

# The Future of Work

## THE IMPACT OF ARTIFICIAL INTELLIGENCE, AUTOMATION ON WORK AND JOBS AND WHETHER WE HAVE ENOUGH WORK AND JOBS AFTER THAT

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In an era marked by rapid advances in automation and artificial intelligence, new research assesses the jobs lost and jobs gained under different scenario.

The technology-driven world in which we live is a world filled with promise but also challenges. Cars that drive themselves, machines that read X-rays, and algorithms that respond to customer-service inquiries are all manifestations of powerful new forms of automation. Yet even as these technologies increase productivity and improve our lives, their use will substitute for some work activities humans currently perform—a development that has sparked much public concern.

### Impact of automation on work:

About half the activities people are paid to do globally could theoretically be automated using currently demonstrated technologies. Very few occupations—less than 5 percent—consist of activities that can be fully automated.

While technical feasibility of automation is important, it is not the only factor that will influence the pace and extent of automation adoption. Other factors include the cost of developing and deploying automation solutions for specific uses in the workplace, the labor-market dynamics (including quality and quantity of labor and associated wages), the benefits of automation beyond labor substitution, and regulatory and social acceptance.

### Development and deployment of technology:

Jobs related to developing and deploying new technologies may also grow. Overall spending on technology could increase by more than 50 percent between 2015 and 2030. About half would be on



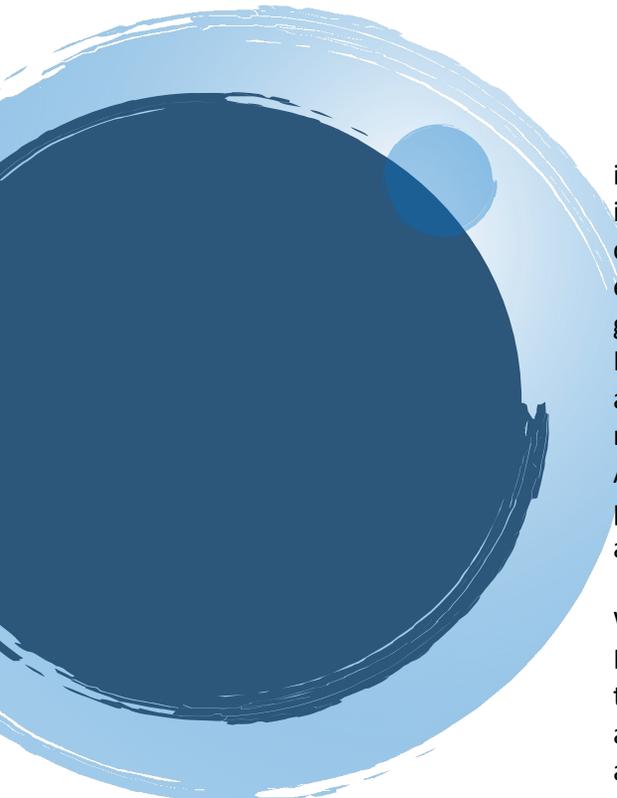
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information-technology services. The number of people employed in these occupations is small compared to those in healthcare or construction, but they are high-wage occupations. By 2030, we estimate that this trend could create 20 million to 50 million jobs globally.

It is important to note, however, that even when some tasks are automated, employment in those occupations may not decline but rather workers may perform new tasks.

Automation will have a lesser effect on jobs that involve managing people, applying expertise, and social interactions, where machines are unable to match human performance for now.

What will automation mean for skills and wages?

In general, the current educational requirements of the occupations that may grow are higher than those for the jobs displaced by automation. Workers of the future will spend more time on activities that machines are less capable of, such as managing people, applying expertise, and communicating with others. They will spend less time on predictable physical activities and on collecting and processing data, where machines already exceed human performance. The skills and capabilities required will also shift, requiring more social and emotional skills and more advanced cognitive capabilities, such as logical reasoning and creativity. Wages may stagnate or fall in declining occupations.

#### HOW DO WE MANAGE THE UPCOMING WORKFORCE TRANSITIONS?

The benefits of artificial intelligence and automation to users and businesses, and the economic growth that could come via their productivity contributions, are compelling. They will not only contribute to dynamic economies that create jobs but also help create the economic surpluses that will enable societies to address the workforce transitions that will likely happen regardless.

