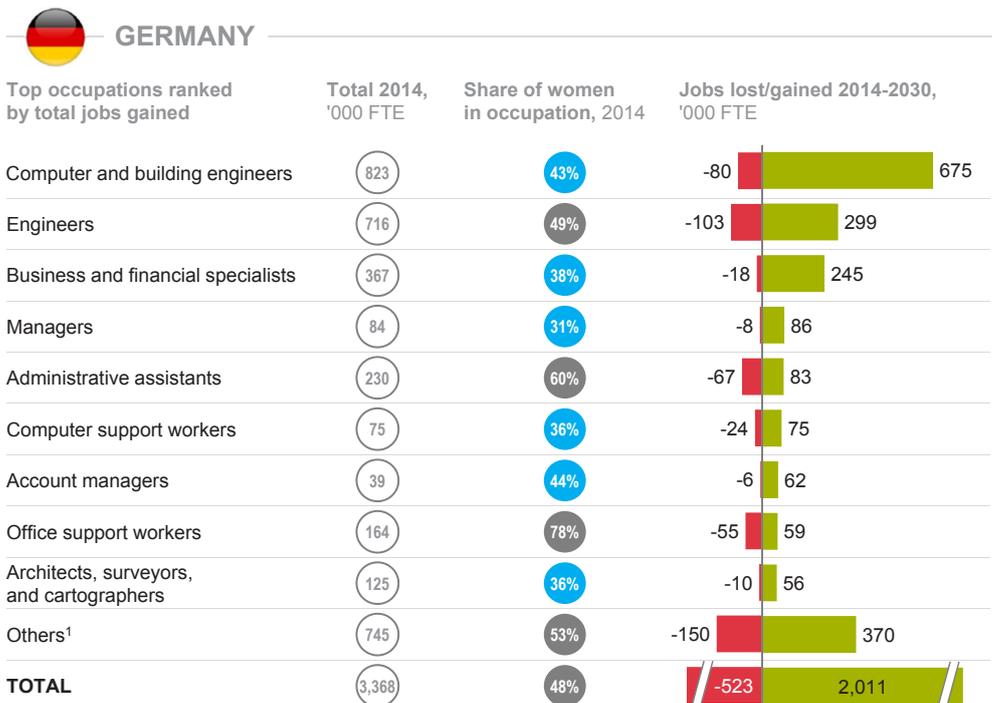
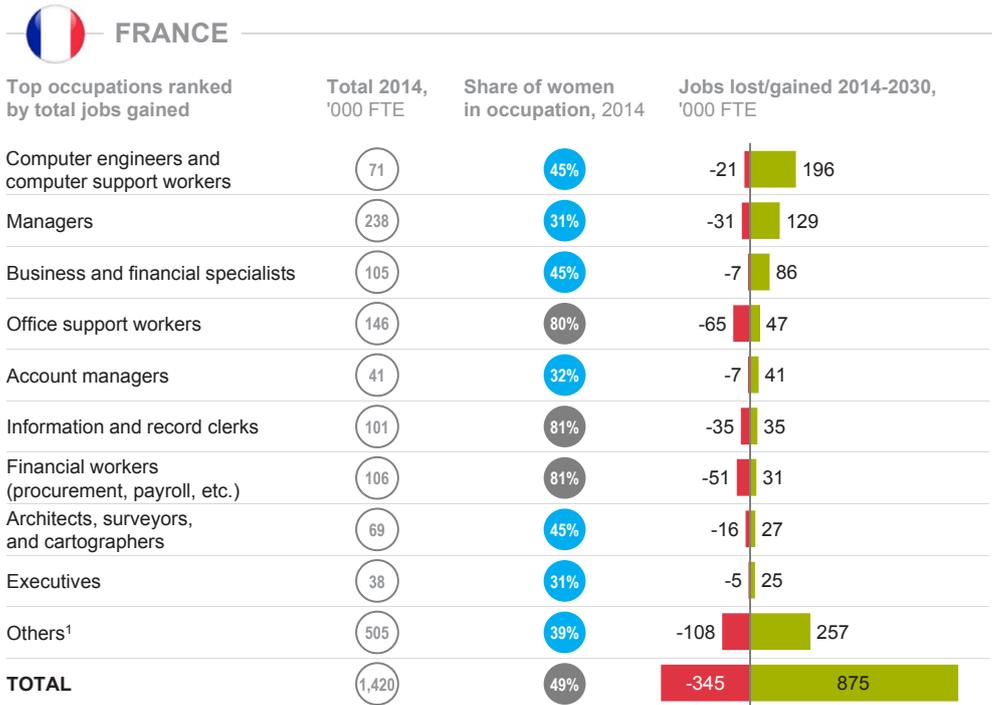
The manufacturing sector in Germany typically illustrates the opportunity that lies behind fostering women mobility from one sector to another. As the largest job creation sector in the country, 800,000 full-time positions are expected to be created, and, most of them in engineering. Women hold only 21 percent of these jobs in manufacturing today, while in other industries such as professional, scientific, and technical services, they account for 49 percent of all engineers (*Exhibit 5*). This may present an important catch-up opportunity for women if they can raise their representation among engineers in manufacturing.

The overall picture of the impact of the future of work is at least neutral and potentially very positive as illustrated by the examples of the health care and social assistance, professional, scientific and technical services and manufacturing sectors. For that scenario to unfold and foster greater gender diversity in the economy, reskilling effort and mobility will be key for women.

