

ONLINE JOBS BOOSTING EUROPE'S COMPETITIVENESS

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I. Executive Summary

This study estimates the economic value of the internet sector in the EU in 2010, using an employment-income method. The internet sector is found to employ 3.4 million people, or approximately 1.6% of the total active population in the EU. Its economic value is estimated to be 119.8 billion euro, or about 1% of the EU GDP. The study reveals that employment created by the internet sector in the EU has not yet unleashed its full potential. A likely explanation for this is the significant importation of digital goods and services from the USA. In the EU, where most of internet employment and economic value can be found in the Internet Service Providers (ISP) sector, and concentrated in the United Kingdom, Germany, and France, other segments of the internet sector contribute substantially to economic growth. While the European Union's digital advertising industry directly employs almost 80,000 people, or about 5.9% of the total internet sector employment, its importance goes beyond direct employment.

The European Union has a great opportunity to unleash the tremendous employment potential of the digital advertising sector: accelerate the creation of new jobs and foster economic growth. The study shows an unexploited potential of 400,000 to 1.5 million new jobs in the digital economy, if the entire EU successfully mirrors the equivalent performance in the USA or the best performing EU countries.

This would boost the transition to a data-driven economy, a key condition to achieve European Commission's goal of getting every European digital.

II. Background and Objectives

The European Commission's Digital Agenda for Europe aims at achieving high-levels of employment, a low carbon economy, and enhanced productivity and social cohesion¹. Its objectives are to deliver sustainable economic and social benefits from a digital single market based on fast (≥ 30 Mbps) and ultrafast (≥ 100 Mbps) internet and interoperable applications.

Reaching the ambitious goal of getting every European digital will only be possible if online services are affordable. To facilitate this, it is important that European Commission's policies facilitate funding of business models

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Digital Agenda for Europe. Brussels, August 2010, p. 3.

through online advertising² and avoid a potential risk for a second digital divide: Europeans who can afford to pay for basic services like email and Europeans who cannot. This is not an unrealistic scenario as the current economic crisis is already forcing some users to go offline. The European Commission should pay particular attention to this challenge.

The internet is increasingly contributing to national economies by creating employment, stimulating entrepreneurship, developing business opportunities, fostering productivity, and spurring innovation and collaboration. This report demonstrates the importance of the internet sector for employment in the EU national economies³.

The objective of this study is to provide estimates on employment and economic value of the internet sector in the EU in 2010⁴, and inform policy makers about potential avenues to support their vision and initiatives.

III. Key Findings

In 2010 the European internet sector employed a total of 1.35 million people directly in jobs that built or maintained the infrastructure, facilitated its use, or conducted advertising and commerce on that infrastructure. This represents 0.63% of the total active population in the EU. Following the methodology developed by the Center for Research in Electronic Commerce at the University of Texas, Austin ('CREC'), the Center for e-business at M.I.T., and Hamilton Consultants with Harvard Business School, and used by the IAB NYC 2009 study (see the Methodology section below) we assume that each internet job supports an additional 1.54 indirect jobs in the economy. This results in a total employment of 3.4 million people, or approximately 1.6% of the total active EU population.

Applying *the employment-income method* to estimate the economic value of the internet sector in the EU, we find that it accounts for about EUR 47.2 bn., or approximately 0.4 % of the EU's GDP. However, if the *employment multiplier* of 1.54 indirect jobs is applied, the EU internet

² It is important to note that online advertising is not the only revenue stream for digital businesses, as these can also be funded through traditional pay-for models.

³ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

⁴ While the referenced period is 2010, the outcome of this study is still useful as, according to IAB Europe's AdEx study, the market size kept increasing but the discrepancies between Members States remained fundamentally the same between 2010 and 2012.

