White Paper

HR4.0: Shaping People Strategies in the Fourth Industrial Revolution

In collaboration with Saudi Aramco, Unilever, and Willis Towers Watson

December 2019

This white paper has been published by the World Economic Forum as a contribution to a project, insight area or interaction. The findings, interpretations and conclusions expressed herein are a result of a collaborative process facilitated and endorsed by the World Economic Forum, but whose results do not necessarily represent the views of the World Economic Forum, nor the entirety of its Members, Partners or other stakeholders, including the reviewers.

Contents

Foreword

"

The digital revolution is a human revolution. While new technologies are what's driving the Fourth Industrial Revolution, ultimately, it is people who will bring it to life in businesses. As HR Leaders, we play a pivotal role in helping to lead our organizations to a new future of work - one that has the potential to be more inclusive, more purposeful and one which can deliver more positive impact to our people and our consumers. It is for this reason why I think there's no better time to be in HR. This framework is an important tool to help accelerate the redefinition of our function and profession, and I look forward to seeing how it is leveraged by business leaders globally.

Leena Nair
Chief HR Officer, Unilever

As we move deeper into the Fourth Industrial Revolution (4IR), we clearly see HR changing to reflect our role as a crucial business driver. Our success in the future of work will depend heavily on our ability to effectively prepare our workforce – by fostering a culture of reskilling, upskilling and lifelong learning.

Nabil Dabal
Executive Director, HR Department, Saudi Aramco

The Fourth Industrial Revolution and its significant implications for the future of work present the HR profession with a unique opportunity to redefine its mandate and further advance its mission-critical function by shifting from being a steward of employment to being a steward of work, while ensuring the continued relevance of the global workforce through the creation of a culture of continuous learning and reskilling.

Ravin Jesuthasan
Author and Managing Director, Willis Towers Watson

The Fourth Industrial Revolution (4IR) is blurring the lines between people and technology, fusing the physical, digital and biological worlds. The impact of those changes on the way people work and businesses produce value will span all industries, economies and societies and redefine the future of work. Businesses and governments will need to adapt to these changes and support the workforce transition at the same time. If managed well, the future of work may be one where many more people are able to fulfil their full potential.

HR 4.0, a framework for shaping people strategies in the 4IR, is an initial response to this challenge. In this White Paper, we examine the changing role of companies in shaping people strategies and the role of the human resources (HR) function as a key driver in defining how work is experienced, how it is done and how the workforce evolves. As businesses seek more holistic strategies to prepare for the future of work, CEOs are turning increasingly to the human resources function to evolve rapidly and adapt to the changing demands. HR professionals are finding themselves at the front line of helping their organizations and leaders to drive technology absorption, foster innovation, enable new work models and, ultimately, attract, retain and develop the workforce of the future.

The first part of this paper explores **why** the Fourth Industrial Revolution creates the impetus for transformation in people strategies and HR practices as well as the implications of specific drivers of change for organizations and their workforce.

The second part of the paper outlines **what** business leaders—including Chief People Officers / Chief Human Resource Officers (CHROs), CEOs and other C-suite leaders—can do to respond through six imperatives highlighted in this paper, including practical models and case studies.

The third part of the paper describes **how** organizations are already responding to the need for change, with examples of emerging roles, technologies and critical skills for the future of HR.

This paper is the outcome of a series of consultations with selected Chief Human Resources Officers and other experts to identify emerging challenges and a range of potential interventions to address them. It aims to start a conversation among business leaders on proactively managing the future of work through an empowered human resources function and deploying the technologies of the Fourth Industrial Revolution to improve employee experience and productivity. The authors are grateful to executive and expert support from Saudi Aramco, Unilever and Willis Towers Watson for this paper.

Key Findings

This White Paper aims to support business leaders in defining new people strategies in the Fourth Industrial Revolution and highlights the role of the human resources (HR) function and its professionals in delivering action against these strategies.

By managing the people implications of the 4IR for their organizations, HR leaders play a critical role in ensuring that businesses are able to successfully adopt and deploy new technologies—by supporting employees through adaptation and transition as their roles, tasks and skills change, and by integrating new worker and societal expectations to build attractive and inclusive workplaces.

We identify six key imperatives that business leaders, partnering with their human resources counterparts, will need to implement. The paper provides practical insights and a range of case studies for each imperative.

1. **Developing New Leadership Capabilities for the 4IR**: As organizations operate more distributed business models, leaders will need to lead from the edge, adopt the right technologies, drive a new vision of organizational culture and shape innovative people strategies for the future of work..

2. **Managing the Integration of Technology in the Workplace**: The way work gets done is changing. A growing area of responsibility for HR is to partner with CEOs and C-suite leaders to achieve the optimal combination of human workforce and automation to ensure a positive impact on the future of work.

3. **Enhancing the Employee Experience**: The increasing complexity of the workforce and the use of technology is calling for a change in the way work is experienced. HR plays a vital role in defining, measuring and enabling the meaningful employee experience in the 4IR.

4. **Building an Agile and Personalized Learning Culture**: HR plays a leading role in fostering a culture of lifelong learning in the context of declining demand for certain skills, the emergence of new ones and the requirement for talent to continuously learn, unlearn and relearn.

5. **Establishing Metrics for Valuing Human Capital**: The mutually beneficial relationship between the workforce, organizations and society make it essential for HR to create a compelling case for establishing viable and scalable measures of human capital as a key performance driver and continuously demonstrate the impact of its work on business performance.

6. **Embedding Diversity and Inclusion**: Changing social, economic and political forces bring an opportunity for organizations to profoundly advance inclusion and diversity. HR plays a pivotal role in promoting a sense of purpose and belonging in the workforce, and equality and prosperity for the communities and regions in which they operate.

Introduction

Managing a successful transition to a new world of work will require significant and well-coordinated efforts by both the public and private sectors. While governments will need to update education and labour policies, provide more support for reskilling and upskilling, and enhance social protection to help workers successfully manage their transition, businesses will also have to invest in their workforce through training, lifelong learning and efforts to foster diversity and inclusion.[1] How business leaders manage this transition will help to define a new contract between workers and companies, and determine whether the Fourth Industrial Revolution (4IR) leads to a positive outcome for society. The human resources function and its evolution thus shapes not only how relevant and forward-thinking people strategies are implemented inside companies; it also has broader societal implications. This paper aims to define the key ways in which human resources management must change within the 4IR and how the HR function can help deliver against these imperatives. This concept, HR 4.0, is critical for a changing context.

Technological and societal transformation together are creating new forces and a new context shaping the world of work. As innovation and speed become critical for growth and sustained competitive advantage, the integration of technology is central to new business models across industries and there is greater need for companies to understand and manage these shifts. Automation and digitalization are in turn transforming how work is done by substituting, augmenting and creating new tasks for workers. For example, task disruption means that the "human" share of labour hours will decline from 71% to 58% by 2022 for today's known tasks, while at the same time newly emerging tasks will create new work for people.[2]

As tasks and jobs transform, the skills required by the workforce will also change, making skills of the future a critical need for workers and employers alike. Reskilling and upskilling strategies will need to become increasingly important in enabling businesses to develop talent and to contribute to socially responsible approaches to workforce transition. Additionally, the emergence of the gig economy and globalization have blurred both organizational and geographical boundaries, leading to distributed workforces and a shift away from traditional employee-employer relationships.
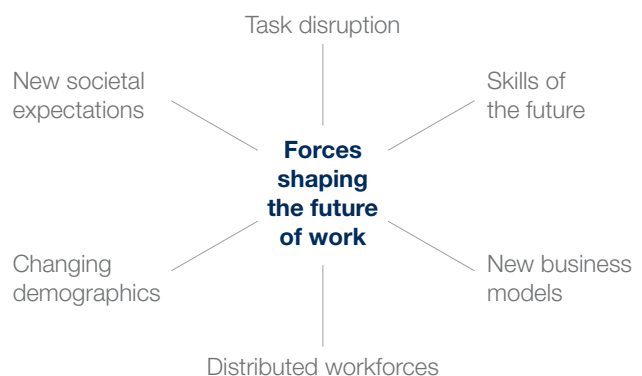
Changing demographics and new societal expectations of the workforce are also shaping business priorities. The workforce will be made up of five generations for the first time and women are now the majority of those with higher education across most developed and developing economies. Additionally, there is greater expectation on the part of workers that workplaces will be inclusive of all genders, races, religious affiliations, identities, cultures, and physical abilities. Emerging evidence of the different and potentially dispropor-

tionate impact of automation on diversity and inclusion in the 4IR is creating further impetus for embedding diversity and inclusion as a core tenet of business, with a clear moral and economic case.[3] In tandem, as the needs of each generation and diverse workforce groups vary and technological advances offer increased choice and flexibility, organizations are facing a shift away from a one-size-fits-all model towards hyper-personalization of the worker experience in the future.

These overlapping trends are moving rapidly and in parallel, creating a need for organizations to change how they unlock, manage and sustain human potential. HR leaders, along with their counterparts, must facilitate this shift in organizations and in parallel change their own practices. As the growing intensity of technological, social and economic forces bring people strategy to the top of an organization's priority list, companies must better balance operational excellence with a human-centric approach.

The policies and procedures that HR co-creates shape the employee experience and determine how well a company adapts to emerging business models. This includes rewards policies, how and what work gets done, and how talent is developed and trained. A people strategy must explicitly connect to the business strategy to address the multitude of challenges and changing trends that every organization faces. In addition, a people strategy impacts an individual's financial security, feelings of belonging, social stability, growth and well-being. The people strategy of an organization thus determines more strongly than ever before how a business thrives and how people fare in the 4IR.

Fig. 01 Forces Shaping the Future of Work

Task disruption

New societal expectations

Skills of the future

Forces shaping the future of work

Changing demographics

New business models

Distributed workforces

Source

HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Therefore, an organization and its leaders must shift their view of HR from an administrative function to one which:

→ Determines business outcomes through innovation, creativity, stability and agility of talent
→ Drives the connection between the company and the community
→ Influences positive societal outcomes in an era of transformation and disruption
→ Is a co-architect of the organizational culture
→ Is at the forefront of deploying technology in the pursuit of inclusion and efficiency

HR leaders will increasingly need to develop skills related to data analytics, understanding and helping others understand technology, systems thinking, design thinking, story-telling, understanding the emerging field of mapping jobs, skills and tasks, and conducting strategic workforce planning. While organizations are shifting their business models and transforming work and the workforce, HR professionals often find themselves caught between fulfilling their legacy role while aiming to play the leadership role required in the future. For example, over 50% of the respondents in a recent global survey said tolerating ambiguity is the most critical competency for a Chief Human Resource Officer (CHRO). However, only 18% of today's CHROs are prepared to meet the evolving needs to drive performance and capability and even fewer respondents say future CHROs are prepared for this need.[4] The six imperatives that are outlined in this paper, along with associated HR functions and skills and emerging best practices, can together serve as a starting point to support change in the people strategies of global organizations in the 4IR.

