

THE ECONOMIC IMPACT OF SOFTWARE

EUROPEAN UNION¹

Software is ubiquitous. It is at the heart of every aspect of modern life. We depend on software at the office, at school, at home, in our leisure time, when we travel, and when we communicate. Software helps us be more effective, more creative, and more efficient. BSA | The Software Alliance has commissioned this expert analysis by The Economist Intelligence Unit (EIU) on the economic contributions of the software industry in both the EU28 and its five biggest Member States: France, Germany, Italy, Spain, and the United Kingdom. The research findings provide important insights on how the European Union (EU) can take advantage of software's potential.

Software delivers a total value-added (direct, indirect, and induced)² GDP of €910 billion — over 7 percent of the EU28 total GDP. This contribution comes from all sectors and all levels of the economy: farming, manufacturing, services, education, and health care.

Total* Value-Added GDP:
€910 billion

7.4% of GDP

Direct Value-Added GDP:
€249 billion

2% of GDP



EMPLOYMENT

Direct:
3.1 million jobs
1.4% of total EU jobs

Total:*
11.6 million jobs
5.3% of total EU jobs

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 Industry:

€45,333

by comparison...

All industries:
€33,790³

Service sector:
€25,214⁴

The EU average wage for the software industry is 34 percent higher than the EU average wage and 80 percent higher than the EU average wage for the services sector.

Total annual wages paid by the software industry:
€139.2 billion



R&D

€12.7 billion
Software R&D expenditures⁵

7.3% of R&D expenditures
by business enterprise⁶

Software companies in the EU invest strongly in software R&D — almost €12.7 billion in 2013.

* direct, indirect, induced

¹ All data are from 2014 and were provided by EIU unless otherwise indicated.

² EU GDP data from Eurostat.

³ Eurostat: Mean annual earnings, Structure of earnings survey 2014.

⁴ Eurostat: Annual detailed enterprise statistics for services 2014.

⁵ Software R&D expenditures by business enterprise in 2013.

⁶ Software R&D expenditures by business enterprise in 2013, compared to total R&D expenditures by business enterprise.

ITALY⁷

Italy is the EU's fourth-largest economy. Its main industrial sectors are automotive, machine manufacturing, and aerospace. In addition, Italy also supports a large rural sector and is a major producer of food and wine. The Italian economy supports large numbers of small- and medium-sized enterprises with an emphasis on high-end, high-margin products.

The software industry in Italy directly contributed more than €20 billion, much lower than the UK, Germany, or France, but still considerably more than Spain.

At 3.2 percent, the software industry's added-value GDP in Italy was, in relative terms, about 43% of the EU average and almost on a par with Spain.

Total* Value-Added GDP:
€50.8 billion

3.2% of Italian total

Direct Value-Added GDP:
€20.3 billion

1.3% of Italian total



EMPLOYMENT

Direct:
289,011 jobs

1.2% of total Italian jobs

Total*
743,921 jobs

3.3% of total Italian jobs

The Italian software sector provides almost 300,000 highly paid, highly skilled jobs.



WAGES

Average Annual Wage
for Software Industry:

€34,909

by comparison...

All industries:
€34,506⁸

Service sector:
€23,607⁹

The average wage in the Italian software industry is almost 50 percent higher than that in the services sector and slightly higher than the national average wage.

Total annual Italian wages paid by the software industry:
€10.1 billion



R&D

€864 million

Software R&D expenditures¹⁰

7.5% of R&D expenditures¹¹
by business enterprise

The software industry's investment in R&D in Italy is, in relative terms, fourth of the "Big Five" countries.

* direct, indirect, induced

⁷ All data are from 2014 and were provided by EIU unless otherwise indicated.

⁸ Eurostat: Mean annual earnings, Structure of earnings survey 2014.

⁹ Eurostat: Annual detailed enterprise statistics for services 2014.

¹⁰ Software R&D expenditures by business enterprise in 2013.

¹¹ Software R&D expenditures by business enterprise in 2013, compared to total R&D expenditures by business enterprise.

METHODOLOGY

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

- (1) *Direct contributions*: the levels of output, employment, or wages 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 itself, Eurostat, the European Central Bank, OECD, and the World Input-Output Database.