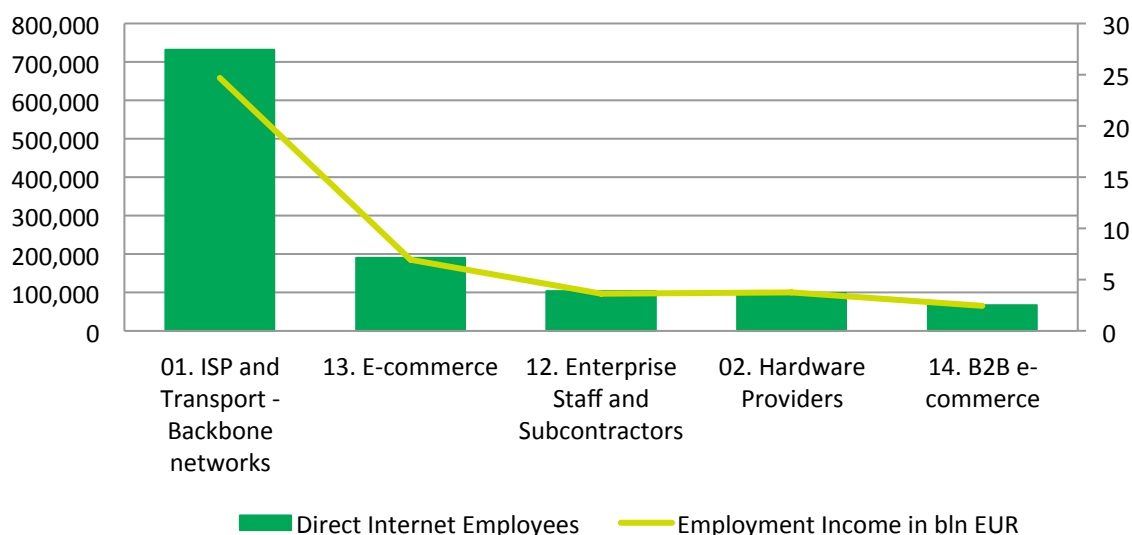
sector amounts to EUR 119.8 bn., or about 1% of the EU’s GDP (see Table 1).

Table 1: Economic Value of the internet Sector in the EU in 2010

Approach	Estimate	Estimate as %
Employees – direct	1.35 million	0.63 % of total employment
Employees - total	3.4 million	1.6% of total employment
Employment Income - direct	EUR 47.2 billion	0.4 % of GDP
Employment Income - total	EUR 119.8 billion	1 % of GDP

Employment and employment income can be broken down according to a segment of the internet sector; Exhibit 1 in Annex I shows the economic value of 14 segments of the EU’s internet sector. Figure 1 highlights the top 5 segments in terms of employment.

Figure 1: Direct internet Employees and Employment Income in the EU (Top 5 segments for 2010)

