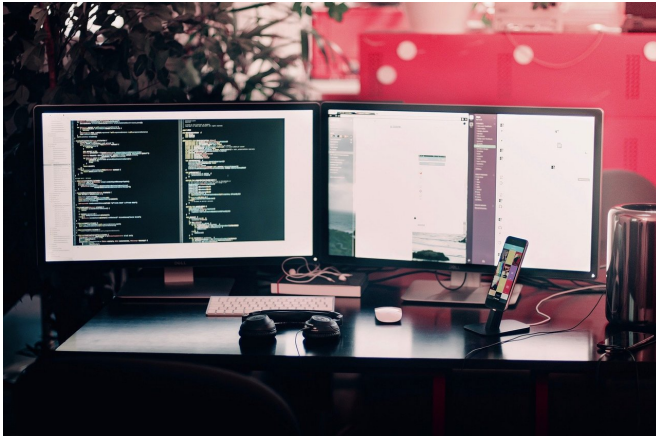


# Information technology jobs outpace most other jobs in productivity and growth since 2004

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Jobs in information technology-like computer software, big data, and cybersecurity-are providing American workers with long-lasting financial stability, suggests a new study from the University of British Columbia and the Massachusetts Institute of Technology.

"The future of [jobs](#) is in IT, and IT-intensive tasks" said Giovanni Gallipoli, co-author and associate professor from the Vancouver School of Economics at UBC. "Growth and productivity in jobs involving IT tasks are very strong, and workers who can perform such tasks have a clear competitive advantage in the labour market."

The study reveals the well documented slow-down in employment and wage gains associated with skills and education that has been recorded after the year 2000 is in fact not occurring at all for jobs that involve IT. The share of these jobs has increased substantially over the past two decades, with IT-intensive occupations growing by 19.5 per

cent between 2004 and 2017. Less IT-intensive occupations only grew by 2.4 per cent over the same period. The growth in IT jobs is more than eight times the growth rate than for other jobs over the past decade.

"While there is clear evidence that earnings growth for Americans with college degrees has somewhat flattened since 2000, earnings have actually grown significantly for individuals working in jobs involving IT tasks," said Gallipoli. "Both companies and workers stand to benefit if they invest in IT education."

Despite the decline in traditional manufacturing jobs from automation or off-shoring, the study also shows that a subset of jobs in manufacturing that involve IT tasks have increased in number, as well as having high productivity growth and returns.

According to the researchers, the rise of IT has changed the nature of employment in the manufacturing sector, creating a greater demand for workers with computing and technical expertise.

"Companies often report troubles finding enough workers for IT-intensive tasks," said MIT's Christos Makridis, the study's co-author. "This suggests the presence of a skills gap for jobs with digital and technical requirements. The insufficient number of job candidates able to perform complex IT tasks suggests the possibility of workers' mismatches in the labour market. It also suggests the need for additional training, whether formal or on the job, like apprenticeships, that focuses on the skills that are most in demand."

While much of the debate around automation and the role of technology in employment today focuses on its impact on jobs, or how workers stand to be replaced by robots, the researchers stress greater

focus needs to be paid to its effects on productivity, wages and the ongoing structural change in the [labour market](#) of both manufacturing and services.

"Our research starts to highlight these sizable effects, and the growth in employment demand for certain IT-intensive tasks cannot be easily automated or offshored," Gallipoli said. "The emergence of IT intensive jobs has had a major impact on the structure and on the distribution of wages both within and across sectors."

"As the cost of collecting and processing information continues declining, every company is going to turn into a data science company, whether they like it or not," said Makridis. "That is only going to raise the demand for information technology workers."

The study, *Structural Transformation and the Rise of Information Technology*, is published in the *Journal of Monetary Economics*.

**More information:** Giovanni Gallipoli et al. Structural transformation and the rise of information technology, *Journal of Monetary Economics* (2018). [DOI: 10.1016/j.jmoneco.2018.05.005](https://doi.org/10.1016/j.jmoneco.2018.05.005)

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