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## THE IMPACT OF DIGITAL TECHNOLOGIES ON LABOR MARKET

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**ABSTRACT:** The article discusses the impact of digitalization on the jobs in the global economy. Especially, the issue is sensitive regarding the rising inequality within society. As the mainstream research suggests there is evidence that automation may be great trouble for traditional workers, and vulnerable members of society.

**KEYWORDS:** digital technologies, jobs, society, vulnerable, computer.

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### INTRODUCTION

Digital platforms are recasting the relationships between customers, workers, and employers as the silicon chip's reach permeates almost everything we do—from buying groceries online to finding a partner on a dating website.

This digital transformation results from what economists who study scientific progress and technical change call a general-purpose technology—that is, one that has the power to continually transform itself, progressively branching out and boosting productivity across all sectors and industries. Such transformations are rare. Only three previous technologies earned this distinction: the steam engine, the electricity generator, and the printing press. These changes bring enormous long-term benefits. The steam engine, originally designed to pump water out of mines, gave rise to railroads and industry through the application of mechanical power. Benefits accrued as farmers and merchants delivered their goods from the interior of a country to the coasts, facilitating trade<sup>1</sup>.

As the world economy has grown more global and more digital, businesses have had to shift their competitive strategies, marketing techniques, and business models.

Economic inequality has become a prominent issue in almost all developing countries. While the rich have grown richer, wages for the median worker have been stagnant. By many measures, the gap between high

<sup>1</sup> <https://www.imf.org/external/pubs/ft/fandd/2018/06/impact-of-digital-technology-on-economic-growth/muhleisen.htm>

earners and low earners has widened substantially. , A new research shows that a substantial part of the growth in this wage gap can be attributed to computer technology.

One way computers could cause inequality is by eliminating jobs, leading to high unemployment, which in turn leads to lower wages. But that is not what is going on, especially now that unemployment is low again. Instead, new computer technologies require major new skills. Workers who learn these skills see their wages grow, but many workers have difficulty acquiring the new skills. And their wages have been stagnant, leading to a growing wage gap<sup>2</sup>.

Automation has become a concern not just for blue-collar manufacturing workers but also for white-collar workers and even professionals. New computer programs, some using artificial intelligence<sup>3</sup>, are taking over tasks for bookkeepers, bank tellers, clerks, and others. Some people argue that this replacement is causing technological unemployment.

#### Literature review.

Studies have shown that the existing workforce capacity of the economy is hardly able to promote digital transformation, and even can hinder it in many ways (Kazanin et al. 2014; Tao et al. 2018). In addition, new skills must be developed on an international level to ensure sustainability management for all countries (Global CIO Survey 2017–2018). In the USA, the expected increase in the value created by digital technology is not less impressive—it can reach 1.6–2.2 trillion dollars by 2025. The potential economic effect from the digitization of the Russian economy will increase the country's GDP by 4.1–8.9 trillion rubles (measured in 2015 rubles), which amounts to 19–34% of the total expected GDP growth (Medvedev 2018; McKinsey and Company 2019).

#### Main part.

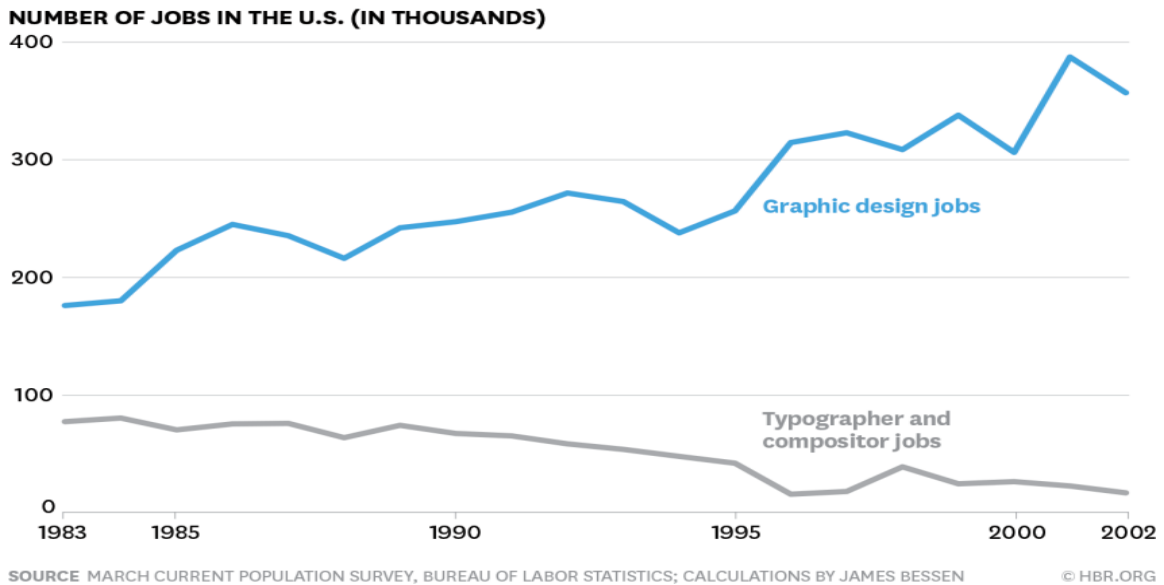
But the reality is that most jobs using computers have seen *growing* employment, not job losses. For example, jobs for bank tellers have been growing since the deployment of ATMs. And this pattern is typical overall.