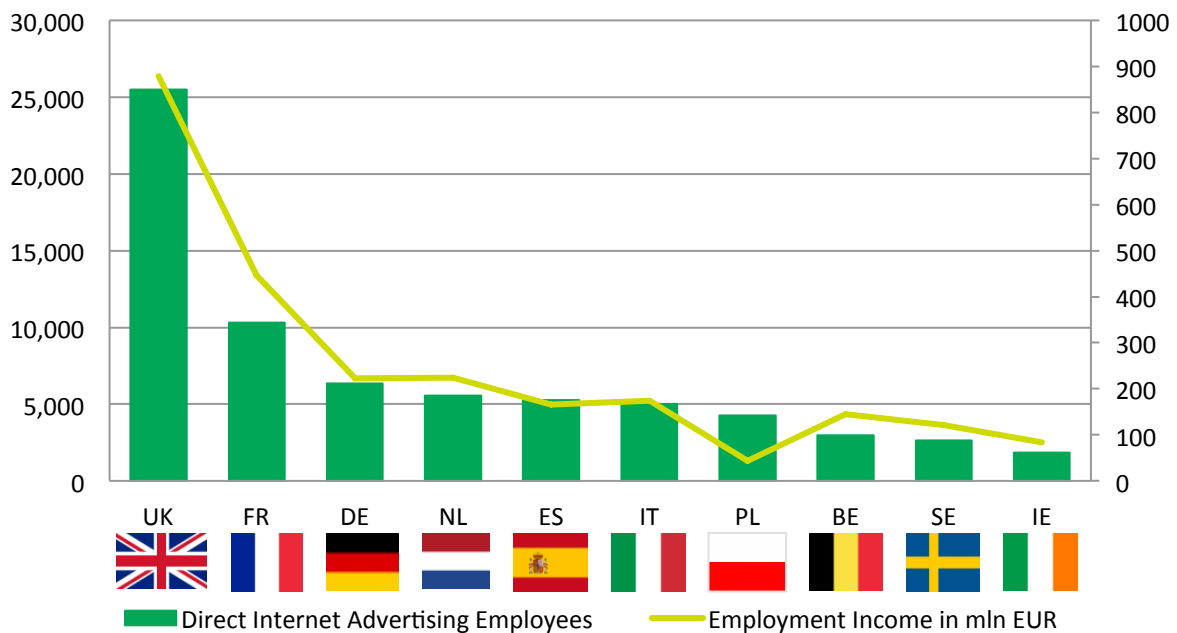


While the ISPs provides the greatest number of internet sector jobs and economic value, e-commerce and enterprise provide also substantial employment, *our research illustrates the importance of digital advertising to the internet sector*. Search engines, content sites, digital advertising agencies, and ad networks segments represented about 80,000 jobs, or about 5.9% of EU’s internet sector employment. The top three countries with the highest employment for these segments are the UK, France and Germany (Figure 2).

It should be emphasised that digital advertising is a significant part of the internet sector in the EU; a finding consistent with digital advertising research studies, including:

- IAB Europe’s AdEx 2010 (conducted in 25 European countries⁵) according to which digital advertising accounted for EUR 17.7 bn., representing an annual increase of 15.4%.
- A McKinsey study highlighting the relatively large macro-economic impact of advertising in creating growth for the G20 countries (between 10% to 15% of total economic growth), with digital advertising expanding rapidly (17% of total media expenditure) and acting as a strong complement to employment⁶.
- A McKinsey study, concluding that digital advertising generates a substantial consumer service surplus (providing European citizens with services worth EUR 69 bn.⁷).
- PARIS, Personalised Advertisements buIlt from web Sources, a multidisciplinary study on innovative formats in personalized digital advertising, to drive employment in the internet advertising sector (see www.parisproject.be).

Figure 2: Direct Internet Advertising Employment in 2010 (Top 10 countries)



The results also reveal substantial country divergences. Figure 3 lists the internet sector employment and economic value of the top ten EU member states economies (an overview for all EU member states economies is available in Exhibit 2 in Annex I).

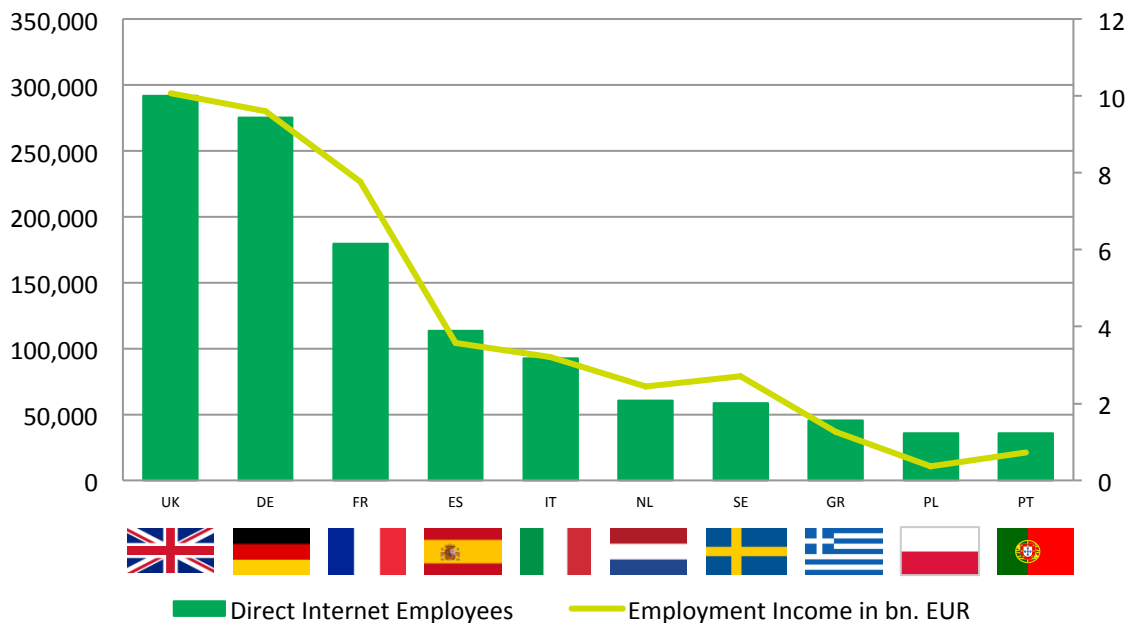
⁵ [IAB Europe’s AdEx, 2010.](#)