EXHIBIT 4

The professional, scientific, and technical service sector is expected to offer major opportunities for people with the right skills

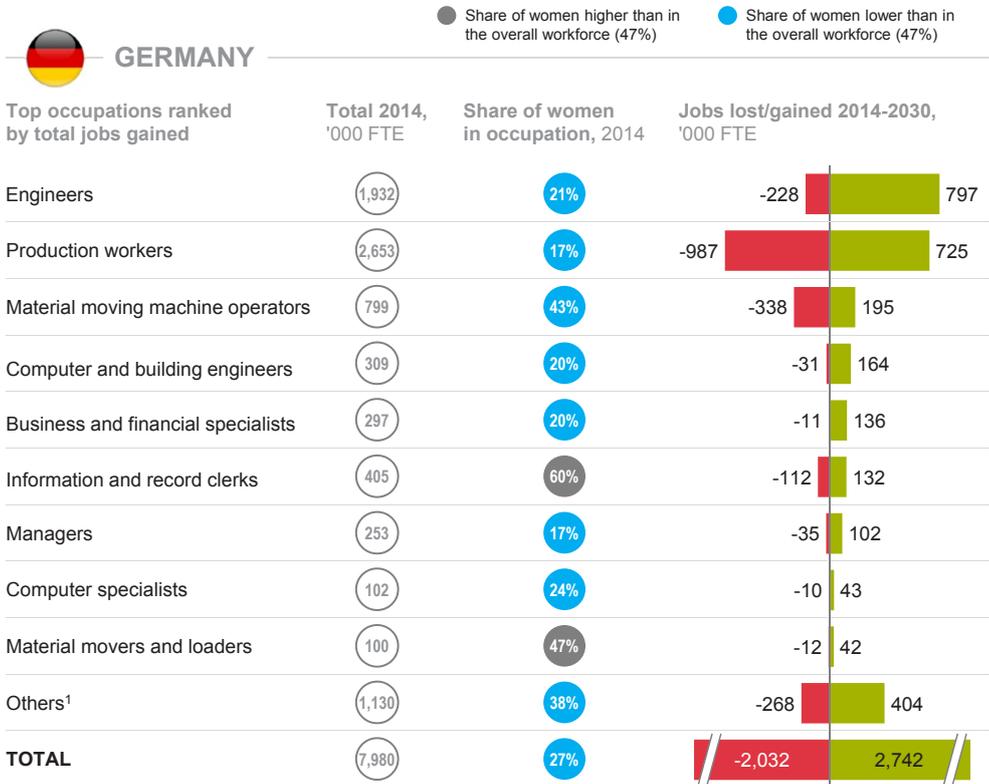
● Share of women higher than in the overall workforce (48% in France, 47% in Germany) ● Share of women lower than in the overall workforce (48% in France, 47% in Germany)



¹ Including sales workers (retail and online), administrative assistants, entertainers/media workers, etc.
 SOURCE: MGI Automation model, Eurostat employment by gender 2015

EXHIBIT 5

Women lag behind men in workforce participation in manufacturing



¹ Including account managers, administrative assistants, office support workers, etc.
 SOURCE: MGI Automation model, Eurostat employment by gender 2015



02

Right-skilling women to tap growth pockets



Research by the McKinsey Global Institute⁴ shows that three categories of capabilities will be central in tomorrow's labor market: technological skills, social and emotional skills, and higher cognitive skills (Box 3).

Box 3: Skills most in demand in the future

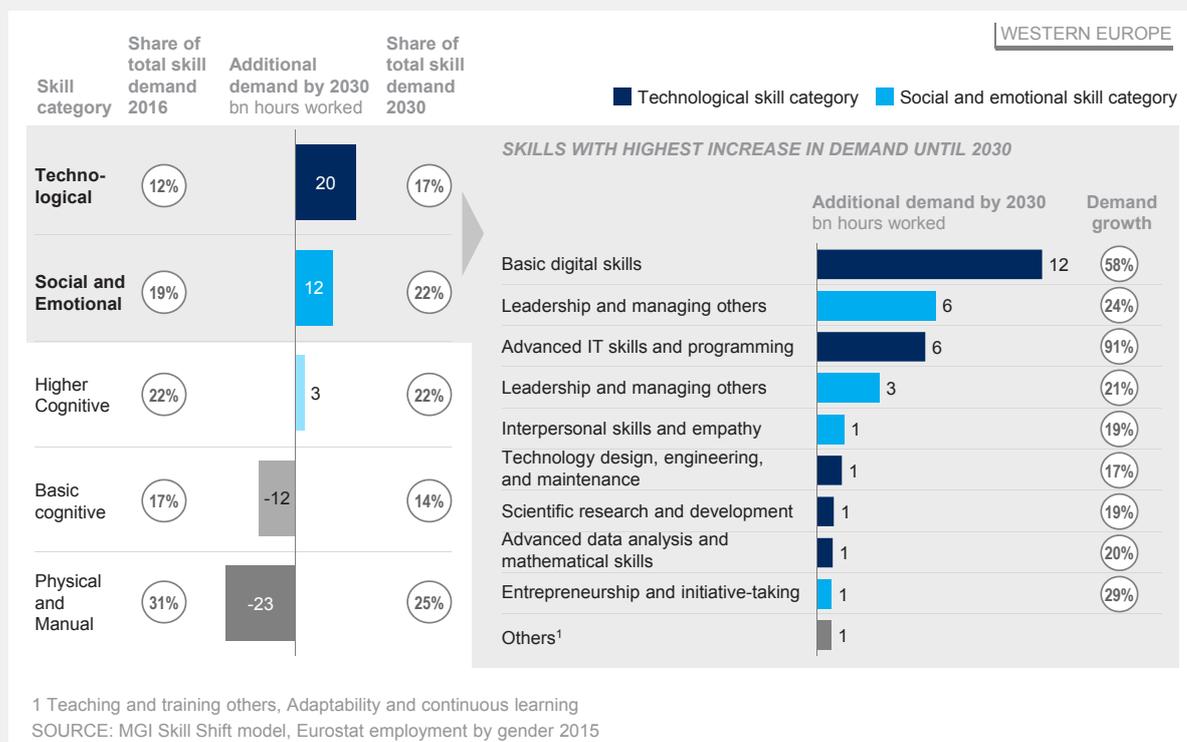
Technological skills, from basic digital skills to advanced IT and programming, represent only about 12 percent of the skills in demand today, but we expect demand for them to rise by 47 percent to represent 17 percent of total demand by 2030. The strongest drivers will be advanced IT and programming, where demand will rise by about 91 percent, and for basic digital skills, which will rise by 58 percent. Technological skills will drive job additions across sectors and occupations, as in most jobs, an increasing share of activities will be tech-enabled by 2030.