Faced with the scale of worker transitions we have described; one reaction could be to try to slow the pace and scope of adoption in an attempt to preserve the status quo. But this would be a mistake. Although slower adoption might limit the scale of workforce transitions, it would curtail the contributions that these technologies make to business dynamism and economic growth.

All societies will need to address four key areas:

- i) Maintaining robust economic growth to support job creation;
- ii) Scaling and reimagining job retraining and workforce skills development;

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- iii) Improving business and labor-market dynamism, including mobility;
- iv) Providing income and transition support to workers.

History shows us that societies across the globe, when faced with monumental challenges, often rise to the occasion for the well-being of their citizens. We will all need creative visions for how our lives are organized and valued in the future, in a world where the role and meaning of work start to shift.

Businesses will be on the front lines of the workplace as it changes. This will require them to both retool their business processes and reevaluate their talent strategies and workforce needs, carefully considering which individuals are needed, which can be redeployed to other jobs, and where new talent may be required. Many companies are finding it is in their self-interest—as well as part of their societal responsibility—to train and prepare workers for a new world of work.

Individuals, too, will need to be prepared for a rapidly evolving future of work. Acquiring new skills that are in demand and resetting intuition about the world of work will be critical for their own well-being. There will be demand for human labor, but workers everywhere will need to rethink traditional notions of where they work, how they work, and what talents and capabilities they bring to that work.

#### CHANGING MODELS FOR WORK AND WORK STRATEGY:

For your business to survive it will need to evolve. For it to evolve, you need to make changes. Without a change management model, the success of those changes is up to nothing more than hope and dumb luck.

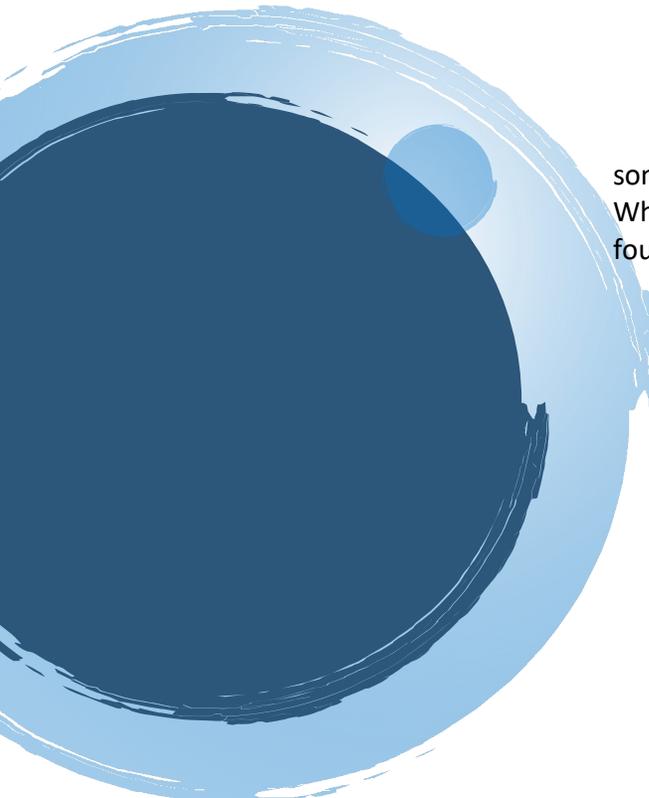
Change management models:

**Independent Work:** Working nine to five for a single employer bears little resemblance to the way a substantial share of the workforce makes a living today. Millions of people assemble various income streams and work independently, rather than in structured payroll jobs.

This is hardly a new phenomenon, yet it has never been well measured in official statistics—and the resulting data gaps prevent a clear view of a large share of labor-market activity. The resulting report, *Independent work: Choice, necessity, and the gig economy*, finds that up to 162 million people in Europe and the United States—or 20 to 30 percent of the working-age population—engage in

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some form of independent work.

While demographically diverse, independent workers largely fit into four segments:

- i) Free Agents: who actively choose independent work and derive their primary income from it;
- ii) The Casual Earners: who use independent work for supplemental income and do so by choice; who make their primary living from independent work but would prefer traditional jobs;
- iii) The Reluctant, and the
- iv) Financially strapped, who do supplemental independent work out of necessity.