⁶ [Bughin, J. and Spittaels, S. Advertising and Economic Growth, McKinsey & Company. 2011.](#)

⁷ [Consumers driving the digital uptake. McKinsey & Company. September 2010.](#)

55% of all EU's internet employees are active in the United Kingdom, Germany, and France and represent over half of the employment-income value of the internet sector. While the UK has the highest absolute number of internet employees in the EU, Sweden and Ireland employ relatively more people in the internet sector, as a percentage of the total active population.

Figure 3: Direct internet Employment in 2010 (Top 10 Countries)



IV. Key Implications

While the ISP segment provides significant employment and economic value of the internet sector in the EU, other segments should be supported by appropriate policies. Digital advertising, as carried out by search engines, content sites, advertising agencies, and ad networks, not only create significant employment and economic value, but also drive economic growth and generate a tremendous consumer surplus. The United Kingdom, Germany, and France provide the largest share of employment and economic value of the internet and digital advertising sectors. Policies that enhance and support the internet sector and digital advertising across the EU will benefit the European Commission's Digital Agenda for Europe by delivering sustainable economic and social benefits leveraged from a digital single market.

This study also demonstrates that employment in the EU's internet sector has a huge potential when making a comparison with the USA (the global leader in digital advertising). The internet sector has proven to be a major driver of economic growth. It is therefore crucial to maintain its momentum. For instance, the internet contributed between 4% and 15% of the economic growth over the past 15 years – this has increased to between 12% and 33% in the last five years in Sweden, Germany, the United Kingdom, France and Italy. In addition, in these countries, the internet was found to directly contribute between 1.7% and 6.3% of GDP, compared to 3.8% for the USA⁸.

Given the sizeable impact of the internet sector on GDP growth, policy makers should consider focusing their efforts towards initiatives that further support the development of the internet sector within the EU. While the weight in GDP of internet consumption and expenditure has been assumed to be bigger than the agriculture, energy, or other critical industries (see footnote 16), our study reveals that employment created by the EU internet sector is relatively small (Figure 4). A possible explanation for this discrepancy is the importation of digital goods and services from the USA, with firms creating economic value in their segment of the internet sector in multiple countries, yet supporting their business activities mainly from the USA. Therefore, USA-based internet sector players may generate significant revenues in the EU but not generate much employment. Active stimulation of investments in the various segments of the internet sector in support of a digital single market could therefore drive up employment opportunities in the EU. Such investments can be expected to yield multiplier effects in terms of economic growth.

What is the potential for new jobs in the digital economy? If all European countries would perform as well as the best - Sweden - Europe could create an additional 1.5 m jobs⁹.

