



Software: Supporting US Through COVID

PENNSYLVANIA



EMPLOYMENT

Software supports jobs all across today's economy and all across the country—from computer programmers and web designers to teachers, medical assistants, and construction workers. In Pennsylvania, the number of jobs created by the software industry has increased 5 percent since 2018.

Total
303,441 jobs
(includes indirect and induced impacts)

Direct
98,099 jobs



ECONOMIC IMPACT

Total Value-Added GDP
\$23.9 billion

(includes indirect and induced impacts)

Direct Value-Added GDP
\$21.3 billion



R&D

R&D Investment by Software Companies
\$1.1 billion¹

10.8% of
All Domestic Business R&D in Pennsylvania²

Pennsylvania's economy and workforce benefit from software's broad investment in new technologies. From deriving new value from data analytics in local industries to pushing next-generation innovations like quantum computing, the software industry's commitment to R&D ensures continued strong future growth.

METHODOLOGY

In 2020 the Bureau of Economic Analysis, the official source of US economic data, made minor revisions to its 2015–2019 estimates for GDP. These updates are primarily due to improvements in underlying source data provided by various government agencies such as the US Census and Bureau of Labor Statistics (BLS). The BLS updates included similar revisions to employment and wage data for the same period.

To ensure comparability of results over time, The Economist Intelligence Unit (EIU) also has revised its previous 2018 data/estimates to reflect these official updates, resulting in minor adjustments to the results of the 2018 study.

To estimate the total contributions of the software industry to the US economy, The EIU analyzed the direct contributions and estimated indirect and induced impacts using various economic multipliers:

- (1) *Direct contributions*: the levels of output or employment of the industry in question;
- (2) *Indirect impacts*: the inter-industry economic activity resulting from the direct contributions (e.g., purchases of inputs); and
- (3) *Induced impacts*: the additional economic activity supported by spending on goods and services by households whose income

was affected by the direct contributions and indirect impacts.

Data sources include The EIU, IMPLAN, National Science Foundation, US Bureau of Economic Analysis, BLS, US Census Bureau.

¹ National Science Foundation/National Center for Science and Engineering Statistics and US Census Bureau, Business R&D and Innovation Survey, 2018 industry breakdown. Where data is not available for 2018, the most recent year is used.

² National Science Foundation/National Center for Science and Engineering Statistics.



Software: Supporting US Through COVID UNITED STATES¹



EMPLOYMENT

In addition to providing the digital infrastructure that enabled our personal and professional lives during the pandemic, the software industry helped create jobs all across the economy and all across the country. In fact, the software industry supports 12.5 million jobs in industries outside software—jobs in every economic sector. The total number of jobs supported by the software industry has increased nearly 6 percent since 2018. This report, from Software.org: the BSA Foundation and conducted in 2021 by The Economist Intelligence Unit (EIU), captures the positive economic impact of the software industry in the United States at the state and national level.

Total
15.8 million jobs
Direct
3.3 million jobs



GDP

Software played a crucial role in enabling our lives through the pandemic, allowing us to connect socially with friends and family. At the same time, software helped businesses of all sizes to continue their work, underpinning innovation and driving growth in nearly every economic sector. Overall, software's contribution to total US value-added GDP has grown more than 17 percent since 2018.

Total Value-Added GDP
\$1.9 trillion
(includes indirect and induced impacts)²

Direct Value-Added GDP
\$933 billion



WAGES

Average Annual Wage for
Software Developers
\$114,270³



R&D

R&D Investment by Software Companies
\$103 billion⁴
27.4% of All Domestic Business R&D in US⁵

¹ All data is from 2020 unless otherwise indicated.

² For definitions of "indirect" and "induced," see www.software.org/softwarejobs.

³ US Department of Labor, Bureau of National Statistics, Occupational Employment Statistics.

⁴ National Science Foundation/National Center for Science and Engineering Statistics and US Census Bureau, Business R&D and Innovation Survey. 2018 Industry breakdown.

⁵ Ibid.