Demand for **social and emotional skills**, including leadership and managing others and advanced communication and negotiation, account for 19 percent of all skill demand today, and we expect this share to rise to 22 percent by 2030. Core drivers of this increased demand are entrepreneurship and initiative taking and leadership and managing others, where demand will likely rise by 29 percent and 24 percent, respectively.

Demand for **cognitive skills** will shift from basic to higher ones, which should grow by 4 percent by 2030. The overall demand for higher cognitive skills will nevertheless remain stable at 22 percent of the total in 2030.

EXHIBIT

Highest increase in skill demand until 2030 is expected in technological and social and emotional skill categories



4 Skill Shift: Automation and the Future of the Workforce, McKinsey Global Institute, May 2018.

Our research shows that changes in overall skill demand will likely mirror those in the sectors identified in the previous chapter. In health care and social assistance, for example, demand for basic digital skills should represent 38 percent of skill demand increase by 2030 (*Exhibit 6*).

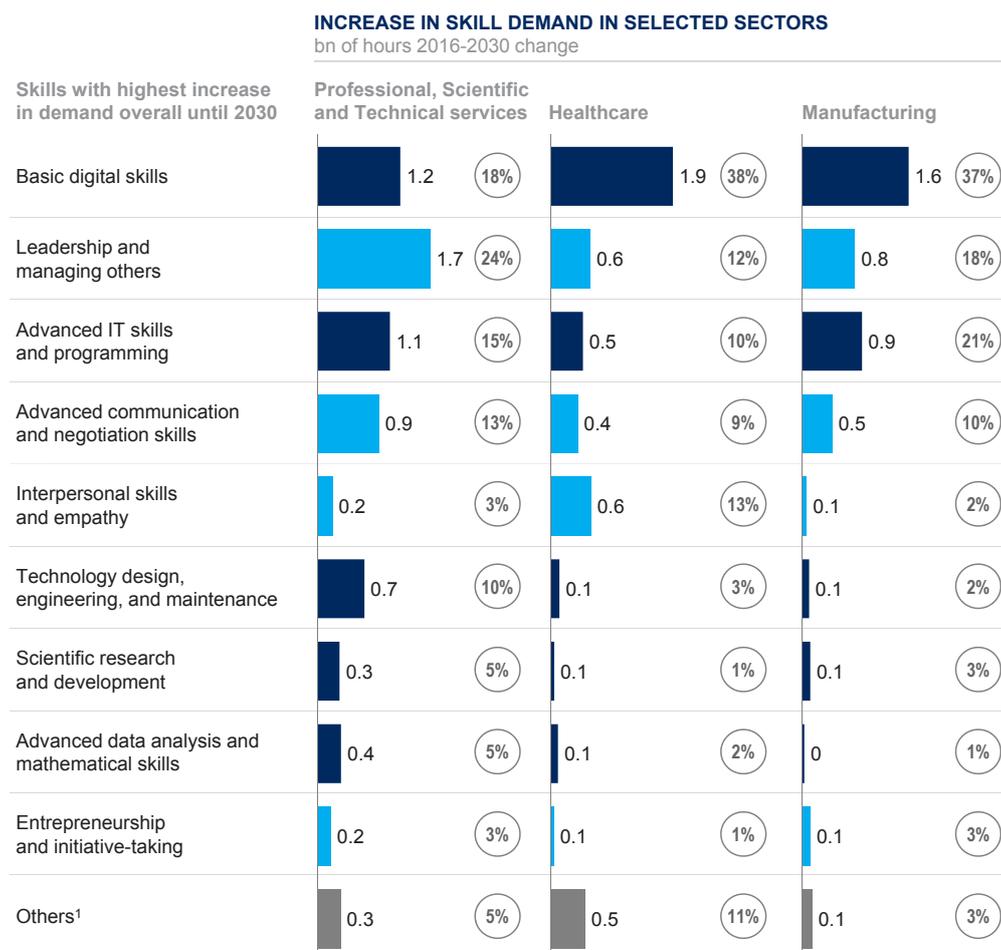
To transition to a new equilibrium, women will therefore need to meet a dual imperative: cultivating – or capitalizing on – their lead in skills where they are already well-equipped and mastering new skills in the categories where they still have a comparative deficit.