HR 4.0: Six Imperatives for the Workforce of the Future

Six strategic imperatives emerge in the context of the organizational and workforce drivers created by the Fourth Industrial Revolution (4IR). These imperatives form the foundation of a future-ready business strategy and create the guidelines for a CEO and CHRO to enable a positive transition to the future of work. A set of actionable practices as well as cultural shifts are addressed within each imperative; technical change alone will not be enough as culture determines an organization's formal and informal governing structure and the way work is done. A set of emerging roles that will underpin the HR function of the future are included in relation to each imperative below.[5,6,7]

1. Developing New Leadership Capabilities for the 4IR

The new world of work demands speed and flexibility—organizational models are changing while the business landscape is in flux. Technology provides businesses with new sources of insights, efficiencies and capabilities. The traditional leadership model of central control no longer fits. The skill sets required by leaders to manage the new organization have vastly changed. In today's complex work environment, leaders should lead with purpose and ensure the use of the tools of technology, culture, processes and structure. The promise of automation has been widely discussed. However, leaders need to be better equipped with the knowledge of the opportunities and risks that technology promises. The World Economic Forum's *Future of Jobs Report 2018* shows that 52% of companies noted 'leadership capability' as a major barrier for technology adoption in their organizations. Organizations that are more effective at implementing work automation were more likely to see improvements in customer experience, efficiency and competitiveness.[8]

Technology should enable the overall business vision. Implementing a range of technological tools for the sake of implementing the latest technology risks overwhelming the workforce. The readiness of employees to embrace changes to technology will be essential to leaders' ability to use this knowledge to inform their execution strategy. One recent study on the future of the CHRO found that only 36% of CHROs are prepared to work out how technology is changing work in the future. Furthermore, only 26% said they have the technical acumen to evaluate new technology. Reassuringly, participants plan to avoid working in silos and partner with Chief Information Officers (CIOs) and data and tech teams to understand how to best use technology and achieve the optimal combinations of humans and machines.[9]

The organization is becoming a hub of networked teams and talent that coalesces and evolves. The modern-day organization has transformed and moved away from largely static hierarchical constructs to team-based ecosystems. Leadership adaptability will be critical. On a 10-point scale, HR 4.0's community of CHROs rated their leadership team's readiness as 4 or 5 out of 10 (with 1 being not ready and 10 being extremely ready). Fifty-two percent noted that manager and leader capabilities were the major barriers to change. Decision-making power is being distributed to teams from the centre, in order to embed agility into the organization and drive innovation. The move to a modern-day organization requires a shift in culture driven by a re-distribution of governing mechanisms. Culture is the DNA of the organization. It sets the controls, policies and unspoken guidelines that drive the organization towards its objectives while satisfying stakeholders' needs. In the words of Leena Nair, the CHRO of Unilever, "culture is the new structure".

As leaders increasingly lead from the edges, they become the orchestrator of the fluid workforce, bringing together the right skills, talent and experiences to create value. Developing leadership capabilities in the current context will require that HR leaders move from their traditional model of leadership that is reactive, based on command and control, to a purpose- and values-driven model of leadership that is adaptive, agile, and focused on building the organizational culture and empowering the workforce of the future *(see Figure 2)*.

Fig. 02 The changing nature of leadership styles in an organization

Administrative leadership	>	Purpose-driven leadership
Reactive leadership	>	Adaptive leadership in uncertain contexts
Building teams	>	Building culture
Command & control	>	Orchestrator & coach
Centralize innovation	>	Co-create innovation across the workforce

Source
HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Leadership practices

i. Embrace and explain ambiguity

The pace with which technology is changing and the political, economic, and social factors influencing business decisions require business leaders to lead with the organizations' values and missions—a 'north star'—amidst a changing environment. New leadership capabilities must include the ability to embrace ambiguity individually and to help explain associated risks and uncertainties to the workforce.

ii. Combine operational management, technology integration and people management skills

Leaders will increasingly need to combine operational, technology and people related skills. For example, if CHROs are to partner with other leaders to proactively shape strategy, they will require strong business acumen skills. One recent survey of CHROs highlighted that the skills most lacking when recruiting HR talent were business acumen (41%), followed by the ability to move from strategy into action (28%).[10] Similarly, 63% of 1,246 businesses and HR leaders surveyed globally report that it is important that HR leaders have a depth of understanding and insight into the technological landscape.[11] Ensuring that leaders—particularly in HR—are well-equipped with knowledge of the benefits and risks of technology will be critical in balancing potential value with associated social costs.

iii. Use culture as the new structure

The new agile and alternative ways of working create an increasingly borderless organization, which in turn requires new mechanisms to hold teams together. Culture is the backbone of any organization and is a powerful mechanism to align a diverse pool of talent with the needs of the business. It acts as a way to unite the workforce and establish a cohesive way of doing things through common behaviors and attitudes. Leaders and HR must work together to co-architect the desired culture and subsequently nurture it as it

evolves. The desired culture of any organization must permeate throughout its formal and informal processes, evolving as the strategy evolves and staying agile to the requirements of the business.

iv. Use analytics as a key tool in the distributed organization

Emerging data sources coupled with new methods of using existing data provide businesses with a depth and dynamism in decision-making that has not previously existed. The combination of people and business data will be particularly useful in generating insights across the distributed organization. Some examples include using recently introduced HR tools such as platforms for matching skills with work in real-time and projecting future skills needs, curating learning experiences, and recruiting using AI to increase efficiencies and to decrease biases. However, existing issues with regard to infrastructure, lack of data governance and rapidity of exploiting data make this a challenge.[12]

Emerging roles that will underpin the HR function of the future

Cultural Ambassador

Cultural Ambassadors collaborate with business leaders to create, develop and embed the culture. They are enablers of change, using communications to bridge the gap between different generations, alternative sources of labour and different perspectives in the workplace.

Digital HR Lead

Digital HR Leads keep track of emerging HR technologies, and identify and partner with the most appropriate technology vendors and platforms for the organization. They are passionate about using HR technology to optimize processes and create positive experiences for talent while mitigating risks and possible negative implications.

2. Managing the Integration of Technology in the Workforce

The changing ecosystem of work is accelerating with the emergence of technology, the use of alternate employment models and the shift to flatter, more networked organizational structures. It creates the need to examine the human impact of the Fourth Industrial Revolution beyond the implications of the adoption of technology on the displacement of jobs. People and technology have a symbiotic relationship. The responsibility of new people strategies in the 4IR will be to design an optimal solution to balance people and machines.

According to the Forum's *Future of Jobs Report 2018,* the 'human' share of labor hours will go down from 71% to 58% by 2025. And nearly 50% of companies expect that automation will lead to a reduction in the full-time workforce by 2022. Both the private and public sectors are faced with adopting new technologies at an increasing pace. Human work is being simultaneously substituted, augmented and transformed. As jobs are reinvented, the socioeconomic standing of individuals is in flux and there is an increased sentiment of uncertainty.
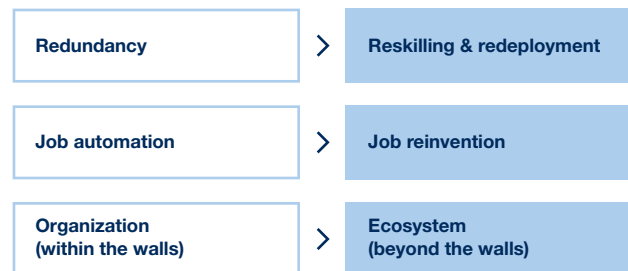
To ensure the required reinvention of jobs, HR must partner with business leaders to achieve the optimal combination of people and machines for the organization while ensuring the desired impact on broader society. Only 36% of CHROs surveyed say they are prepared to think about how automation can be used to execute work in the future.[13] CHROs must ensure they resist the temptation to "lead with the latest technology" and "lead with the work instead". Implementing technology for the sake of it will not benefit the business or the workforce as it could cause confusion, lead to social unrest, and an inadequately skilled workforce. The role of the CHRO going forward should be to partner with the CEO to create and implement a strategy that is synergistic between the business and the workforce.

Adding to the complexity are alternate employment models giving way to new employee-employer relationships in the form of the open talent economy and the larger ecosystem of livelihoods that any company sustains. These are becoming more prevalent: 1 in 7 workers is self-employed and 1 in 9 employees is on a temporary contract.[14] The increase in contingent workers initially brought the promise of reduced costs and flexibility to scale workforces up and down. At the same time, the growing size of the external workforce, demand for emerging skills and pace of transformation due to technology is changing how organizations view and manage the value that is brought by alternate models of work. In 2017, 13% of companies in North America used online staffing platforms, and a further 21% were considering using such platforms over the next two years (up from 3% and 1%, respectively, just five years earlier).[15]

The changing nature of the work ecosystem requires that leaders move from their traditional model of focusing on redundancies and job automation, while working within the organizational "walls". They should focus instead on reskilling, redeployment and job reinvention, while working in an ecosystem that has permeable borders *(see Figure 3).*

Fig. 03 The changing nature of how organizations orchestrate the work ecosystem

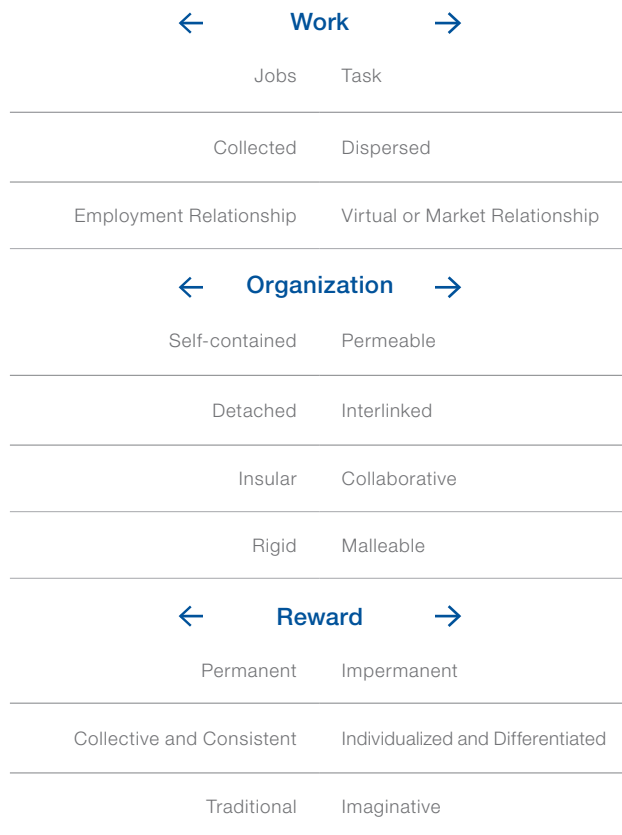| Redundancy | > | Reskilling & redeployment |
| Job automation | > | Job reinvention |
| Organization (within the walls) | > | Ecosystem (beyond the walls) |

Source
HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Leadership practices

i. Build strategies for job reinvention, reskilling and redeployment of talent

Workforce planning and staffing for the future must accommodate different employment types, skills and the speed at which jobs are changing. This will in turn impact how work is organized and rewarded. The framework in Figure 4 illustrates the changing nature of work, the impact on the organization and the implications for rewarding talent. The left side of the framework shows traditional employment. Work is constructed into jobs, collected at one time and within a singular space, and executed through an employment relationship. The organization is self-contained, detached, insular, protective, and has a rigid shape. The reward package is permanent, collectively consistent, and uses traditional elements (money, hours, working conditions, etc.). The right side of the framework shows a world beyond employment. Work is deconstructed into tasks, dispersed in time and space, and executed through many virtual and market relationships other than traditional employment. The organization is permeable, interconnected, collaborative and can change in shape. The reward is impermanent, individually defined, and uses imaginative elements (game points, reputation, mission, reskilling/upskilling, etc.).

Fig. 04 The changing nature of work, its impact on the organization and the implications for value exchange between organizations and talent

←	Work	→
Jobs		Task
Collected		Dispersed
Employment Relationship		Virtual or Market Relationship

←	Organization	→
Self-contained		Permeable
Detached		Interlinked
Insular		Collaborative
Rigid		Malleable

←	Reward	→
Permanent		Impermanent
Collective and Consistent		Individualized and Differentiated
Traditional		Imaginative

Source
Boudreau, Jesuthasan & Creelman, 2015

ii. Identify reskilling pathways for talent whose work is being transformed by automation

In a world where automation is increasingly changing skill requirements at a much faster rate, the need for continuous reskilling becomes ever more essential. To fully embrace automation and ensure the continued relevance of human labour, the four-step process illustrated in Figure 5 may help HR "lead with the work" and ensure the optimal combinations of humans and machines.

iii. Orchestrate a combination of actions to address the impact of automation

Automation will either substitute, augment or transform work, and there will consequently be the need for reskilling and upskilling. A variety of actions can be taken either simultaneously or in overlapping efforts to ensure the continued relevance of the workforce in the face of these changes and should not be considered separately from one another. As illustrated in Figure 6, businesses that have performed well—specifically, that have achieved the top quartile in profitability, revenue, customer satisfaction and market share for five or more years relative to their industry peers—pursue a wider variety of actions than lesser performing companies. They are more likely to empower employees to identify work automation opportunities, enhance leadership and identify specific upskilling and reskilling pathways than low performing businesses.[16] All stakeholders should be considered—including leaders, managers, employees, unions and work councils—throughout the transformation. Open communication and co-reinvention of jobs with stakeholders, is one critical example.

