

ENTREPRENEURSHIP AS A KEY TO YOUTH EMPLOYMENT

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Technological revolution and the jobs of tomorrow



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Today's technological revolution has given rise to a digital economy, which includes the Internet (fixed and mobile broadband), cloud computing, smartphones, smart cities, the Internet of Things and Internet of Everything, Artificial Intelligence (AI) and Machine Learning, Big Data analytics, Blockchain and others. History has already witnessed industrial revolutions associated with technology—the first one was driven by steam, the second by electricity, the third by digital revolution, and the fourth by artificial intelligence.

The ICT infrastructure expansion, and Internet and mobile phone access empower people to harness their creativity and ingenuity and allow much more information to be shared than any other means of communication had. The amount of digital data has doubled every three years since 2000, and today less than 2 percent of stored information is offline. In 2018 there were 4.7 billion Internet users, 7.9 billion mobile subscriptions and over 5 billion people had mobile subscriptions (see figure). By 2025 the number of unique mobile subscribers will reach 5.9 billion, equivalent to 71 percent of the world's population.

The impact of technology on the economy is undeniable. Global high-technology exports have more than doubled in the last 15 years, from USD 987 billion in 1999 to USD 2,147 billion in 2014. In 2016, global exports of ICT services increased by 5 percent, from USD 470 billion to USD 493 billion. Artificial Intelligence, robotics and other forms of smart automation could add an estimated USD 15.7 trillion to the global economy by 2030.

People with the skills and resources

The digital economy may be associated with high-tech industries, but it is also influencing a whole range of more informal activities from agriculture to street vending. Some may be directly related to mobile devices. In Ethiopia farmers use mobile phones to check coffee prices.



ILLUSTRATION: MICHAEL MORGENSTERN

to use technology and create value can thrive in today's digital world. But the digital economy presents skill-biased technical change: the idea that the net effect of new technologies reduces demand for less skilled workers while increasing demand for highly skilled ones. By definition, such change favours people with higher human capital, polarising work opportunities.

Globally, 133 million new high-skill jobs are estimated to emerge by 2022, but 75 million jobs may be displaced by automation and new technologies. Among the new roles that are expected to experience increasing demand are

Data Scientists and Analysts, E-commerce and Social Media Specialists, Training and Development, Innovation Managers, AI and Machine Learning Specialists, Big Data Specialists, Information Security Analysts, and Process Automation Experts. By mid-2030s an estimated 30 percent of jobs and 44 percent workers with low-skills and education will be at potential risk of automation. THE CHANGING NATURE OF WORK In the digital economy the nature of work has changed with the introduction of new ways working including flexible work, new ways of communi-

cating, new products and new demands for skills. New technologies are also reinforcing and deepening previous trends in economic globalisation, bringing workers and businesses into a global network through outsourcing and global value chains. These processes are reshaping work and testing national and international policies.

In many areas of work, the labour market is now global. Multinational corporations have access to labour around the world, and workers must compete on a global scale for jobs. Digital technologies heighten the competition by removing geographical barriers between workers and work demands—in many cases it is not even necessary for a company to move physically or for a worker to migrate. The work connection can be made through the Internet or mobile phones. That there is a global labour surplus makes competition among workers even fiercer.