However, much of the growth in jobs using computers comes at the expense of *other* occupations. Consider, for example, the effect of computers on typographers. Desktop publishing dramatically reduced jobs for typographers in the 1980s, yet it was not a case of computers replacing typographers — it was the substitution of one occupation for another. Graphic designers, using computers with desktop publishing software, have taken over much of the work of typographers. The increase in graphic designer jobs was greater than the decrease in typographer jobs:

<sup>2</sup> <https://hbr.org/2016/03/computers-dont-kill-jobs-but-do-increase-inequality>

<sup>3</sup> <https://hbr.org/2016/03/alphago-and-the-limits-of-machine-intuition>

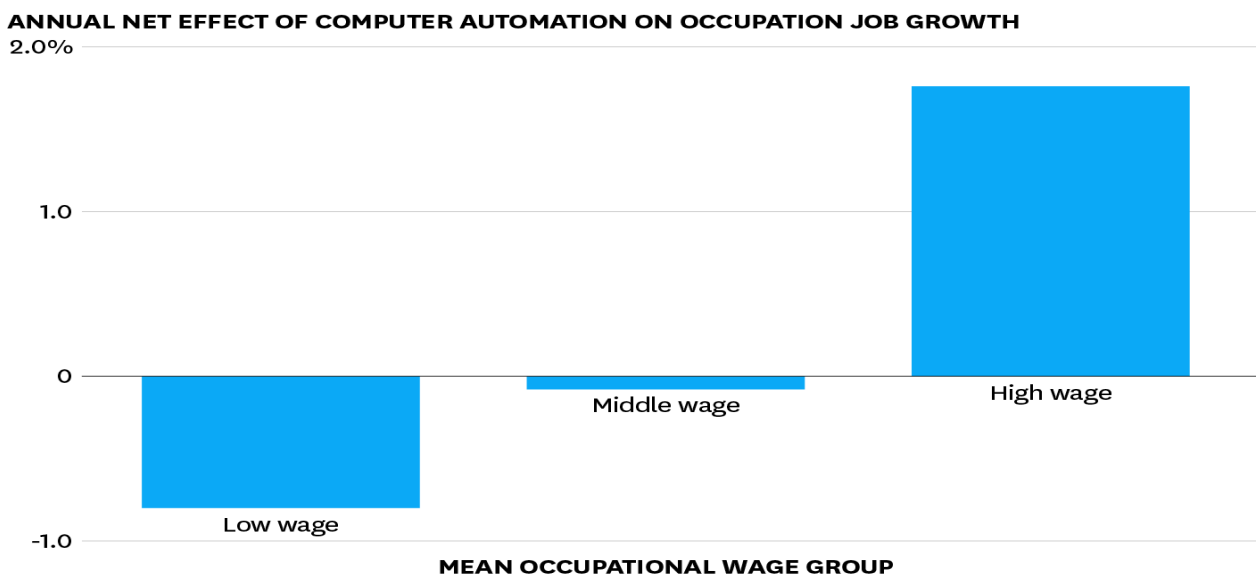
**Computers Are Destroying Jobs in Some Professions but Creating Them in Others**



The point is that computers contribute to declining employment in *some* occupations but the net effect of computers is *not* a decline in the total number of jobs. Computer automation creates about as many jobs as are lost through substitution. Thus computers are not causing technological unemployment.

Although computer automation is not causing a net loss of jobs, it does imply a substantial displacement of jobs from some occupations to others. Moreover, the burden of displacement falls disproportionately on workers in low-wage occupations, mainly because low-wage occupations use computers much less than high-wage occupations do. That is, computer automation helps high-wage occupations take over work from low-wage occupations. The net effect implies a substantial dislocation of work to higher-wage occupations:

**Computers Grow High-Wage Occupations and Shrink Low-Wage Ones**



Job displacement would not be a serious concern if workers could easily acquire the skills needed to practice new occupations. However, the evidence suggests otherwise. Indeed, even within occupations, many workers are having difficulty learning the skills needed to work effectively with new computer systems. When the best workers within an occupation are able to learn new skills while the average worker is not, the wages of the best workers grow faster than the wages of the average worker.

Over the last three decades, computer automation has not created technological unemployment, but it has displaced many workers, requiring them to learn new skills. It is possible, of course, that future automation might have a different effect.

### Conclusion.

As digital technology is developing throughout the world economy, the automation of many traditional jobs is inevitable. However, the changing labor market does not give signals to worry, as technological advances usually occur in an evolutionary way, meanwhile the economy has time to redistribute its resources in a better way. But the effect of automation of jobs can be felt harder in certain sphere, such as financial services, retail, transport and others. Besides, there is evidence that digitalization may widen the inequality within the society, which is should be prevented as soon as possible. I think that governments can somehow regulate the “rules” of adopting digital technologies, so as not to harm the vulnerable members of society, as well as maintain balance in the wage gap. In order to do this, following actions might be undertaken:

- develop robust legislation regulating the adoption of digital technologies;
- encourage entrepreneurs to cooperate with social programs;
- invest in education, so as to provide accessible education for all;
- stimulate the social packages for the vulnerable members of society.

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