Fig. 05 Reinventing jobs: A four-step approach to achieving the optimal combinations of humans and machines, and ensuring the continued relevance of the workforce

Deconstruct Jobs
Deconstruct jobs into their activities and classify the tasks so all the type of work in the job is now broken down.

→

Reevaluate
Assess the best way to automate tasks and redeploy them by alternate means (technology and/or human-automation solutions).

↑   **Reinventing Jobs**   ↓

Reskill Talent
Identify skills needed for the future version of the work and reselling pathways for talent whose work is being transformed by automation.
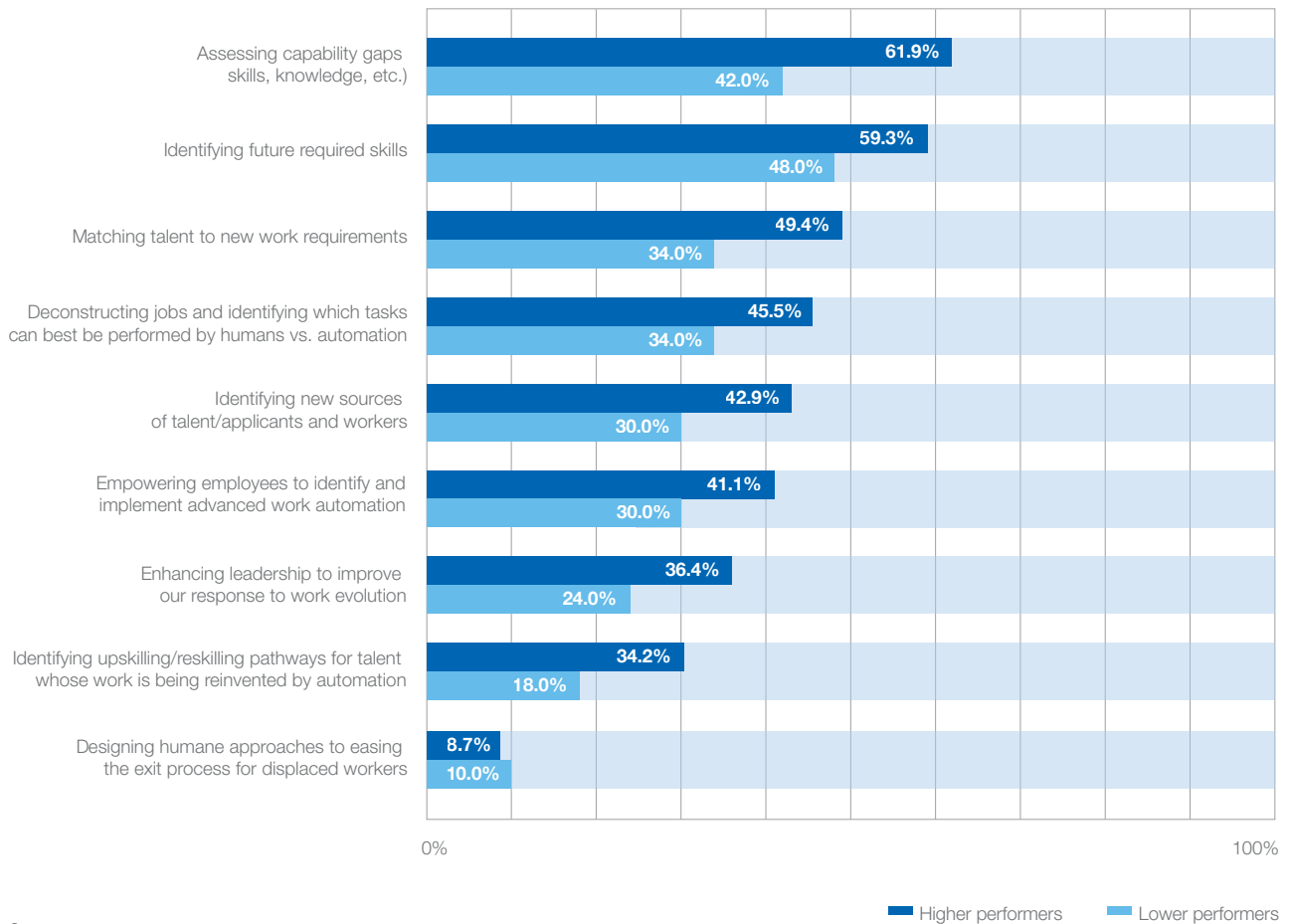
←

Optimize Work & Reconstruct Jobs
Look at the activities collectively and reconstruct into (new) jobs where it makes sense, taking into account: the new means of accomplishing work, and what the new work distribution between talent and technology requires.

Source
Jesuthasan and Boudreau, 2018

Fig. 06 Share of respondents taking action to prepare for advanced work automation

Action	Higher performers	Lower performers
Assessing capability gaps (skills, knowledge, etc.)	61.9%	42.0%
Identifying future required skills	59.3%	48.0%
Matching talent to new work requirements	49.4%	34.0%
Deconstructing jobs and identifying which tasks can best be performed by humans vs. automation	45.5%	34.0%
Identifying new sources of talent/applicants and workers	42.9%	30.0%
Empowering employees to identify and implement advanced work automation	41.1%	30.0%
Enhancing leadership to improve our response to work evolution	36.4%	24.0%
Identifying upskilling/reskilling pathways for talent whose work is being reinvented by automation	34.2%	18.0%
Designing humane approaches to easing the exit process for displaced workers	8.7%	10.0%

■ Higher performers ■ Lower performers

Source
Institute for Corporate Productivity (I4CP), 2019

iv. Build a talent ecosystem encompassing alternative work models and employ different methods of finding needed skills

Talent has historically been viewed as organization-centric and limited to those on the company's payroll. Talent is a competitive advantage for the business and developing it is a cost. However, the loss of talent is not only a loss of skill, but also of the behaviors that drove work and value-creation in addition to the cultural fit.[17] As alternate methods of work are increasingly used, coupled with a scarcity in emerging skills, the way businesses view and manage their workforce must change. Leaders must consider all talent (employees, independent contractors, gig workers, etc.) in their people strategy and improve their visibility of the skills and capabilities available in the external workforce and associated costs. The use of external workers brings access not only to skills that are needed to drive strategic business goals, but it can bring diversity of experience and skills that can be transferred internally and be accretive to organizational culture. As the gig economy continues its growth, companies are also increasingly using digital labour platforms to source talent in contingent online work arrangements, as well as undertake 'microtasks'. Use of digital labour platforms—where work is completed online rather than in person—opens up a global talent pool to companies. While the overall volume of work remains small compared to traditional contingent staffing arrangements (such as sourcing temporary workers locally from staffing agencies), growth is expected to be rapid.

Emerging roles that will underpin the HR function of the future

Head of Work Reinvention and Reskilling

The Head of Work Reinvention and Reskilling leads the effort to map the skills of the current workforce, reinvent jobs, identify future skills required and optimize how work is done. They champion the view that "no one is left behind" due to technology and automation in the 4IR.

Head of Relevance and Purpose

The Head of Relevance and Purpose looks to continuously align the interest of the organization with those of its communities and other stakeholders through technology, culture and processes. They work closely with governments, policy-makers and academia to achieve optimal combinations of technology and humans, and ensure the desired impact on society.

3. Enhancing the Employee Experience

The workplace is an increasingly complex environment with a multigenerational workforce and various alternative methods of work. The employee experience as a long-standing metric in evaluating workforce engagement is increasingly considered as a way of building long-term success. According to research conducted on 120 organizations, those with high-performing employee experience outperform the sector average return on assets by 2%, return on equity by 3% and gross profit margin by 12%. Over the mid-term, they outperform the sector average three-year revenue growth by 4% and the three-year change in gross profit margin by 4%. In short, high-performing employee experience is a predictor for financial performance in the short- and mid-term.[18]

The employee experience is impacted by automation and digitalization, forcing organizations to manage work in an agile way with the optimal mix of employees, non-employees and technology. Organizations are increasingly being seen as stewards of social responsibility by employees, customers and society as a whole. In this context, a traditional manager-employee dynamic that focuses on rewards and basic support is no longer fit for purpose. The workforce demands a connection to the organization and meaning in their work.[19] HR must expand its view of the employee experience to a broader, more holistic way of defining, measuring and setting the employee experience in the 4IR. Four critical dimensions of the employee experience are: 1) connection with colleagues and trust in leadership; 2) individual growth and reward opportunities; 3) meaningful work that aligns with employees' values and contributes to a higher purpose; and 4) occurring in an environment that supports productivity and performance.[20]

Questions remain as to who is responsible for the social safety net of employees in alternative work models. They are typically not offered the same level of social security as full-time employees, but it is as critical to their long-term health and well-being. It is important that people strategies consider these broader societal questions as those who implement these strategies pursue the optimal solution for delivering work within the organization.

The changing nature of the workforce requires that leaders move from their traditional model of focusing on employee engagement and financial reward for full-time employees only within the organization. Organizations need to create, with strong purpose, a holistic and meaningful employee experience for all talent *(see Figure 7)*.

Fig. 07 The changing nature of how organizations build employee experience for the next generation of talent

Employee engagement	Holistic employee experience
Financial reward	Purpose and meaning
Full-time employees	All talent
Organization	Individual, organization and society

Source

HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Leadership practices

i. Create a human-centric, holistic and purposeful employee experience

Many elements make up the employee experience, some of which need to be recalibrated to ensure a more holistic approach that is aligned with business priorities. Others, such as "purpose", must be redefined. Historically, purpose was gauged by the feelings around the strategy of the business. Now, purpose is the act of leaders providing meaning in the workplace and inspiring the workforce on the future direction of the company. The increased focus on the social organization is shifting this meaning to societal purpose and impact of the organization. HR plays a pivotal role in promoting a sense of purpose and belonging among individuals in the workforce, as well as equality and prosperity for the communities in which the organization operates and beyond.

ii. Rethink and invest in employee well-being

While engagement levels in wellness programs have been declining over the past few years, employers are re-thinking the need for a more robust integrated well-being strategy that supports individuals in their moments that matter. An integrated wellbeing strategy provides for the individual through programs in the areas of physical, emotional, financial and/or social wellbeing.[21] These are embedded in an organization's culture and overall purpose. Programs and solutions are provided across the well-being spectrum, meeting the employee and their family where they are, whether healthy or high risk. For instance, an employer with an employee starting a family would take a holistic view of well-being that would include the design of the medical plan, programmes to help them through their emotional state, financial support to help plan for additional expenses and future savings, and work groups and manager effectiveness to help the new parent feel supported and connected at work.

There is an increasingly significant emphasis on developing an emotional well-being strategy—a holistic strategy

that includes programmes and interventions at every point on an individual's emotional spectrum, from healthy to critical.[22] Employee Assistance Programs (EAP) are core to the foundation of providing programmes for emotional well-being but are only one solution. More and more, employers are leveraging analytics to inform their decisions on these types of programmes as well as culture changes. Analytics include measuring employees stress levels (and their impact on health care costs), productivity and engagement levels to provide strategic solutions such as sleep programmes, manager effectiveness and evolving the company culture around emotional well-being. Fifty percent of adults will be diagnosed with mental illness at some point in their lifetime:[23] Taking care of critical and crisis situations is also a part of a holistic strategy.

iii. Align the employee experience with the agile operating model

There are an increasing number of organizations that are moving towards project-based work.[24] And there are many considerations before moving to an agile operating model, such as work processes and policies that allow for working in teams, like flexible working and rewards. Many models of agile and flexible working processes are in place to allow for working beyond borders, often facilitated by collaboration websites or other tools that allow for virtual teams to gather. However, flexible rewards are a more recent concept. Faced with a multi-generational workforce and a mosaic of circumstances and expectations per employee, organizations can add to the employee experience by adding flexibility in rewards and incorporating all reward components into their offerings.[25] This could include salary and any other incentive pay, and is often expanded to include benefits and, more recently, well-being, career development, mobile devices, financing and transport, to name a few other popular options.

iv. Use technology to engage employees

HR professionals play a vital role in defining, setting, measuring, and shaping the employee experience. Historically, the employee experience has been measured in regular intervals either annually or bi-annually, through structured survey processes, and largely focused on assessing engagement. However, this approach is no longer fit for purpose. The importance of the employee experience and the critical role it plays in executing the business model requires more frequent, alternative measurement and a true partnership with leadership. The use of new methods and digital tools enables the ability to receive real-time information, building risk mitigation plans, creating development plans, and targeting certain demographics or teams, if appropriate. However, organizations must avoid a "plug-and-play" approach as there is a risk of oversaturating the workforce with digital tools and surveys. Although they are designed to be simple and straightforward, the introduction of multiple easy-to-use tools and quick surveys creates fatigue and employees can feel overwhelmed. Ensuring continuous talent engagement through digitalization requires a cohesive narrative.