EXHIBIT 6

Demand is expected to rise for a range of skills in professional, scientific, and technical services, health care, and manufacturing

WESTERN EUROPE

⊖ Share of skill demand increase by 2030 in the sector ■ Technological skill category ■ Social and emotional skill category



¹ Teaching and training others, Adaptability and continuous learning
SOURCE: MGI Skill Shift model, Eurostat employment by gender 2015

Women are well-positioned in two categories of skills to meet expected changes in overall demand

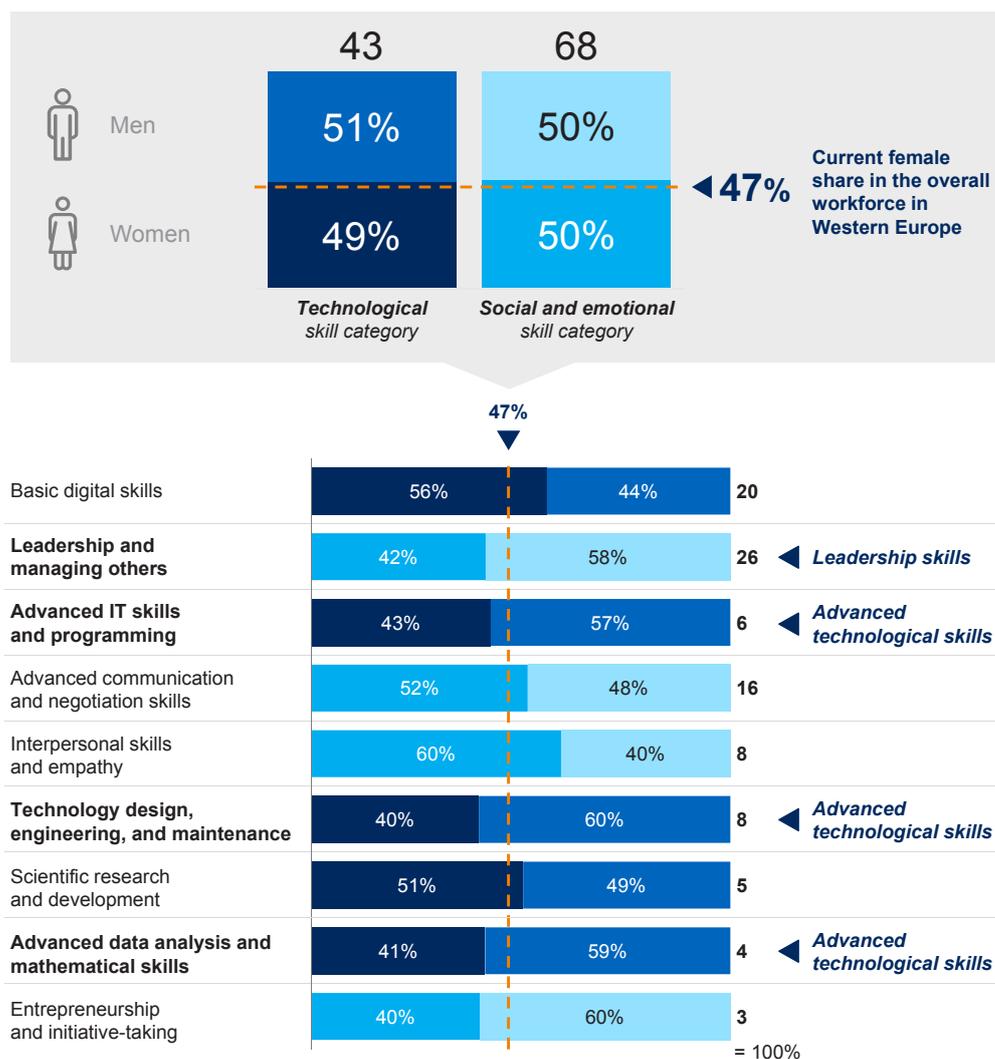
Compared to their overall workforce participation, women already perform a high share of activities in the skill categories where demand is rising. For example, women across Western Europe perform 49 and 50 percent of the activities that rely on skills in the technological and the social and emotional skill categories, respectively – a larger share than their participation in the workforce (*Exhibit 7*).

EXHIBIT 7

In general women are well-positioned on skills rising in demand, but two main areas for right-skilling remain: advanced technological skills and leadership skills

Skill deployment by gender, bn of hours 2016

WESTERN EUROPE



SOURCE: MGI Skill Shift model, Eurostat employment by gender 2015



Women in Western Europe perform

49%

of the activities relying on “technological” skills and

50%

of the activities relying on “social and emotional” skills

This overrepresentation is due to a strong presence in sectors such as educational services and retail trade, where the use of digital tools is widespread, and in areas like health care and social assistance, where social skills are crucial.

In the technological skills category, for example, women demonstrate strong basic digital skills, working 56 percent of relevant hours. In the social and emotional skills category, they display strong interpersonal skills and empathy, contributing 60 percent of relevant hours. We expect demand for these two skill categories to grow considerably, particularly basic digital skills, which will grow quickly in health care and social assistance and many other areas where core tasks, such as forecasting and optimizing operations, will rely increasingly on digital tools.

Women will have to master skills in two categories to close the gap with men

Our research revealed challenges in providing women with the right capabilities in two categories: advanced technological and leadership skills. Overcoming women’s low representation in both will be difficult – and crucial to tap future professional opportunities.