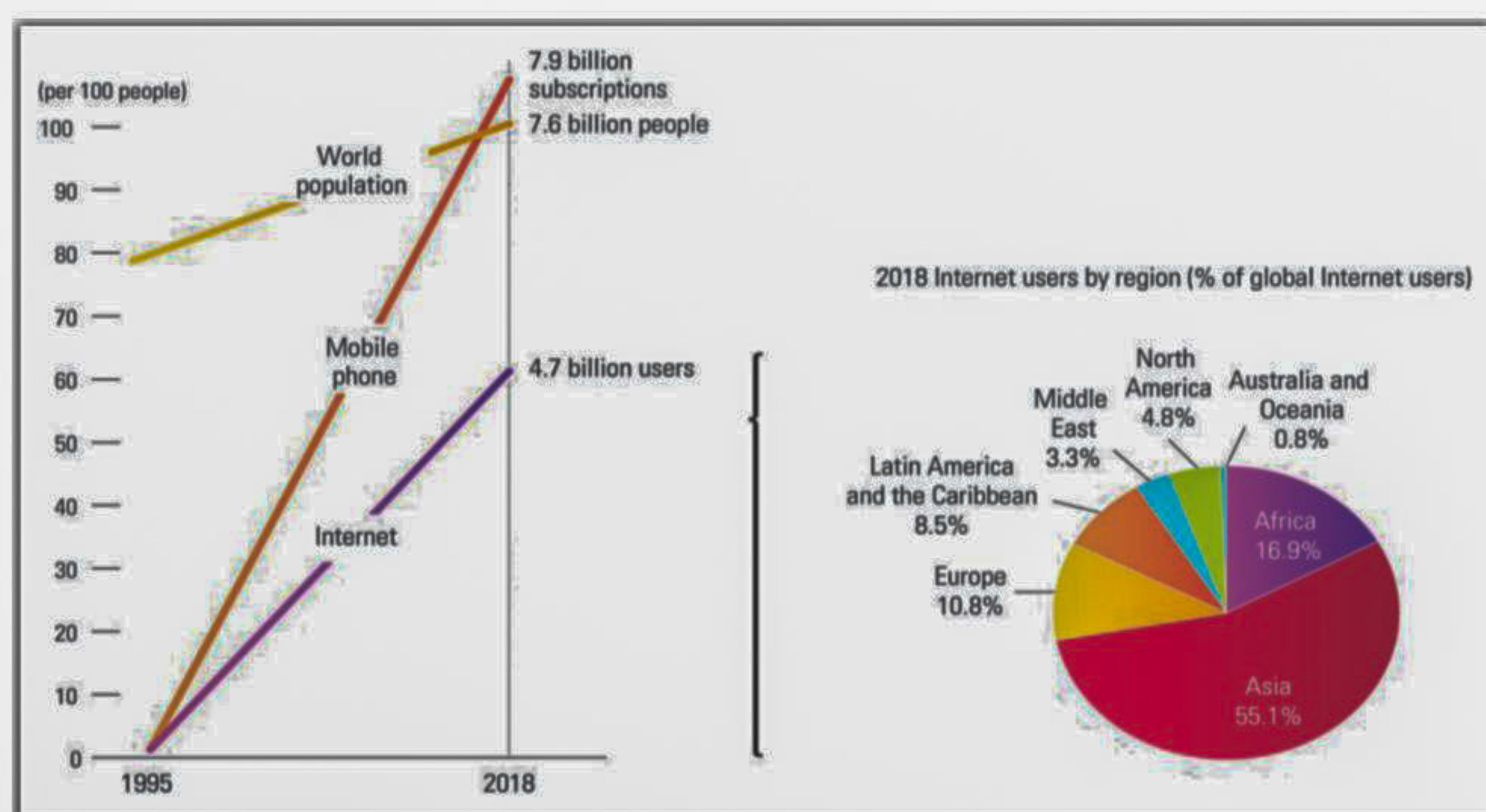
Consumer demands have also evolved with expectations for low-priced consumer goods, for fresh and new products and for digital access to products from around the world. This has increased competition for companies to provide cheap, innovative products that cater to rapidly changing trends, all the more so as digital technologies allow companies immediate and constant access to information on consumer habits and interests. A flexible approach to production and cost cutting, including labour costs, has been the producer response. Low labour costs and flexible commitments to workers allow companies to quickly

and efficiently respond to shifts in consumer needs and in the location of demand.

For workers these trends are aligning to create a world of work where creativity, skills, ingenuity and flexibility are critical. But even for those who are well positioned to compete in the emerging work system, security is lacking. Only one in four people worldwide works with a full-time, permanent contract; for those in wage and salaried employment, three out of five workers are in part-time or temporary work. With just 30 percent of the world's labour force covered by unemployment protection, a world of work that values flexibility may be a challenge to the stability of worker's lives.

The digital economy may be associated with high-tech industries, but it is also influencing a whole range of more informal activities from agriculture to street vending. Some may be directly related to mobile devices. In Ethiopia farmers use mobile phones to check coffee prices. In some villages in Bangladesh female entrepreneurs use their phones to provide paid services for neighbours. In India farmers and fishers who track weather conditions and compare wholesale prices through mobile phones increased their profits by 8 percent, and better access to information resulted in a 4 percent drop in prices for consumers. In countries as diverse as Malaysia, Mexico and Morocco, small and medium-sized enterprises with Internet access averaged 11 percent productivity gain by reducing transaction costs and barriers to market entry.

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