Emerging roles that will underpin the HR function of the future

Employee Experience Specialist

The Employee Experience Specialist focuses on all the touchpoints in the talent lifecycle, including performance management, reward, benefits and training through the lens of the employee experience. They are responsible for gathering feedback, analysing and championing the employee experience.

Bot Monitor

As chatbots become a more prevalent part of how employees engage with the organization (questions, applying for jobs, access to policies, collaborating/connecting with colleagues, etc.), there is a growing need for the capability within HR to adopt, manage, monitor and train these bots— which are increasingly the most visible and critical element of how the employee experience is shaped.
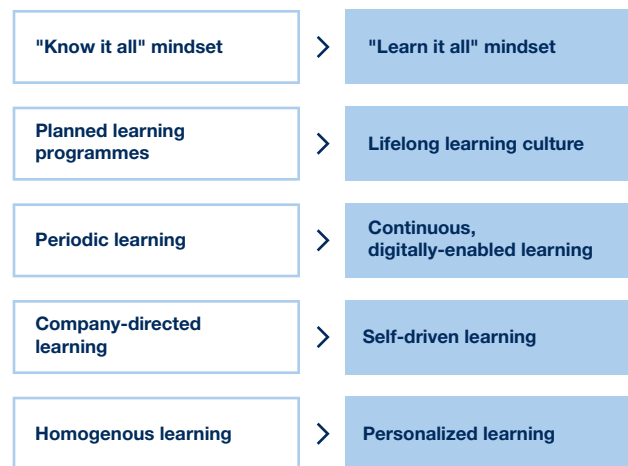
4. Building an Agile and Personalized Learning Culture

Significant skill disruption changes the way in which organizational learning and development are viewed and operationalized. The emergence of new skills and the requirement to learn, unlearn and relearn skills faster and more frequently is a top concern for organizations and governments. The workforce now rates the opportunity to learn among the top reasons for taking a job.[26] Changes in technology, longevity, work practices and business models have created a tremendous demand for continuous, lifelong development. As learning moves from the fringes to the centre of the talent experience, leading organizations are taking steps to deliver learning to their people in a more personal way, integrating work and learning more tightly with each other.

CHROs need to think of additional solutions to supplement the new tools available for learning. One recent survey found that 94% of HR leaders believe it is a priority to move from episodic training to perpetual reskilling to enable a nimble workforce and respond to the changing nature of work, while only 18% indicate they are prepared to truly drive significant reskilling of the workforce, which highlights the perception that considerable investment is required for reskilling and the need to prioritize learning cultures.[27] Businesses need to use the momentum created by societal and technological advances to pro-actively shape a culture of lifelong learning and curiosity, while governments need to put policies in place to accelerate this effort. Currently, only 20% of employees demonstrate effective learning behaviors.[28] Since behaviors are linked to culture, it is essential for organizations to shift to a true culture of lifelong learning through communication and change management activities.

Societal and technological advances are playing a significant role in shaping how people learn. While learning and development professionals largely define employee education, there is a preference for independent learning across age groups from Millennials to Baby Boomers.[29] Experiential learning is most beneficial for employees. It enables them to discover and refine their job-related skills, make decisions, address challenges, learn from mistakes and receive feedback. Employees with highly transferable skills are the most resilient to the advent of new technology, including skills such as communication, empathy, critical thinking, problem solving and collaboration, all of which enable lifelong learning and intellectual curiosity. Low-skilled jobs are the most at risk from automation and there needs to be an effective system for an agile and personalized lifelong learning, offering opportunities to the low-skilled.[30] The solution is not only reskilling on technical skills for a specific new job but focusing on longer-term employability by upskilling with more universally transferable skills. The changing nature of how learning is approached in an organization requires that learning moves from the traditional mindset of "knowing it all", with planned learning programs, to an agile culture of lifelong learning that is continuous and digitally-enabled, self-driven and personalized *(see Figure 8)*.

Fig. 08 The changing nature of how learning is approached in an organization

"Know it all" mindset	>	"Learn it all" mindset
Planned learning programmes	>	Lifelong learning culture
Periodic learning	>	Continuous, digitally-enabled learning
Company-directed learning	>	Self-driven learning
Homogenous learning	>	Personalized learning

Source

HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Leadership practices

i. Foster a culture of lifelong learning and shared responsibility

Technological advances and the personalization of work have given the workforce many different tools at their fingertips. Ranging from micro-learning to Massive Open Online Courses (MOOCs) to more traditional models of training, organizations can easily target learning initiatives or have a full range of courses for their workforce. There are even initiatives to gamify learning objectives and there is no short supply of tools that organizations can use. However, the biggest challenge for organizations is to convince and inspire the workforce to *use* the tools. An increasingly popular solution among leading organizations is to show employees how work and the skills required to perform it are shifting, highlighting the gaps relative to their own skills. Concrete learning opportunities can then be presented to close those gaps, firmly placing the control and accountability in the hands of the individual. The workforce must also be empowered to prioritize learning among the competing responsibilities they have in a workday. Leaders, such as the CEO and line managers should display behaviors that highlight the importance of learning, intellectual curiosity, and taking responsibility for one's own learning journey. Otherwise, forcing learning objectives and tools on the workforce could backfire, particularly when perpetual learning is required to keep up with fast pace of emerging skill demands

ii. Engage and pro-actively manage employees in at-risk jobs

In a workplace disrupted by technology where the half-life of skills continues to shrink, tasks are being substituted, augmented and created by automation. Organizations and workers alike must find a way to reskill and upskill in this era of perpetual reinvention. Among those who will be displaced are those who are extremely motivated to develop new skills

to meet evolving requirements. Their motivation to learn and existing knowledge and experience in working in an organization make them key talent to retain. In addition, the loss of talent is not only the loss of skill, but a loss of an often difficult to find element – attitudes and behaviors that are potentially aligned to the company culture and values.

The failure to retain and reskill or upskill displaced workers is to the detriment of the regional and global workforce. Displaced workers, without the help of organizations, will depend on the state or their own financial means to reskill or upskill. This could cause undue financial, social and emotional stress, leaving productive talent out of the workforce and negatively impacting their livelihood and well-being. Governments and businesses must partner to find optimal and pro-active solutions. An emerging framework for upskilling and reskilling is the use of mobility programs to create fluidity in the workforce. Individuals are skilled for adjacent or non-adjacent roles. They gain varying experiences and stay in the workforce, while adding value to the business through their different experiences.[31]

iii. Unlock the learning mix that is right for the organization

The same processes and policies which enable strategy must be used to allow for and communicate the importance of a culture of lifelong learning. A traditional way of signaling the importance of learning is by connecting it to organizational reward programmes. This is increasingly being done through focused skills-based pay programs. A commonly used learning and development model is the 70-20-10 rule, where 70% of learning is done through on the job experiences, 20% is through informal learning from interactions with others, and 10% is through formal learning. Organizations should revisit this rule and understand its appropriateness in meeting the needs of the business. The balance between structured and unstructured learning can be redefined through the various new ways of learning offered by technology. However, given the effectiveness of experiential learning, other solutions should be explored, such as hiring external experts for defined periods of time to work directly with employees to transfer skills and the use of virtual and augmented reality (VR/AR).

iv. Track and measure skills in the organization

The value and effort behind lifelong learning is significant, and emerging platforms, tools and methods are simplifying what has historically been difficult to track. Understanding the skills available in your workforce gives you the ability to match your talent to work much more effectively and also understand existing and potential skills gaps. Governments can also benefit by collaborating closely with businesses to understand skills gaps and work with educators to pro-actively shape the education system to better prepare the workforce for the future by using this information. Individuals, in turn, are given opportunities to display their skills either publicly or within their organization and understand skills gaps relative to emerging demand and then shape their own learning pathways. Internal social media or mobility platforms are increasingly being used as ways of tracking learning, by

describing the skills accumulated through structured and non-structured learning and development initiatives. Some platforms use self-reported skills, while others require that newly added skills be verified by managers.

Emerging roles that will underpin the HR function of the future
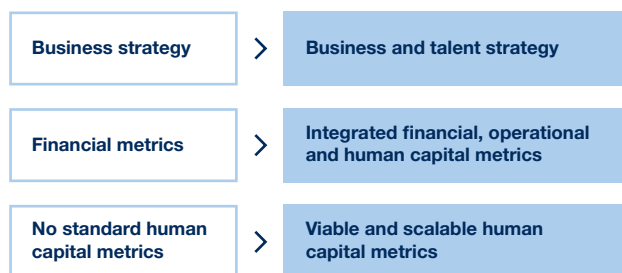
Chief Learning Officer

While not a new role by any means, as learning moves from being at the fringes of the employee experience to becoming the very heart of it, the Chief Learning Officer becomes a critical and integral part of the leadership team. The Chief Learning Officer uses their knowledge of the adult learning process and passion for lifelong learning to organize and implement upskilling, reskilling and personalized learning. With an enhanced suite of digital tools, they empower people to take ownership of their own careers in the current workforce and beyond.

5. Establishing Metrics for Valuing Human Capital

Increasing investment in the workforce is critical for worker well-being and enhancing business performance. Healthy organizations which invest in their human capital dramatically outperform their peers.[32] Financial metrics can help conceptualize organizational health; while human capital metrics have been used for some time, they are often considered separately and lack both internal and external benchmarks. Adding to the complexity is the plurality of means for getting work done which makes it difficult to get to a comprehensive comparison between the various sources of work (employees, contractors, alliance partners, etc.), both in terms of investment and return.

While there is almost unanimous agreement from business leaders and investors alike that human capital is a key driver of performance, the lack of a standard methodology and rigor reduces visibility both for within and outside the business on the value, health and progress of the workforce. There is a compelling case for establishing viable and scalable measures of human capital, requiring engagement and collaboration with various leaders across the business, coordinated by the HR and finance functions. Additionally, such metrics must be better applied in tandem with financial and operational metrics to create a clear business case for valuing human capital *(see Figure 9)*.

Fig. 9 The changing nature of how organizations measure organizational health and human capital

Business strategy	>	Business and talent strategy
Financial metrics	>	Integrated financial, operational and human capital metrics
No standard human capital metrics	>	Viable and scalable human capital metrics

Source

HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Leadership practices

i. Use new technologies and data to develop new human capital metrics

According to research conducted in 120 global organizations, high-performing employee experience companies outperform stock market indices, almost tripling returns over the long term.[33] The various new tools available, such as predictive analytics, provide an opportunity to drive human capital decision-making with robust data. By partnering with the IT function, the HR function can use data and analytics to identify opportunities, test business impact and prototype options, gain insights and continuously evolve.[34]

ii. Create external reporting on the value of and value added by human capital

The International Standards Organization has released a new standard for human capital reporting to help measure the true return on human capital investment, creating comparable metrics that can be benchmarked. It measures important human capital issues including ethics, diversity, leadership, organizational culture and health, skills and capabilities and succession planning. It is a relevant set of standards for internal stakeholders, including business leaders and HR, and external stakeholders, including governments, prospective workers, the community and investors.[35]

iii. Include all forms of human capital within the organization's metrics

Most human capital metrics consider only employees but human capital costs must include the cost and value across the full range of ways work is organized and resourced, including those related to technology implementation to replace or augment work.[36] The Total Cost of Work (TCoW) includes Total Labour Cost (FTEs + free agents + talent platforms + volunteer engagement costs) + vendor cost (outsourcing cost + AI/robotics vendor cost) + annualized Capital Charge for Capitalized investment (annual cost of capital charge for AI/robotics + alliances). The Return on Work (RoW) equals the Total revenues/TCoW. Coordinating the use of these metrics requires collaboration between HR and other stakeholders such as finance, procurement and corporate development.