“Right-skilling” in advanced technological skills

Women contribute only 43 percent of advanced IT and programming, 40 percent of technology design and engineering and maintenance, and 41 percent of advanced data analysis and mathematics – far less than their fair share. Helping them gain the skills they need in those categories will unlock many growth opportunities. In the professional, scientific, and technical services sector discussed in Chapter 1, for example, we expect that a third of new demand will be in the technological skill category.

But that is only one part of the equation, as the skills divide begins at school. The acquisition of advanced technological skills requires strong academic training in science, technology, engineering, and mathematics (STEM) fields of study, but women in Europe are underrepresented across this education pipeline. From an early age, girls do not project themselves in STEM-related careers at the same level as boys: half as many girls, on average, expect to work as engineers, scientists or architects. For professions in the information, communication, and technology sector, the gap is even wider: 4.8 percent of boys aspire to work in this field compared to only 0.4 percent of girls. Furthermore, young women do not enroll in these spheres in tertiary education: women account for fewer than 40 percent of new entrants in science-related fields. Even when graduated in STEM, they are less likely than men to pursue careers in this realm: in OECD countries, the proportions are 43 percent for female STEM graduates versus 71 percent of male STEM graduates.

Closing the women leadership gap – an imperative for the agile workplace of the future

Today, in Western Europe, women take on only 42 percent of the leadership skills deployed in the economy, a category that we believe will see the second-highest demand growth to 2030 (Box 3). They do provide their fair share of leadership only in health care and social assistance, educational services and other services⁵ – three sectors that also require strong interpersonal skills.

And the situation is even worse at the top leadership level. While women account for about half of the labor force in France and Germany, in 2017, they still only represent 17 percent and 14 percent of executive committees' members in the leading companies of those countries.

Building the presence of women at the top is more relevant than ever. Not only has our Women Matter series⁶ demonstrated that more women at the top contributes to better organizational and financial performance, but this year's research also shows that women's leadership styles are well-suited to the agile workplace of the future. Indeed, we expect more organizations to need leaders who use agile management practices.

Several McKinsey reports⁷ have highlighted that future managers and executives will need to work in new ways, such as:

- Play more of an integrating role across team networks, fostering interaction and collaboration;
- Empower people to make strategic and organizational decisions – and hold them accountable;
- Provide overall coherence and guidance toward the ultimate destination.

The McKinsey Organizational Health Index, based on the survey responses of more than one million employees across 350 companies,⁸ shows that companies with a greater proportion of women on corporate boards and executive committees display management practices that will be required more often in the years ahead, such as supportive and consultative leadership,

5 Establishments in the "other services" category engage primarily in the following activities: equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, and providing dry-cleaning and laundry services, personal care, death care, pet care, photofinishing, temporary parking, and dating services. Source: North American Industry Classification System, Sector 81.

6 *Reinventing the workplace to unlock the potential of gender diversity*, McKinsey, 2016; *Women in the workplace*, McKinsey, 2015; *Women at the top of corporations: Making it happen*, McKinsey, 2010; *Gender diversity in top management: Moving corporate culture, moving boundaries*, McKinsey 2013; *Female leadership, a competitive edge for the Future*, McKinsey, 2008.

7 *The five trademarks of agile organizations*, McKinsey, 2017; *Preparing for a new era of work*, McKinsey, 2012.

8 Survey carried between 2016 and 2017. Employees of companies are asked to evaluate 9 health outcomes and 37 managerial practices that extensive research has shown to be a company's capacity to deliver—over the long term—superior financial and operating performance.

Today, in Western Europe, women take on only

42%

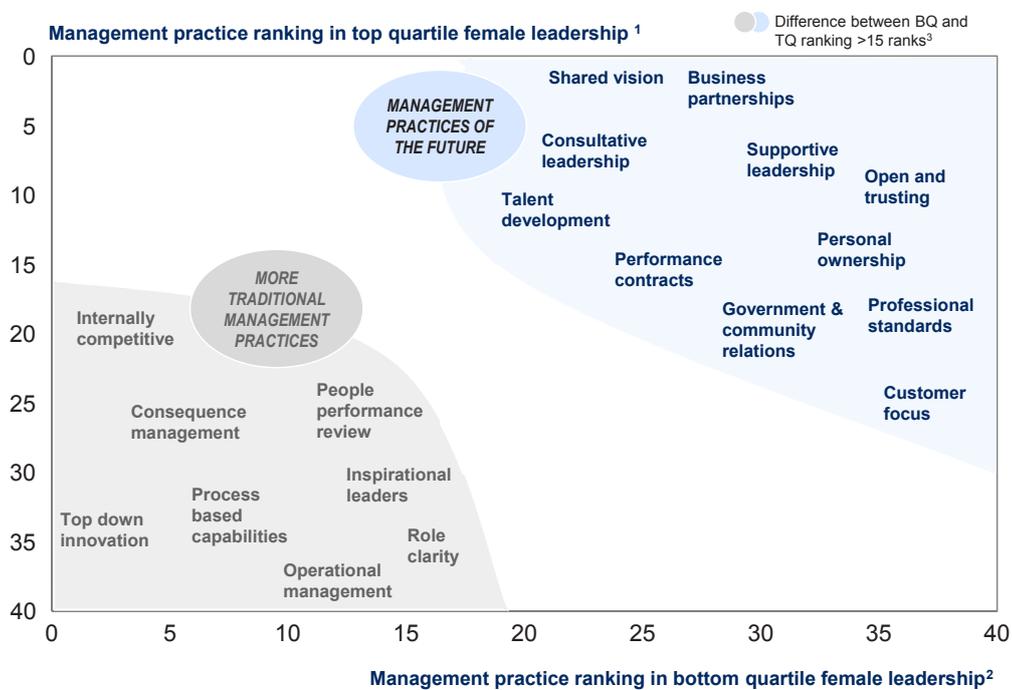
of the leadership skills deployed in the economy

creating open and trusting environments, and developing talent. Companies in the bottom quartile in their share of women in managerial and executive positions, on the contrary, rely more on traditional leadership styles, such as consequence management and top-down innovation (*Exhibit 8*).

