

THE ECONOMIC IMPACT OF SOFTWARE



UNITED STATES¹

Software is so much more than your desktop at work. Software is apps. Software is data. Software is cloud computing. It creates breakthroughs and drives growth in nearly every industry. Software empowers countless people and American businesses, and improves our lives each day in ways big and small. Along with all this progress comes the dramatic, positive impact software is making on our national economy each year. *The Economic Impact of Software*, a first-of-its-kind study from BSA | The Software Alliance conducted in 2016 by The Economist Intelligence Unit (EIU), captures the breadth of the software industry in the US and the sweeping economic impact it is making at state and national levels.

Total Value-Added GDP:
\$1.07 trillion

(includes indirect and induced impacts)²

Direct Value-Added GDP:
\$475.3 billion



EMPLOYMENT

Direct:
2.5 million jobs

Total:
9.8 million jobs
(includes indirect and induced impacts)

From software developers and web designers to futurists, project coordinators, administrative assistants, and accountants, software creates jobs for a wide variety of professionals in today's workplaces. These numbers capture jobs created directly by the software industry, as well as jobs the software industry supports through indirect and induced impacts.



WAGES

Average Annual Wage for
Software Developers:
\$108,760³

A software developer's wage is more than twice the average annual wage for all US occupations, which was \$48,320 in 2015.⁴



RESEARCH & DEVELOPMENT

\$52 billion⁵
R&D Investment by Software Companies
**17.2% of All Domestic Business
R&D in the US⁶**

From developing new data analytics to driving breakthrough technologies like cognitive computing, the software industry's commitment to R&D continues to spur innovation at unprecedented rates.

¹ All data is from 2014 unless otherwise indicated.

² For definitions of "indirect" and "induced," see Methodology section on the other side of this document.

³ US Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics. Data from May 2015.

⁴ Ibid.

⁵ National Science Foundation/National Center for Science and Engineering Statistics and US Census Bureau, Business R&D and Innovation Survey, 2012 Industry breakdown. Where data is not available for 2012, the most recent year is used.

⁶ National Science Foundation/National Center for Science and Engineering Statistics.

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PENNSYLVANIA

Total Value-Added GDP:

\$17 billion

(includes indirect and induced impacts)

Direct Value-Added GDP:

\$13.3 billion



EMPLOYMENT

Direct: **81,603 jobs**

Total: **229,603 jobs**

(includes indirect and induced impacts)

From software developers and web designers to futurists, project coordinators, administrative assistants, and accountants, software creates jobs for a wide variety of professionals in today's workplaces. These numbers capture jobs created directly by the software industry, as well as jobs the software industry supports through indirect and induced impacts.



RESEARCH & DEVELOPMENT

\$992 million⁷

R&D Investment by Software Companies

10.7% of All Domestic Business R&D in Pennsylvania⁸

Pennsylvania's economy and workforce benefit from software's broad investment in new technology. From developing new data analytics to driving breakthrough technologies like cognitive computing, the software industry's commitment to R&D continues to spur innovation at unprecedented rates.

⁷ National Science Foundation/National Center for Science and Engineering Statistics and US Census Bureau, Business R&D and Innovation Survey, 2012 Industry breakdown. Where data is not available for 2012, the most recent year is used.

⁸ National Science Foundation/National Center for Science and Engineering Statistics.

METHODOLOGY

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);
- (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, US Bureau of Labor Statistics, US Census Bureau