Emerging roles that will underpin the HR function of the future

Head of Insights

The Head of Insights leads the effort to collect valid and valuable insights on human capital. They use data and insights to tell compelling stories, drive decision making through robust measurement and reporting and identify the quantitative and qualitative business case for human capital investments.

HR Data Scientist

The HR Data Scientist is an expert on people data and systems. They use the vast amount of HR data to analyse employees and their experience, reduce hiring bias, and identify performance drivers and avenues to better manage the workforce.
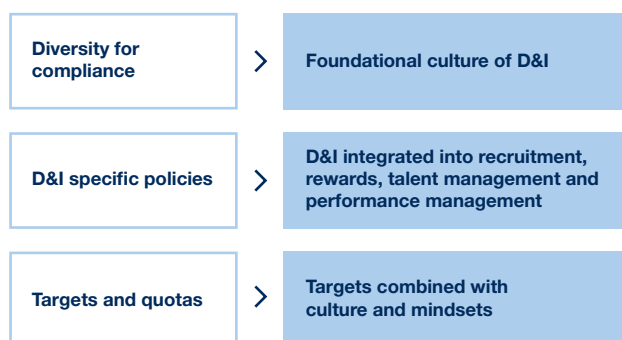
6. Embedding Diversity and Inclusion

Diversity is derived from a mix of demographics, skills and experiences, while inclusion unlocks the potential of a diverse workforce. Inclusion is defined as fairness and respect, feeling valued and a sense of belonging, as well as being empowered and growing.[37] Diversity and inclusion have traditionally been viewed separately from operational excellence despite evidence about the centrality of diversity to business performance. For example, 85% of CEOs whose organizations have a D&I strategy say it has improved their bottom line.[38] However, while 87% of leaders recognize the need to build a fair, impartial, inclusive and collaborative workforce, they are challenged in making this a priority due to the pressure of delivering short-term results.[39]

Organizations have begun to apply tangible goals, targets and quotas to promote diversity and started to hold leaders and managers accountable against these. However, while this has improved diversity, there is concern that it is driven by a compliance mindset and that systemic biases persist while inclusion remains elusive. For example, only 1 in 3 women report male senior leaders supporting their advancement compared to 2 in 3 men.[40]

Moving forward, organizations will need to rewire their culture to inspire, allow for and encourage both diversity and inclusion. Research shows that creating a culture of equality uncovers the key drivers of a workplace culture in which everyone can thrive.[41] Organizations with inclusive cultures are two times as likely to meet or exceed financial targets, three times as likely to be high-performing, six times more likely to be innovative and agile, and eight times more likely to achieve better business outcomes[42] Organizations must move their D&I approach from one that is set up to meet compliance requirements to creating a culture of D&I that is infused into every aspect of the organization – integrated in recruitment, reward, performance management, with a focus on changing behaviors, attitudes and mindsets *(see Figure 10)*.

Fig. 10 The changing nature of how D&I is approached in an organization

Diversity for compliance	> Foundational culture of D&I
D&I specific policies	> D&I integrated into recruitment, rewards, talent management and performance management
Targets and quotas	> Targets combined with culture and mindsets

Source

HR 4.0: *Shaping People Strategies in the Fourth Industrial Revolution*, 2019

Leadership practices

i. Proactively manage diversity in alignment with business growth

D&I must be an explicit part of the business operating model and, as the architect of organizational culture, the CHRO must align D&I activities and strategies to the future business strategy. As an example, the World Economic Forum's Framework for Hardwiring Gender Parity in the Future of Work invites companies to identify five emerging in-demand roles and commit to parity in recruitment and reward across such positions by 2022.[43]

ii. Embed D&I into concrete steps in culture and process

A single narrative on D&I supported by clear processes and stories and shared across multiple channels is necessary. The definition of what a diverse workplace is will act as a guide for the organization and the CHRO must translate D&I into a set of desired behaviors and values. Additionally, all leaders and managers must be persistent in showing the desired behaviors to set an example across the workforce.

iii. Use data analytics rigorously to measure diversity and assess inclusion

The use of data, technology and systems in an ethical, fair and trusted way can create jobs and roles to train systems and monitor decisions to make sure they are fair.[44] Fifty-seven percent of businesses and HR leaders surveyed globally say that it is important to use data analytics to de-bias hiring and rewards.[45] An upcoming toolkit by the World Economic Forum will outline the next-generation D&I technologies that can address bias in the workplace.

iv. Engage with stakeholders and knowledge sources beyond the organization

As many organizations seek to improve their diversity and inclusion practices, it is imperative that they learn from each other to accelerate the pace of change. Additionally, as policy-makers begin to regulate outcomes, there is an imperative for organizations to benchmark their performance externally. For example, in France, a financial penalty is applied if the gender pay gap does not improve to reach the minimum threshold over a pre-defined period of time. As the public and the private sector move towards embedding diversity and inclusion, there are also new emerging guidelines. The UK, for example, has published a list of effective and promising actions to close the gender pay gap *(see Figure 11)*.

Fig. 11 UK Government's list of recommended actions to close the gender pay gap

Effective actions	Promising actions	Actions with mixed results
Include multiple women in shortlists for recruitment and promotions	Improve workplace flexibility for men and women	Unconscious bias training
Use skill-based assessment tasks in recruitment	Encourage the uptake of shared parental leave	Diversity training
Use structured interviews for recruitment and promotions	Recruit returners	Leadership development training
Encourage salary negotiation by showing salary ranges	Offer mentoring and sponsorship	Use of performance self-assessments
Introduce transparency to promotion, pay and reward processes	Offer networking programmes	Diverse selection panels
Appoint diversity managers and/or diversity task forces	Set internal targets	

Source

Government of the United Kingdom, Gender Pay Gap Service: https://gender-pay-gap.service.gov.uk

Emerging roles that will underpin the HR function of the future

Diversity & Inclusion Officer

Like the Chief Learning Officer, the D&I Officer is not a new role but a reinvented one. No longer a primarily compliance focused role, the D&I Officer will design and implement diversity and inclusion strategies, policies and programmes to rewire organizational culture and transform the behaviors, attitudes and mindsets of individuals at all levels.

Summary: Framework for Action

The six imperatives for the workforce of the future and the associated leadership practices and emerging HR functions are summarized below.

Imperatives	Emerging Leadership Practices	Emerging HR Functions
Developing New Leadership Capabilities for the 4IR	→ Embrace and explain ambiguity → Combine operational management, technology integration and people management skills → Use culture as the new structure → Use analytics as a key tool in the distributed organization	→ Cultural Ambassador → Digital HR Lead
Managing the Integration of Technology in the Workforce	→ Build strategies for job reinvention, reskilling and redeployment of talent → Identify reskilling pathways for talent whose work is being transformed by automation → Orchestrate a combination of actions to address the impact of automation → Build a talent ecosystem encompassing alternative work models and employ different methods of finding needed skills	→ Head of Work Reinvention and Reskilling → Head of Relevance and Purpose
Enhancing the Employee Experience	→ Create a human-centric, holistic and purposeful employee experience → Rethink and invest in employee well-being → Align the employee experience with the agile operating model → Use technology to engage employees	→ Employee Experience Specialist → Bot Monitor
Building an Agile and Personalized Learning Culture	→ Foster a culture of lifelong learning and shared responsibility → Engage and pro-actively manage employees in at-risk jobs → Unlock the learning mix that is right for the organization → Track and measure skills in your organization	→ Cultural Ambassador
Establishing Metrics for Valuing Human Capital	→ Use new technologies and data to develop new human capital metrics → Use technology and data to drive the business decision making → Create external reporting on the value of and value added by human capital → Include all forms of human capital within the organization's metrics	→ Head of Insights → HR Data Scientist
Embedding Diversity and Inclusion	→ Proactively manage diversity in alignment with business growth → Embed D&I into concrete steps in culture and process → Use data analytics rigorously to measure diversity and assess inclusion → Engage with stakeholders and knowledge sources beyond the organization	→ Diversity & Inclusion Officer

HR 4.0: Case Studies

Unilever

Imperatives 2, 3, 4 and 6

Unilever, a large multinational consumer goods company headquartered in Europe, responds to global and local business and human capital challenges as market forces shape the competitive landscape. Their top priority is accelerating growth. This depends largely on their power to attract and retain the best and diverse talent.

Enhancing the employee experience through technology

To deliver on strategic growth opportunities, Unilever has worked to release capacity in their workforce while simplifying the existing employee experience. Their research indicated that employees spend a disproportionate amount of time on navigating internal services, losing almost a day of productivity a week on non-value-added activities, including changing tools, processes and policies. Coupled with the increasing pressure for employers to digitalize the employee environment, Unilever opted for a digital solution to optimize administration and engage employees. Using an integrated, single point of entry, employees can access information with ease, replacing generic query handling while still customizing responses based on employee profiles. Complex queries are resolved using a digital artificial intelligence chat bot through natural language conversation. Unilever complements technology with a front facing People Experience role to support employees end-to-end. The capacity unlocked through technology and automation is reinvested into human support which provides employees with a human touch for their day-to-day needs, redirecting focused support where it really matters to the individual. This has resulted in over 1 million interactions and searches, translating to an estimated 300,000 hours freed up annually for employees and HR. Employee satisfaction scores have increased, and there is a quicker query resolution turnaround time. Employees have more capacity to focus on more productive activities, learning, well-being or finding their purpose.

Building strategic talent pools to support a D&I workforce

Unilever is ensuring alignment between human and financial capital so that the organization is more effective at driving sustained performance. In response to market changes to "buy local" and "hyper personalization", Unilever has undergone a transformation process to shift strategic decision-making processes from a global level to a local level. Decision-making power is being distributed to those who are closest to the consumer to ensure that local talent and expertise can have greater business impact. As a large multinational, Unilever uses 'cells' to help balance the global and local approach, and each are at the intersection of local versus global, or divisions or product category versus market. Their Talent First model identifies and focuses on roles that deliver the highest amounts of value for each cell depending on its individual strategic direction. Key talent is identified using non-hierarchal, data-driven methodologies to drive return on investment for the organization. They also highlight talent investment opportunities for strategic development interventions. Their goal is to build breadth and depth of strategic talent pools to support a diverse and inclusive workforce. Supporting this initiative is a customized internal talent platform that connects talent with flexible project opportunities. Their Talent First Strategy has ensured full coverage of C-level roles and General Managers, where GM talent have broad future fit experience and meet high standards of leadership. It has also resulted in a gender-balanced management team. They strive to further their D&I initiatives and enable a high performing culture by becoming the employer of choice for people with disabilities, aiming for 5% by 2025. They've also developed the Unilever Future Leaders programme to keep prime access to early-career top talent and continue to build a leadership powerhouse. Specific to digital talent, Unilever focuses on recruiting and retaining a critical mass.

Investing in the livelihood of displaced employees by partnering with government to ensure their continued relevance

Changes in local markets and automation has prompted Unilever to find solutions which protect the well-being and livelihood of their workforce. When deploying technology, they identify those affected and how, and explore solutions with local government bodies and non-governmental agencies. For example, their efforts in future-proofing tea-plantations in Kenya required a business transformation. Operational and mechanization trends were identified, and an analysis was carried out on how it would impact low-skilled workers and their immediate and distant family members who depend on them. Their current skill levels were analysed, and numerous agricultural opportunities were identified for individual workers and which would also have a positive impact on the Kenyan community. Reskilling initiatives were deployed, along with funding programmes for those who became entrepreneurs. There were over 2,000 retrenched employees who are now in alternative sustainable employment, translating into over 10,000 sustained livelihoods. There were also over 1,200 impacted employees enrolled in artisanal trade projects, mainly in hand woven craft and homemade detergents on a small scale. Trade unions and social partners have indicated the positive social impact the initiative has had in the community.