EXHIBIT 8

Companies with a high share of female leaders are characterized by management practices of the future, while those led by a higher proportion of men are still strong on more traditional styles

Selected leadership styles in firms with high and low share of female leaders



¹ Top quartile: The companies in the top quartile in proportion of women in leadership positions

² Bottom quartile: The companies in the bottom quartile in proportion of women in leadership positions

³ Each of the 37 managerial practices (that impact a company's financial and operating performance) is ranked according to its level of importance in the company. The highlighted practices are the ones showing the largest ranking difference between the two groups (more than 15 ranking grades between TQ and BQ companies, in absolute values of rank difference)

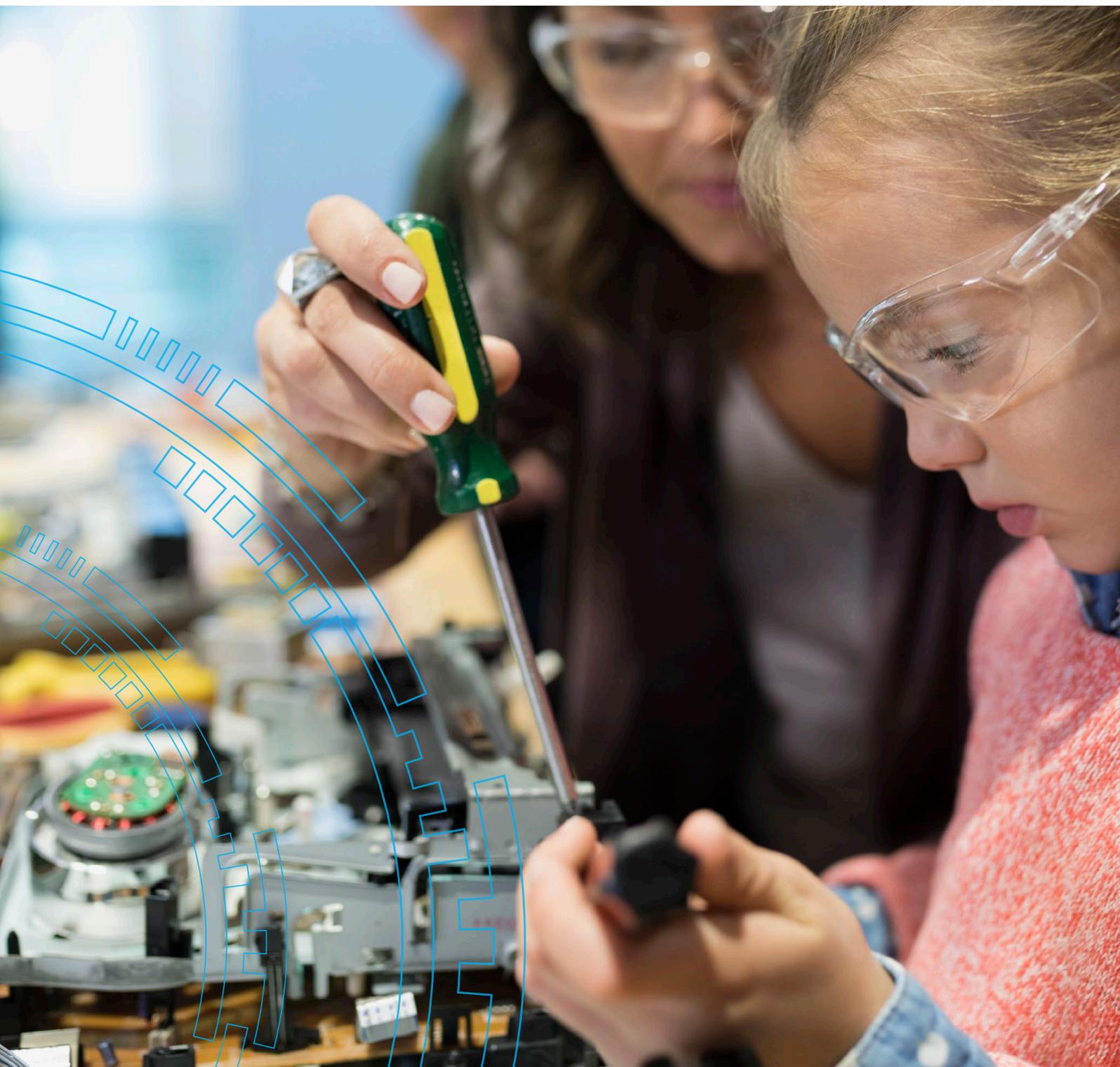
SOURCE: McKinsey, Organization Health Index database

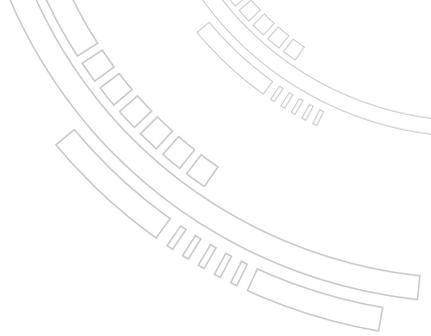
Developing the right skills in advanced technology and leadership will help women fill new positions in many sectors and occupations – and help them maintain the advances they have already made. This evolution can unfold only with the combined efforts of public decision-makers, business leaders and women themselves.