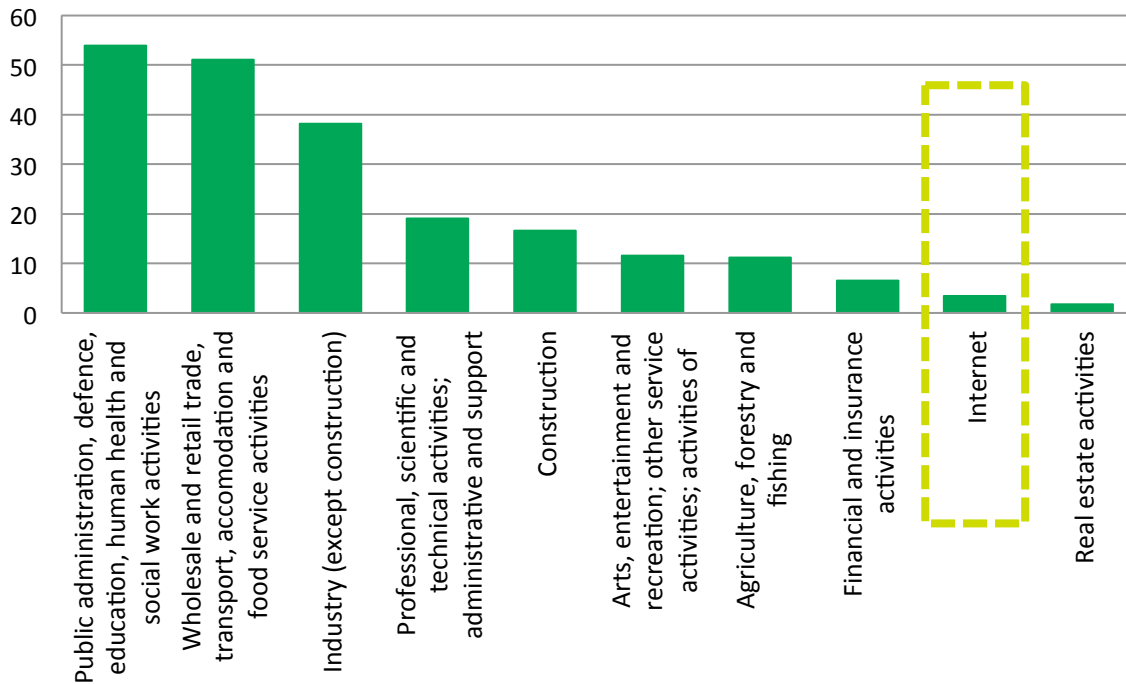
An additional one million jobs would be created in the European digital economy should all of Europe achieve the average of the top five countries - Sweden, Ireland, UK, Malta and Greece.

⁸ Bughin, J. and Manyika J. Internet Matters. Essays in Digital Transformation. 2011.

⁹ The study reveals that Sweden has the highest percentage of direct internet employees in the total active population (1.32%). The average percentage of direct internet employees of the top 5 countries (Sweden, Ireland, UK, Malta and Greece) is 1.06%. For the whole of the EU, the average is 0.63%, whereas the average for the USA is 0.80%.

Should European performance align with USA’s average, an additional 400,000 digital jobs could be created in Europe.

Figure 4: Number of employees in different sectors in EU27 in 2010 (in millions)



V. Conclusion

This study estimates the employment and economic value of the internet sector for the EU (see Table 1) and finds most of the internet sector employment and employment income is concentrated in a few segments and EU member states’ economies.

The EU has a tremendous opportunity to leverage the employment potential of the digital advertising sector and thereby support significantly the Digital Agenda for Europe’s goals.

The Digital Agenda’s success will depend to a large degree on whether the EU decides to allow digital advertising to realise its full potential. Data protection and privacy regulations will be one determining factor. This study aims at contributing to a facts-based approach to policymaking in Europe.

VI. Methodology

This research study was funded by IAB Europe, and is based on the methodology that the Center for Research in Electronic Commerce (CREC) at the University of Texas in Austin used to estimate that the internet employed about 1.2 million people in the USA and generated USD 301 bn. p.a.¹⁰ The researchers categorised the internet as an ecosystem consisting of various layers: infrastructure, applications, intermediary, and commerce. They further summed employment and revenues of companies at each of those layers to calculate the estimates. In a follow-up study, CREC estimated employment at 3.1 m people and revenues at USD 830 bn.

In 2002, the centre for e-business at M.I.T. mapped internet financial flows, categorising the internet sector in various segments including advertising, internet service providers, backbone networks, and e-commerce sites. While the study estimated the value of these financial flows, O'Donnell (M.I.T. Program on Internet and Telecoms Convergence), warned that *"it is relatively easy to gather information on the size of individual internet industry segments ... (but hard to) determine the disposition of revenues in any (one of them)"*¹¹.