Unilever's Framework for the Future of Work: accelerating business transformation through lifelong learning

Unilever's strategy is 'Purpose led, Future Fit'. They aim to prove that purpose-led brands, businesses and people deliver improved financial and societal impact by ensuring all their brands have a deeper and authentic societal and environmental purpose. Unilever strives to be a company that delivers on the trust consumers have in them and are building a sustainable and responsible future of work. Organizations are operating in a world of extensive disruption brought on by the 4IR. The Consumer Goods industry, which employs about 20% of the world's workforce, is no different. They are seeing growth slow down across all sectors and markets as the traditional value-creation model falters, driven by the rise of digital intimacy, rapidly shifting patterns of consumption, increased activism, changes in generational norms and expectations, and geopolitical shifts. Simultaneously, the world of work is also changing for the reasons explored in this paper. Unilever has thus developed a system anchored in the commitment that the organization has a responsibility to generate and sustain employability, has a need to accelerate its own capabilities, and will meet these through increased investment and commitment to lifelong learning and by pioneering radical new forms of employment. This set of activities is called 'The Framework for the Future of Work' (see Figure 12). The framework aims to deliver a purpose-driven, future-fit social contract of work for employees in a time of significant change, and to do so in a way that simultaneously enables business transformation. Implementation of the Framework aims to:

1. **Ignite lifelong learning.**
   Unilever will proactively ensure all employees have a 'My Future Plan' and are deliberately building their future employability for new roles within Unilever or externally. In an era of continuous change, ensuring their workforce is equipped to thrive is a fundamental piece to employee well-being. Each employee must identify one or more future pathways for themselves among four options, varying from upskilling or reskilling within Unilever, reskilling for a role outside of Unilever, or transitioning to a new model of employment.
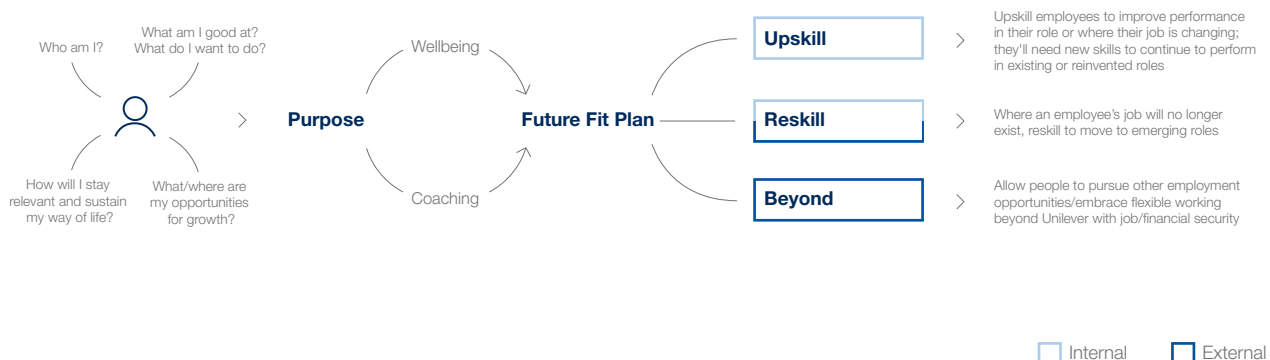
2. **Change the way they change.**
   Procedural and process-driven change approaches often require consensus and can be slow. Since 80% of Unilever's units are unionized, there is a risk of strikes, negotiations and protests undermining their purpose-led agenda publicly. They aim to work with employees and union representatives to build awareness, facilitate dialogue and proactively co-create employee plans.

3. **Redefine the Unilever system of work.**
   Unilever will develop new forms of employment within the organization, whereby employees have the option to move between fixed and flex employment. Pilot schemes are underway in the UK and include initiatives to 'pool' people to share with other organizations.

Fig. 12 Unilever's Framework for the Future of Work

Who am I?
What am I good at? What do I want to do?
How will I stay relevant and sustain my way of life?
What/where are my opportunities for growth?

Purpose → Wellbeing → Future Fit Plan → Coaching

Upskill — Upskill employees to improve performance in their role or where their job is changing; they'll need new skills to continue to perform in existing or reinvented roles

Reskill — Where an employee's job will no longer exist, reskill to move to emerging roles

Beyond — Allow people to pursue other employment opportunities/embrace flexible working beyond Unilever with job/financial security

☐ Internal   ☐ External

Source
Unilever

Saudi Aramco

Imperatives 2, 4 and 6

Saudi Aramco, a national petroleum and natural gas company located in Saudi Arabia, has always recognized training, reskilling and upskilling as part of a unified ecosystem to promote national employment, close the skills gap and, most importantly, create sustainability for business operations and expansion. They have implemented various initiatives to prepare for the future of work, not only ensuring their workforce is reskilled and upskilled due to job displacement, but also to promote an inclusive workforce within the organization and nationally. It is predicted that as much as 30% of manual work will be displaced due to automation. This disruption would disproportionately affect the operators, inspectors and rig workers that are a majority of the company's workforce. Additionally, the industry has been challenged by a lack of experienced and qualified female talent resulting in a smaller talent pool for technical roles, which then has an impact on the number of women in upper management, as technical roles are often prerequisites for career advancement. Saudi Aramco deploys several initiatives to ensure a pipeline of skilled and diverse workers.

Creating digital fluency for all

As automation is increasingly deployed in the oil and gas industry, it is predicted that as much as 30% of manual labour will be displaced. In Saudi Aramco, this disruption would disproportionately affect the operators, inspectors and rig workers that are the majority of the company's workforce. Although Saudi Aramco has had a robust and highly-specialized industrial training programme for decades, the launch of their Digital Transformation Strategy caused senior leadership to re-evaluate the curriculum to ensure that it was preparing apprentices for the future of work. To create an equal playing field across the company, technical and vocational workers must have the same level of digital fluency as their peers. Upskilling this young and massive population was a critical step forward in democratizing work and providing potential opportunities for all employees. The curriculum itself was transformed using a Digital Capability Framework to combine multiple elements of digital technology including augmented reality, virtual reality, gamification, and a digital academy with traditional classroom learning to provide apprentices with the knowledge and skills to use the latest technological advancements, and the capability to evaluate their relevance in the workplace.

Preparing for the future of work

Since a significant portion of the workforce are industrial employees whose current skills and positions will likely be affected by automation, Saudi Aramco created a cross-functional team to take a holistic view on the future of work. This included senior leadership across major stakeholder groups including IT, HR and Engineering. Their mission was to have a comprehensive plan to mitigate the internal impact of automation and other technologies, with a focus on reskilling and upskilling of affected jobs. Both quantitative and qualitative aspects were considered to inform decision-making at all levels of the organization, such as training, workforce planning and leadership development. They conducted a mapping of all current and future jobs to understand which jobs will require upskilling and reskilling, the implied timeframe, the anticipated percentage of automation or augmentation by technology, and current and future skills demanded. This holistic approach to workforce development allowed Saudi Aramco to move quickly to adjust their training curriculum, focus new degree hires on emerging technologies and upskill current employees in line with business demand. During a joint session held in Dhahran, Saudi Arabia, in May 2019, Saudi Aramco hosted more than 20 fellow oil and gas companies, sector experts and academics to share lessons learned and best practices in managing the future of work as co-chair of the World Economic Forum's "Future of Work in Oil and Gas" Taskforce, and create an industry-led roadmap.

Closing the skills gap for women to provide greater opportunities to participate in the workforce

Saudi Aramco is a major employer in Saudi Arabia, and as part of the country's 'Vision 2030', which aims to rapidly increase female participation in the workforce, the organization needed to ramp up the number of skilled female talent. Saudi Aramco created the Leading National Academy (LNA) as a female-focused vocational academy representing a public-private partnership. It is a new institute established under the National Specialized Partnership Academies (NSPAs), which contributes to the sustainable development of the Kingdom through many partnerships with vocational training organizations. While their focus is primarily on industrial and technical skills, it also ensures that female trainees receive soft skills training including speaking with impact, emotional intelligence and business acumen. Most recently, the NSPA has 30 partnership academies focused on future jobs. Since inception, NSPAs have graduated nearly 19,000 trainees and have over 5,000 active learners in 18 specialized institutions. Together with the Ministry of Labour and Social Development, the Technical and Vocational Training Corporation (TVTC), and Human Resources Development Fund (HRDF), LNA provides curricula in supply chain, electrical, laboratory science, HSE officer and instrument/mechanical technician. While primarily focusing on industrial skills, it also ensures that trainees receive the most-wanted soft skills training, including speaking with impact, emotional intelligence and business acumen. As the first female-focused industrial training centre in Saudi Arabia, LNA is paving the way to build inclusion into even the most male-dominated industrial sectors. By introducing more qualified Saudi women into technical trades, this programme is creating talent flows to meet not only the demand of Saudi Aramco, but of the Kingdom's energy ecosystem.

PwC

Adapting to the changing landscape of work through learning, analytics and change management initiatives

In the face of accelerated change in the workplace due to the Fourth Industrial Revolution (4IR), PwC has implemented several initiatives to prepare their workforce and drive their business strategic objectives. They are faced with challenges due to changing skill requirements and retention needs. The various initiatives impact formal processes and their organizational culture, across the spectrum of employees including both leaders and employees.

One such initiative is upskilling leaders through their Network Leadership Development Programme, a 22-month programme launched in 2017 to accelerate the development of future-focused leadership capabilities. The global programme focuses on new leadership traits, mindset change, and working across cultures. Examples of critical skills include organizational EQ and IQ, self-awareness, innovation and forming strategy, influencing without authority, across organizations, cultures and geographic boundaries, simplifying and leading through complexity and ambiguity, and anticipating future trends. At an employee level, a library of cloud-based learning platforms puts learning at the fingertips of employees. PwC has specifically invested in broad digital upskilling efforts to accelerate the digital acumen of their workforce. They've introduced digital badges to virtually validate and acknowledge the knowledge and skills of employees.

In their efforts to change their culture, PwC has laid the groundwork to standardize and adopt enhancements and functionality in the Human Capital Management space. People processes were standardised and streamlined through the implementation of one consistent global human capital management system – Workday. They've recognized that "extending leadership down to an operational level – having decisions made closer to the employees they affect – would start driving cultural change". Leaders are specifically equipped with analytics on their people in real-time to accelerate decision-making. The global shift required the business to simplify, standardize and align people processes, data and technology. Their ability to predict talent needs has been enhanced, resulting in more efficient and adaptable talent models.

A number of other initiatives and campaigns have been launched to enhance the employee experience. The objective is to promote personal, team and organizational health and transparency so that their workforce can be the best at and outside of work to foster sustainable high performance and to achieve their goals faster. They vary from removing stigma associated with mental health issues to CEO Action for Diversity & Inclusion, which is an open exchange of ideas, actions and real-life experiences. Specific actions include campaigns to show solidarity such as wearing a pin, to sharing stories on social media. Certain initiatives are focused on processes and policies such as expanding family leave programmes, engaging men in diversity discussions and training to cascade knowledge and expectations down the structure of the organization.

ING

The financial institution has embedded their diversity & inclusion values on the basis of the overarching business strategy and has been taking action to embed it into the fabric of the business. They have communicated a desire to have a workforce which reflects the diversity of their customers. ING has placed a clear emphasis on communicating why an inclusive and diverse culture is important for both the organization's performance and for the individual, to convince the workforce why diversity & inclusion is needed. ING also highlights the pivotal role which leaders have in cascading desired behaviors into the workforce to create sustained change. Leaders have been tasked with role modelling desired behaviors and creating a workplace for everyone to feel supported and confident to bring their best selves. Ambassadors have been engaged to spread the word. Their diversity & inclusion narrative has also been translated into operational goals including recruitment, career development and communication initiatives. The company has also been recognized in the Bloomberg Gender Equality Index among other rankings for gender equality and diversity.

Major Energy Company

New and emerging technology presented new options for reinventing work across the oil rigs of this organization. Instead of leading with technology, the HR function reinvented all the jobs on the rigs, simultaneously substituting, augmenting and creating human work with these emerging technologies. Importantly, instead of casting aside its existing talent with legacy skills and having their communities bear the brunt of a restructuring, the organization embarked on a comprehensive reskilling programme with impressive results.