03

Priority actions to unlock opportunities and facilitate the necessary workforce transition





We believe that to maximize women's contributions in the labor force, workers, governments and public and private institutions need to act across five dimensions.

Leaders in government, industry and academia should spread the word – and help create a sense of urgency – about the need to master new skills to thrive in the future of work. To improve gender parity, companies, schools, government agencies and other institutions need to launch new reskilling programs and expand existing efforts to help women master the skills that will be most valuable. Those efforts can start early, such as encouraging more girls to pursue STEM subjects in school and consider STEM fields as they move toward adulthood. Public and private actors should also foster women's mobility across occupations, organizations and industries. Institutions of all kinds should help more women prepare for and move into leadership positions.

Empowering through transparency on future opportunities

Governments and public and private companies all need to take leading roles in defining how workers will be impacted and communicate broadly on anticipated shifts in labor demand. They specifically need to provide transparency – notably to women – on where pockets of growth will lie as some of them will emerge in different occupations and sectors from where women are present today.

Companies and other institutions should create transparency on which jobs and skills will be in short supply to guide employees to develop these critical skills and fill-in most needed jobs. For example, AT&T's Workforce 2020 Program alerts employees and potential applicants about the jobs at risk and the ones the company is trying hardest to fill, and the skills needed to do them. The company has also redesigned performance management to provide bigger rewards to people who acquire the skills most in demand.

Governments also have a role to play. For example, they could finance and publicize labor market research to illuminate the most important pockets of future job creations. Additionally, they could develop a range of targeted measures to persuade people and institutions to act. Australia in that matter is an interesting example. The country's "Apprenticeships Incentives Program," identifies all the skills in short supply in the labor market. It also provides corporations with incentives to train people in the skills required for top-priority jobs.



Level skill-building playing fields for both women and men

Governments and business leaders will need to design large-scale “reskilling” programs to help women move into new roles or new content areas at any point in their careers. To tap the full talent pool, including women, retraining programs should be highly inclusive and monitored consistently to track progress toward targets.

Governments need to shape “learning ecosystems” with level playing fields to protect gender balance and benefit women and men alike. People should be able to navigate this ecosystem easily and connect with a wide range of learning resources provided by public and private actors. Danes, for instance, can get career guidance at consultation centers around the country and pursue lifelong learning at dedicated research centers. An effective ecosystem should avoid biases towards certain sectors or professions where women or men are underrepresented. Training for future computer engineers may be designed to fit the current computer engineering population mostly represented by men and should also appeal and fit the needs of women.

According to a 2017 McKinsey survey of 1,500 public- and private-sector executives,⁹ 82 percent of those at companies with over \$100 million in annual revenue said that developing skills internally would be at least half the answer for addressing the growing talent shortage. More than 80 percent of respondents in Europe said they would need to retrain or replace more than a quarter of their workforces in the next five years “due to advancing automation and digitization.” Most respondents agreed that corporations should take the lead in this matter. Indeed, we believe organizations have a central role to play in designing creative reskilling programs that give women and men equal chances, especially in mastering technological skills.

Employees should have access to tools to identify skill development needs and the resources to develop them. The Workforce 2020 program at AT&T, for instance, includes an online self-service platform to help employees reskill and navigate among new job opportunities. Employees use the platform to assess their competences, identify skill gaps and resources to develop those skills, and find open internal positions. Companies should also set clear targets for gender parity in all the reskilling efforts, ensuring that men and women have the same chances to develop the technological skills required in the future.

To design and deliver the most effective reskilling initiatives, many companies will work closely with external experts, from industry associations and universities to unions. Such programs are already underway, ranging from massive open online courses (MOOCs) and apprenticeships to degree programs.

⁹ *Retraining and reskilling workers in the age of automation*, McKinsey, January 2018.



Foster more dynamic career paths for women

Hundreds of thousands of Western Europeans will need to reorient their careers as new job opportunities emerge, especially in fields such as engineering, where women are currently underrepresented. The average person will switch jobs far more frequently, and typical career paths will be far less linear.

Women will need to move more often across occupations, organizations and sectors. Mobility, a key strength in 21st-century economies, will require that men and women be able to develop new skills quickly and make transitions from one job to another and from one industry to another.

Companies will need to champion mobility for women within their ranks. They can also make sure that skills are transferable between organizations and across sectors. For that they can work with labor agencies and policy-makers to agree on specific skill definitions and qualifications and develop cross-sector training programs to develop those skills.

Governments and labor agencies can boost mobility by providing women in transition with financial support and services, such as childcare. Industry associations can do more to connect women with the right education, training and job opportunities.

