

# THE ECONOMIC IMPACT OF SOFTWARE

## EUROPEAN UNION<sup>1</sup>

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)<sup>2</sup> 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: €33,790<sup>3</sup> Service sector: €25,214<sup>4</sup>

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 expenditures<sup>5</sup>

7.3% of R&D expenditures  
by business enterprise<sup>6</sup>

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

\* direct, indirect, induced

<sup>1</sup> All data are from 2014 and were provided by EIU unless otherwise indicated.

<sup>2</sup> EU GDP data from Eurostat.

<sup>3</sup> Eurostat: Mean annual earnings, Structure of earnings survey 2014.

<sup>4</sup> Eurostat: Annual detailed enterprise statistics for services 2014.

<sup>5</sup> Software R&D expenditures by business enterprise in 2013.

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

FRANCE<sup>7</sup>

France is the EU's third-largest economy and host to an increasing number of cloud-born software companies with a promising future. It is also home to leading IT companies serving businesses and critical sector organisations worldwide such as Atos, Dassault Systèmes, Cegecim, and Thales.

The software industry in France directly contributed €37 billion to the economy and more than €113 billion in total — more than double that of Italy and almost three times as much as Spain.

Of the five EU Member States covered in this report, the total industry contribution (including direct, indirect, and induced impacts) to France's economy as a percentage of GDP (5.3 percent) is second only to that in the UK (7.1 percent).

Total\* Value-Added GDP:  
**€113.1 billion**

5.3% of French total

Direct Value-Added GDP:  
**€37 billion**

1.7% of French total



## EMPLOYMENT

Direct:  
**446,272 jobs**

1.6% of total French jobs

Total\*  
**1,198,304 jobs**

4.4% of total French jobs

Providing 1.6 percent of total jobs, the French software sector is second only to the UK in its impact on the domestic employment market.



## WAGES

Average Annual Wage  
for Software Industry:

**€48,017**

by comparison...

All industries:  
€36,086<sup>8</sup>

Service sector:  
€31,069<sup>9</sup>

Software wages in France are the second highest among all "Big Five" countries, 33 percent more than the country average and more than 54.5 percent higher than the French services sector average.

Total annual French wages paid by the software industry:  
**€21.4 billion**



## R&amp;D

**€2.6 billion**

Software R&D expenditures<sup>10</sup>

8.5% of R&D expenditures<sup>11</sup>  
by business enterprise

French investment in software R&D is, in relative terms, third among all "Big Five" countries, after the UK and Spain. In absolute terms it is second only to Germany.

\* direct, indirect, induced

<sup>7</sup> All data are from 2014 and were provided by EIU unless otherwise indicated.

<sup>8</sup> Eurostat: Mean annual earnings, Structure of earnings survey 2014.

<sup>9</sup> Eurostat: Annual detailed enterprise statistics for services 2014.

<sup>10</sup> Software R&D expenditures by business enterprise in 2013.

<sup>11</sup> 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.