For example, the motorhand role was deconstructed into its component tasks and the associated skills identified. The new tasks and skills required as a result of the automation and redeployment of work were also analysed, and the shift from the legacy skills to the new skills mapped as illustrated in *Figure 13*. The new rig technician role illustrated the impact of achieving the optimal combination of humans and automation.

The impact of this transformation is a much more sustainable economic model for both the organization and the communities in which it operates. The result of the job reinvention was a 65% improvement in profitability even after incorporating wage increases of between 7-13% as a result of higher skill premiums; in addition, there were no headcount

Fig. 13 The reinvention of the current state of the Motorhand role to the desired future state as a Rig Technician of a major energy company

	Focus on closing the skills gap	
	Motorhand (current state)	Rig Technician (future state)
Key job activities	Routinely check engine equipment, compleate reading sheets and report problems Perform routine engine testing and maintenance Complete routine paperwork Maintain and repair engine and fuel systems	
	→ Pick up and lay down pipe or casing → Rig up wire line machine and run survey → Line up trip tank, prepare for hole fill and read or gauge trip tank volume → Add/remove a generator from the system → Check the coolant level and add fluid to the radiator od an engine → Clean eletrical houses and surrounding area → Instant grounding → Mantain a parts inventory → Perform a complete check of all fluid levels on an engine → Perform preventive maintenance on an air compressor → Pressure up/down accumulator and perform routine maintenance	→ Communicate with the District Operations Supervisors for issues that cannot be resolved via phone and/or email → Resolve problems by clarifying issues through researching and exploring solutions, and escalating unresolved problems → Complete preventive maintenance work orders according to systems requirements and close them out in the system → Troubleshoot transducers, cat 5/fibre optic cabling → Service and repair communication systemss → Maintain/repair rig air system → Run diagnostic testing on eletrical equipment → Mantain hydraulic power units (hydraulic hoists, automated floor wrenches and automated catwalk)
Skills	→ Specialized knowledge of engine and fueling systems → Foundational electrical knowledge → Working within defined procedures	→ Advanced eletrical and mechanical knowledge, to perform both preventive maintenance and complex repairs on a wide range of rig equipment → Enhanced communication and collaboration skills → Decision-making skills → Complex problem-solving skills

Source

Willis Towers Watson, 2019

reductions. These statistics highlight the benefits and value to both the business and workforce of automation as a direct result of HR and the business partnering together. This partnership allowed the organization to improve its operational integrity and profitability while creating a safer work environment, preserving employment and growing wages.

AT&T[46]

Imperative 4

AT&T, a global legacy telecommunications organization, redesigned its approach to learning and reskilling with its Workforce 2020 (WF2020) programme. The requirement to shift business strategy due to technological advances such as the cloud and mobile-first, created an enormous reskilling challenge for AT&T to remain relevant and competitive. Recognizing the scarcity of skills in demand and the valuable institutional knowledge in their existing workforce, WF2020 set out to retain and reskill existing employees for newly created roles, creating a culture of perpetual learning and enhancing mobility within the company. A career profile tool empowers employees to develop and learn. The tool showcases potential career paths and highlights job requirements, reskilling opportunities, potential salary and whether the area is projected to grow or shrink.[47] Through the tool, employees are provided with better transparency on the internal job and skills market and the range of possible career trajectories within AT&T. The programme complements those insights with relevant reskilling opportunities, online courses comprised of both short-cycle duration (nano) degrees as well as longer-cycle reskilling opportunities (online masters programmes). An important element to successfully launching the programme was the strong support of leadership. The programme has also seen various benefits beyond enhancing the supply of relevant skills, such as enhanced employee engagement.

Upwork

Upwork, a global freelancing platform where businesses and independent professionals collaborate remotely, is committed to building a culture true to their founders' vision of work without limits and empowering people with opportunities. Based on this, the organization established 4 values, influenced by corporate employees across all levels and freelancers: bias towards action, inspire a boundless future of work, building amazing teams, and putting the community first. The values are the pillars of the organization and permeate throughout the business, influencing decisions, prioritization, leadership promotions, and identity.

Expanding employment strategies for a comprehensive talent pool

As a platform for flexible work models, Upwork embraces these models and orchestrates a distributed workforce. They strive to build a community to drive authenticity and understand each individual and partner, connecting each through a shared mission. They partner with their extended workforce of freelancers who are aligned around their common mission and contribute their skills in a variety of meaningful ways. For example, the engineering and operations teams collaborate to scale Upwork's offerings. Integrating the efforts of freelancers, corporate employees and vendor partners allows them to build an agile and ever-evolving business that is committed to driving their mission forward. At the same time, by extending their talent strategy geographically, they aspire to bring economic opportunities to their talented partners who live in less affluent areas.

Leveraging processes and policies to drive diversity and inclusion

Upwork believes that authenticity in their workforce encourages individuals to apply their whole selves to do their best work. They have built processes and policies to drive this. For example, corporate benefits are designed to support a team member through a host of life stages. Twelve weeks of parental leave are available for each parent and inclusive of all types of family building. Bereavement leave includes whomever is defined as family. In addition, Upwork provides fertility support and leaves for pregnancy loss, as well as a variety of mental health resources, volunteer time, unlimited time off, and prayer, wellness, and mothers' rooms, etc.

Investing in a culture that encourages people to bring their whole self to work

Culture is a critical aspect to employees bringing their whole selves to work, and Upwork encourages them to work to build it through connections in all that they do. Each collaborator participates in fostering their inclusive culture, ensuring all voices are heard and that their communication and collaboration styles capitalize on the insight of each team partner. The teams come together to innovate and push the business forward, but also to celebrate milestones, share moments of serendipity and grieve losses. They encourage authenticity in all interactions, and this has helped reduce the taboo on topics people might normally deem too emotional to discuss at work. Their goal is to promote the fact that their workforce is human. They've connected on issues such as Black Lives Matter, Me Too and preventing sexual harassment at work, immigration policy, diversity in leadership and LGBTQIA rights.

IBM[48]

Matching internal and external talent to work requirements

IBM orchestrates a workforce that is permeable and dispersed, personalizing work internally and encompassing alternative work models, to foster innovation and enhance speed and quality. Their integrated work and development system allow managers to tap into their internal skills base more effectively by empowering employees to volunteer for tasks that interest them and which they have the skills for. The system is complemented by protocols that allow managers to use external talent such as free agents alongside internal talent. IBM creates a seamless work experience by matching skills to work borders, partners and clients.

They have built the system on two key pillars. Firstly, they use an open talent marketplace which enhances the agility of the workforce by matching work with skills, with the goal of optimizing time and project costs. The company transitioned from a traditional and structured way of building teams with full-time employees with single projects, to deconstructing work into tasks and distributing them to talent with the right skills (i.e. from a one-to-one to a many-to-many relationship). Work that has clear requirements and is easy to judge, such as chunks of software development, is posted on an internal platform. Those who have the skills, the time and interest can complete the task. Individual users have their skills, achievements and project outcomes recognized on their online profile on the platform. The work can also be extended to external talent (e.g. gig workers) depending on whether they meet certain protocols and skill requirements. This model further supports individual development by providing valuable insight on what skills are in demand to all who use it.

Secondly, IBM has a department dedicated to managing a variety of programmes to match talent to assignments. One focus is to place employees on remote short-term assignments. The benefits of the initiative include allowing for quick deployment of workers familiar with IBM's culture and inner workings, and helping with employee retention. For example, employees who might leave to attractive external opportunities are placed on attractive assignments internally at IBM and are retained. Another area of focus involves temporarily placing employees in external positions with partners or clients. The skills and expertise gained from external assignments is to the benefit of all stakeholders: the individual gains new experiences, the external partner

or client gains needed skills, and IBM benefits whether the individual stays or leaves the company. When employees return to IBM, they typically have higher levels of engagement and broader perspective. If the employees leave, then there could be commercial opportunities for IBM.

The company's investment in these programmes signals its commitment to developing talent and creating an agile and flexible work environment. They promote self-development and use a work ecosystem that is permeable and encompasses alternative work models.

Infosys

Investing in reskilling and upskilling of the workforce

Infosys is an IT consulting firm headquartered in India which has focused on coupling changes in business strategy with mechanisms for ensuring their workforce has the right skills and remains relevant through a culture of lifelong learning. This culture is supported by strong support from the management and HR teams and by investments in reskilling and upskilling opportunities for learners.

With changing client needs, and a workforce that will be augmented by automation, Infosys faces a need to expand its talent base, develop a broader range of niche and emerging skills, and ensure that the talent entering the workforce will meet the demands of their changing business strategy. Infosys has made investments in two key areas. Firstly, preparing upper education students to become workforce ready. Through the use of a proprietary app, Infosys connects with students to ensure awareness of both the technical and 'soft' skills they require to prepare for the practical challenges in the workplace.[49] Secondly, Infosys has invested substantially in continuing education to fill both their short- and long-term skill needs. They have co-developed learning programmes with both Purdue University and Cornell University and taken advantage of various MOOCs. Multiple learning approaches are combined (e.g. in-class, online learning, etc.)[50] to enhance the learning experience.

Infosys has built in-house tools that incentivize employees to learn critical skills and develop an appetite for lifelong learning. Technical skills are foundational for IT organizations, but to support the shift in skills required to power their business strategy, from process-oriented skills to a complex mix of cognitive and 'soft' skills, Infosys is increasingly focusing on 'soft' skills.

MTN Group

Using employee engagement surveys to shape strategic decision making and performance

MTN is a leading telecommunications company at the forefront of technological and digital change. Headquartered in Johannesburg, South Africa, MTN operates in 24 countries across Africa and the Middle East. The company prides itself on its distinct cultural ecosystem, which is at the heart of its organizational vision, strategy and values. Employee surveys are a strategic lever used to deliberately craft an engaging culture that the company and its people shape, believe and live every day. The survey approach is aligned to its 'Voice of Customer' philosophy, which seeks to empower individuals and the workforce. Its success is evident in an 85%+ survey participation rate, which the company garners in its annual global culture audits, and half-yearly polls across its 15,000-strong workforce.

The survey is an important lever that is endorsed by the Board and Executive Leadership. The KPIs of every business leader in MTN include growth in sustainable engagement and an index included in the survey. Leadership at MTN is actively involved throughout the process of survey planning, participation, results and driving actions because they recognize the survey's value in building a high-performing company. MTN has studied and verified the strong correlation between engagement and performance. Increases of four percentage points in engagement and nine percentage points in opinions of leadership have been linked statistically with a 50% increase in a composite people productivity index and a 100% increase in human capital ROI over a span of three years.

MTN's human capital strategies, policies, programmes and interventions are based on survey outcomes. Pivotal human capital dimensions are surveyed annually and provide rich insights to drive deliberate interventions, such as: (1) Commitment to Experience—a dedicated global employee experience function focussed on the end-to-end value chain of people and business strategies; and (2) Future of Work - MTN's learning goals are shaped by the belief that 'Every MTNer deserves the right to future-proof their skills and capabilities.' The company introduced its learning experience platform to focus on digital, cognitive and new-age social skills, together with a first-ever demonstrated agile learning agenda that connects employee experiences to customer experiences. Employee engagement is pursued with a passion at MTN—powered by its deliberate strategy, driven by the business, and strongly enabled by insight-driven surveys which make MTN's cultural footprint a force to reckon with across African and Middle Eastern markets.

Haier[51]

Distributing decision making to a network of self-governing entrepreneurs

The introduction of new technologies, specifically the Internet of Things (IoT), have created an opportunity to transform Haier, a consumer electronics and home appliances organization, from a static hierarchical organization into a platform for a network of teams and entrepreneurs. Technological advances are creating a need for speed and inno-

vation, as the use of AI and sensors enhance data collection and the ability to derive valuable insights on consumers. To capture these opportunities, CEO Zhang Ruimin distributed decision-making to those closest to the customer. Instead of using a traditional hierarchal management structure with organizational units, divisions and functions, Haier created groups of microenterprises.