Create pathways to STEM fields of education

Public¹⁰ and private¹¹ research suggests that women's under-representation in STEM education is related to narrow career perspectives – an explanation seems to stem from the fact that many men and women share an unconscious belief that STEM is more a “man thing.” Girls tend to follow paths where they perform significantly better than boys and thus prefer human health and social work fields where they outperform rather than science-related fields where they perform only as well as boys. A Microsoft study¹² suggests that girls do not associate STEM jobs with making an impact in the world, a key criterion in the choice of a career path.

Given the difficulty of retraining people already in the workplace for certain high-skilled occupations like engineering, government and industry should make concerted efforts to encourage more girls to study STEM topics and women to consider careers in STEM fields. Canada, for example, recently launched a “Choose science” campaign to encourage female participation in STEM disciplines.

¹⁰ *Education Indicators in Focus*, OECD 2017.

¹¹ *Using CSR and philanthropy to close the gender gap in tech*, McKinsey, 2018; *Women in STEM*, Kelly Services, 2015; *How to attract US women to sciences*, McKinsey, 2013; *Stereotype Threat and Women's Math Performance*, Spencer, Steele and Quinn, *Journal of Experimental Social Psychology*, January 1999.

¹² *Closing the STEM gap*, Microsoft, 2018.



While governments can communicate at the national level to shape a more attractive image of STEM-related fields of study for women and spur educational institutions to increase women's participation in those fields, companies and educational institutions are better positioned to help young women build STEM capabilities.

Companies, schools and universities need to raise girls' interest in STEM and help them learn more about relevant career opportunities. Exposure to STEM activities, women's communities and role models are critical motivational factors. Companies can bring those fields to life by designing courses with universities, welcoming female computer majors to internships, and funding national and local conferences. In the US, for example, the "Million Women Mentors" initiative aims to "spark the interest and confidence of girls and women to pursue and succeed in STEM careers and leadership opportunities."

Schools and universities can provide young women with more learning sources in technology. For instance, they can incorporate technological skills, such as in big data and SaaS learning, in fields where women are already engaged, such as in human health, and inversely enrich math and science courses with social science.

The biggest challenge is shaping girls' and young women's mindsets. Teachers and families need to help girls gain confidence in their ability to do as well as boys in science and mathematics – and help them understand the great need for more women in STEM-related fields.

Fix the leadership gap

Policy-makers and business leaders should double down on building a pool of female talent up to top management positions. These efforts will become increasingly critical, as women can play a decisive role in the evolution of management practices towards the "agile" ones best fitted for the future.

Progress will require a comprehensive ecosystem that encompasses six dimensions for action:

- CEO and management commitment;
- Transparency and indicator tracking;
- Programs for women's leadership development including relevant sponsorship and mentorship support and de-biased training and coaching;
- Diversity-enabling infrastructure including flexible working conditions, extended leave policies and back-to-work programs;

- Inclusive mindsets and behaviors;
- Involvement of men at all levels of organizations with a special focus on middle-management.

Many companies are mobilizing around the challenge and are taking actions on many dimensions of the gender diversity ecosystem, but this is a long-term, comprehensive change program and our previous research has shown that top management commitment and persistency over time are critical to get to results.

Some companies are joining forces. The FTSE 100 Cross-company Mentoring program brings senior women, chairs, and CEOs together through structured mentoring relationships.¹³

Governments are also doing more to help women rise into leadership roles. Germany advocates more flexible working conditions, for example, including flexible annual or lifetime working hours, telecommuting, job-sharing and sabbaticals. It is also designing a “family working time model” to allow parents to reduce their working hours to 80 percent for up to three years and receive compensation for part of the lost salary.



¹³ FTSE 100 Cross-Company Mentoring Programmes, www.mentoringfoundation.co.uk.



Conclusion

Our research shows that profound transformations across labor markets in Western Europe will present important new opportunities to improve gender parity in the workplace. With thoughtful, concerted action, government, industry and academia can help women contribute more, shape dynamic and satisfying careers, and lead organizations of all kinds to new heights.

Women will need large-scale and lifelong learning ecosystems and more inclusive working environments to develop and strengthen the skills that will be most in demand in the years ahead – and to fill the ranks of leadership.

The rewards to society could be significant: fully integrating women into the labor force could add as much as \$2.1 trillion to annual GDP in Western Europe and ease the talent crunch already becoming evident across industries. Germany, for instance, could close as much as a third of its coming talent gap by raising the share of women working full time to the level of countries such as Sweden.¹⁴

The future of work won't be only about academic degrees – practical skills will be vitally important and in great demand. Embracing the new “skill age” will help open doors of opportunity for women across Western Europe.

¹⁴ Susan Lund, James Manyika, and Sree Ramaswamy, *Preparing for a new era of work*, McKinsey Quarterly, November 2012.

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Acknowledgements

Project team and contributors

The project team comprised Sahil Tesfu, Sarah Seidl, Helene Baudon, Friedrich Schuler, Tanina Sehl, Celine Joly, and Nina Preschitschek.

We also acknowledge the contributions of other McKinsey colleagues for their valuable input and support, including Georges Desvaux – Senior Partner, Magnus Tyreman – Senior Partner, Eric Hazan – Senior Partner, Sandrine Devillard – Senior Partner, Lareina Yee – Senior Partner, Anu Madgavkar – Partner, Mona Mourshed – Partner, as well as Mark Krawitz, Tracy Nowski, Gurneet Singh Dandona, Michael Gubieski, Randy Lim, Rishi Arora, Birgit Ansorge, Julia Hessel, and Howard Tomb.

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Women Matter
November 2018
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