Each microenterprise is valued based on its ability to create value for the end consumer and the decision-making powers of the corporate executives are delegated to the microenterprises. The microenterprises are supported with financing, technology, HR services and logistics from the corporate functions. Employees have the autonomy to act as self-governing entrepreneurs focused on designing, developing and improving products and services for the consumer. They are compensated and empowered to innovate based on customer insights and the information they receive about the user experience. This motivates and encourages employees to realize their own value and unlock their full potential.

On the work level, the IoT provides vital customer data which has enabled employees to lead radical experiments with minimal supervision. On the organizational level, smart software and automation has enabled Haier to reinvent its organization into a hub for self-governing entrepreneurs.

Acknowledgements

We would like to thank Adam Grant, Saul P. Steinberg Professor of Management and Psychology, The Wharton School, University of Pennsylvania for his valuable insights and support. In addition, we thank the members of the CHRO community at the Forum who gave their input through the year to make this publication possible.

→	**David Morris**	Global Head of Learning, HSBC
→	**Emmanuel André**	Chief Talent Officer, Publicis Groupe
→	**Andrew Soren**	Senior Adviser, Leadership, Culture and Governance, LRN
→	**Gordana Landen**	Chief Human Resources Officer, Adecco Group AG
→	**Judith Wiese**	SVP People and Organisation CHRO, Royal DSM
→	**Leena Nair**	Chief Human Resources Officer, Unilever
→	**Michele Nettles**	Chief People and Culture Officer, ManpowerGroup
→	**Nabil Dabal**	Executive Director, Human Resources, Saudi Aramco
→	**Prasad Swaminathan**	Senior Vice-President; Global Head, Talent and Learning, ABB
→	**Arun Bajaj**	SVP, Human Resources, Renault Nissan Alliance
→	**Carol Stubbings**	Global Leader, People and Organisations Practice, PwC
→	**Suchi Sharma**	Global Head and VP of Gender Equality and Intelligence, SAP
→	**Ian Wilson**	Vice President Human Resources, Amazon Web Services
→	**Zoë Harte**	Senior Vice President of Human Resources and Talent Innovation, Upwork

Platform for Shaping the Future of the New Economy and Society Business Partners

Basic Industries
African Rainbow Minerals
Aroundtown
BE Energy Investments
Crescent Enterprises
Eurasian Resources Group
JLL
Novolipetsk Steel (NLMK)
PhosAgro
Royal DSM
Stanley Black & Decker

Consumer Industries
Ingka Group (IKEA)
Lego Foundation
Nestlé
Procter and Gamble
QI Group
Unilever

Energy
Centrica
Petrobras
Saudi Aramco
Teck Resources Limited

Financial Services
AlixPartners
Banco Santander
Bank of America
Bank of Montreal
Clayton, Dubilier & Rice
Guardian Life Insurance
HSBC Group
Mastercard
RBC Financial Group
NYSE
PayPal
UBS

Health and Healthcare
AARP
Centene Corporation
GlaxoSmithKline Plc (GSK)
Health Care Service Corporation
Henry Schein
Johnson & Johnson
Merck KGaA
Sanofi

Information and Communication Technology
AT&T
Amazon Web Services
Automatic Data Processing (ADP)
Cisco Systems
Dassault Systèmes SE
Dell Technologies
Google
HCL Technologies
Hewlett Packard Enterprise
Infosys
Microsoft Corporation
Nokia Corporation
Salesforce
SAP
Turkcell Iletisim Hizmetleri AS
Verizon Technologies
VMware
Workday

Media, Entertainment and Information
Bloomberg
Burda Media
Dentsu Aegis Network
NBC Universal
Omnicom Group
Publicis Group
Recruit Holdings

Mobility
Bahrain Economic Development Board
Booking.com
Deutsche Post DHL Group
Renault Nissan Alliance

Professional Services
A.T. Kearney
Accenture
Adecco Group
Boston Consulting Group (BCG)
EY
Heidrick & Struggles
LinkedIn Corporation
LRN Corporation
ManpowerGroup
Mercer (MMC)
PwC
Tata consultancy Services
Upwork
Willis Towers Watson

Multi-Industry and Other
Alghanim Industries
Bill and Melinda Gates Foundation
CHN Industries
Dogan Group
King Khalid Foundation
Prince Mohammed bin Salman bin Abdulaziz (MiSK) Foundation
SeverGroup
WorldQuant

Notes

1 Business Roundtable, 2019.

2 World Economic Forum, 2018a.

3 World Economic Forum, 2018b.

4 HR People and Strategy & Willis Towers Watson, 2019.

5 PwC, 2019.

6 Meister, 2018.

7 Milligan, 2018.

8 Boudreau, 2019.

9 HR People and Strategy & Willis Towers Watson, 2019.

10 Korn Ferry, 2019.

11 PwC, 2018.

12 World Economic Forum, 2019.

13 HR People and Strategy & Willis Towers Watson, 2019.

14 OECD, 2019.

15 Staffing Industry Analysts, 2018.

16 Boudreau, 2019.

17 SAP Fieldglass in collaboration with Oxford Economics, 2018.

18 Willis Towers Watson, 2019a.

19 Bersin, et al., 2019.

20 Willis Towers Watson, 2019a.

21 Willis Towers Watson, 2019c.

22 Willis Towers Watson, 2019d.

23 Kessler, Angermeyer, Anthony, et al., 2007.

24 Bersin, et al., 2019.

25 Willis Towers Watson, 2018.

26 Bersin, et al., 2019.

27 HR People and Strategy & Willis Towers Watson, 2019.

28 Grossman, 2015.

29 Ibid.

30 OECD, 2019.

31 Bersin, et al., 2019.

32 McKinsey & Company, 2017.

33 Willis Towers Watson, 2019a.

34 PwC, 2019.

35 Naden, 2019.

36 Jesuthasan, 2019.

37 Bourke & Dillon, 2013, and Bersin, et al., 2019.

38 PwC, 2015.

39 HR People and Strategy & Willis Towers Watson, 2019.

40 McKinsey & Company and Lean In Foundation, 2015.

41 Shook and Sweet, 2018.

42 Bourke, 2016.

43 World Economic Forum, 2019.

44 Bersin, et al., 2019.

45 Brown, et al., 2018.

46 Based on Donovan, J. and C. Benko, 2016.

47 Caminiti, 2018.

48 Based on Boudreau, Jesuthasan and Creelman, 2015.

49 Mehta, 2019.

50 Phadnis, 2019.

51 Based on Jesuthasan and Boudreau, 2018.

References

Bersin, J., B. Denny, M. Hauptmann, et al., *Leading the social enterprise: Reinvent with a human focus, 2019 Global Human Capital Trends, Deloitte*, 2019

Boudreau, John, *Key findings: The gains from work automation*, Visier, 2019.

Boudreau, J., R. Jesuthasan and D. Creelman, *Lead the work: Navigating a world beyond employment*, Wiley, 2015.

Bourke, J. and B. Dillon, *Waiter, is that inclusion in my soup? A new recipe to improve business performance*, Deloitte Australia and Victorian Equal Opportunity and Human Rights Commission, 2013.

Bourke, J., *Which two heads are better than one? How diverse teams create breakthrough ideas and make smarter decisions*, Deloitte and Australian Institute of Company Directors, 2016.

Brown, Gosling, Sethi, et al., *Workforce of the future: The competing forces shaping 2030*, Pwc, 2018.

Business Roundtable, *Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans'* [Press release], 19 August 2019, retrieved from https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans: https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans.

Caminiti, S., "AT&T's $1 billion gambit: Retraining nearly half its workforce for jobs of the future", *CNBC*, 13 March 2018.

Charan, R., D. Barton and D. Carey, *Talent wins: The new playbook for putting people first*, Harvard Business Review Press, 2018.

Donovan, J. and C. Benko, "AT&T's Talent Overhaul", *Harvard Business Review*, 2016: https://hbr.org/2016/10/atts-talent-overhaul.

Edelman, *2019 Edelman Trust Barometer*, 2019.

Grossman, R., "How to create a learning culture", *Strategic Human Resource Management*, 1 May, 2015, https://www.shrm.org/hr-today/news/hr-magazine/pages/0515-learning-culture.aspx.

HR People and Strategy & Willis Towers Watson, *The Future Chief People Officer*, 2019.

I4CP, *Automating Work: The Human/AI Intersection*, 2019.

Jesuthasan, R., "Metrics for the future of work", *HR Tech Outlook*, 2019, https://hr-analytics.hrtechoutlook.com/cxoinsights/metrics-for-the-future-of-work-nid-765.html

Jesuthasan, R. and J. Boudreau, *Reinventing jobs: A 4-step approach for applying automation to work*. Harvard Business Review, 2018.

Kessler, R., Angermeyer, M., Anthony, C., et al., "Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative", *World Psychiatry* 6(3):168-176, 2007.

Korn Ferry, *HR heal thyself, Korn Ferry CHRO Survey Findings*, 2019.

McKinsey & Company, *Organizational Health Index*, 2017, https://www.mckinsey.com/business-functions/organization/our-insights/organizational-health-a-fast-track-to-performance-improvement: https://www.mckinsey.com/solutions/orgsolutions/overview/organizational-health-index.

McKinsey & Company and Lean In Foundation, *Women in the workplace,* 2015.

Mehta, T., "Infosys launches a new app for Indian engineering students", XDA-Developers, 18 February 2019, https://www.xda-developers.com/infosys-learning-app-india-engineering/.

Meister, J., "The Future Of Work: Three New HR Roles In The Age Of Artificial Intelligence", *Forbes*, 24 September 2018, https://www.forbes.com/sites/jeannemeister/2018/09/24/the-future-of-work-three-new-hr-roles-in-the-age-of-artificial-intelligence/#212703544cd9.

Milligan, S., "HR 2025: 7 critical strategies to prepare for the future of HR", SHRM, 29 October 2018, https://www.shrm.org/hr-today/news/hr-magazine/1118/pages/7-critical-strategies-to-prepare-for-the-future-of-hr.aspx.

Naden, C., *New ISO international standard for human capital reporting*, ISO, 2019.

Organisiation for Economic Co-operation & Development (OECD), *Employment Outlook 2019*, 2019.

Phadnis, S. and A. Das. "Infosys' in-classroom training drops as online activity grows", *The Times of India*, 18 January 2019, https://timesofindia.indiatimes.com/business/india-business/infosys-in-classroom-training-drops-as-online-activity-grows/articleshow/67584340.cms.

PwC, *A marketplace without boundaries? Responding to disruption*, CEO Survey, 2015.

———, *Preparing for tomorrow's workforce, today*, 2018, https://www.pwc.com/gx/en/services/people-organisation/publications/preparing-for-tomorrows-workforce-today.html.

———, *HR: The Future is Now*, 2019, https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf.

SAP Fieldglass and Oxford Economics, *External Workforce Insights 2018: The forces reshaping how work gets done*, 2018.

Shook, E. and J. Sweet, *When she rises, we all rise*, Accenture, 2018.

Staffing Industry Analysts, *The Gig Economy and Human Cloud Landscape: 2018 Update*, 2018.

Training Industry, *The 70-20-10 Model for Learning and Development*, 2014.

Willis Towers Watson, *2018 Getting Compensation Right Survey Findings: Five keys to getting compensation right*, 2018.

———, *Becoming Digital: Defining and Powering Digital Ambitions in the New Work Ecosystem - Pathways to digital enablement*, 2019a.

———, *High Performance Employee Experience Index*, 2019b.

———, *Wellbeing Model*, 2019c.

———, *Best Practices Survey in Health Care*, 2019d.

World Economic Forum, *Future of Jobs Report 2018*, 2018a.

———, *The Global Gender Gap Report 2018*, 2018b.

———, *Data Science in the New Economy: A New Race for Talent in the Fourth Industrial Revolution*, 2019a.

———, World Economic Forum Business Commitment Framework for Hardwiring Gender Parity in the Future of Work, 2019. Retrieved from https://www.weforum.org/agenda/2019/06/accelerating-gender-gap-parity-equality-globalization-4/

Project Team

WORLD ECONOMIC FORUM

The World Economic Forum,
committed to improving
the state of the world, is the
International Organization for
Public-Private Cooperation.

The Forum engages the
foremost political, business
and other leaders of society
to shape global, regional
and industry agendas.