A study commissioned by IAB USA (IAB New York City study¹²) and undertaken by Hamilton Consultants (with Dr. Deighton and Dr. Quelch from Harvard Business School) builds on the CREC and M.I.T. studies and organised the economic activity on the internet in fourteen segments. The economic contribution by each segment was estimated through: employment value, internet sector revenue, i.e. advertising, retail transactions (net of cost of goods) and payments to ISPs, and time value approach (value of time spent on the internet). Table 2 summarises the key findings. A follow-up study reveals that direct employment in the US internet ecosystem has doubled, with 1 million new jobs added in 2011 and the first two quarters of 2012, to the million that already existed in 2007. In total, the study estimates that about 5.1 million people owe their

¹⁰ Anitesh Barua, Jon Pinnell, Jay Shutter and Andrew Whinston, "Measuring the Internet Economy: An Exploratory Study," Center for Research in Electronic Commerce, The University of Texas at Austin, 1998.

¹¹ O'Donnell, Shawn "An economic Map of the Internet," Center for eBusiness @ MIT, <http://ebusiness.mit.edu> at MIT Sloan School, September 2002.

¹² IAB NYC. Economic Value of the Advertising-Supported Internet Ecosystem. Hamilton Consultants with Dr J. Deighton and Dr J. Quelch of Harvard Business School. June 10, 2009. Cambridge, Massachusetts.

livelihoods to the existence of the internet¹³. Social media companies having direct contact with consumers including Facebook, YouTube, and Twitter, grew fast, yet job growth was even stronger in a supporting layer to such firms, including digital advertising agencies, ad networks, ad exchanges, customer analytics firms, and listening platforms. Mobile was not found to be a big employer - yet.

Table 2: Economic Value of the Internet Sector in the USA in 2007 (IAB NYC, 2009)

Approach	Estimate	Estimate as %
Employees (direct)	1.2 million	0.8% of total employment
Employees (total)	3.05 million	2% of total employment
Employment Income (direct)	USD 119 bn.	0.8% of GDP
Employment Income (total)	USD 302 bn.	2% of GDP
Payments	USD 175 bn.	1.16% of GDP
Time	USD 680 bn.	4.53% of GDP

In this study, we apply the same methodology as the IAB NYC 2009 study and assess the employment of the EU internet sector in 2010, considering for each segment a representative list of companies and corresponding actual employment data¹⁴. For each company we estimated the percentage of employment that can be attributed to internet-related activities, based on expert opinions and ratios in the IAB NYC 2009 study. For internet segments 12, 13, and 14, we estimated employment numbers using specialized studies¹⁵ and IAB NYC 2009 study ratios. Unlike the IAB NYC 2009 study, employment generated by physical delivery for e-commerce, and individuals for whom eBay is a primary source of income, were not included, as no reliable data is available. Following the IAB NYC study methodology, we did not account for potential job losses stemming from the economic use of the internet. McKinsey research demonstrated, however, that 2.4 jobs were created for

¹³ D. Gerdeman. Harvard Business School Working Knowledge. New Winners and Losers in Internet Economy. Nov 26, 2012.

¹⁴ <http://www.bvdep.com/us-en/AMADEUS.html> The AMADEUS database is exclusive to BvDEP and its information providers and is not available over any other platform. BvDEP identifies the best source of information in each country and applies strict inclusion criteria to prevent any bias in coverage. In the case no data was available for 2010, we used the most recent data available.

¹⁵ <http://iawmd.com/>; <http://www.iwanet.org/>; LinkedIn contact; The Boston Consulting Group Economy.be, The Connected Kingdom, Fattore Internetinternet, Interned; DIBS Payment Services e-commerce survey Europe 2010; www.newmediatrendswatch.com; Eurostat; White Paper B2B E-Commerce, Prof. Dr. R. Sonntag, T-Systems Multimedia Solutions GmbH.

every job destroyed by the internet in France, while this number was 2.6 in a similar McKinsey global SME survey¹⁶.

Following IAB NYC 2009 study's methodology, we consider both direct and indirect employment created by the internet and maintain the assumption that each job created by the internet supports an additional 1.54 jobs in the economy. We considered the active population for each of the EU member states (rather than the total population) to express internet sector employment as a percentage of total employment. To estimate employment income, the average annual labour cost per employee for each member state was applied, and expressed as a percentage of GDP, based on OECD-data¹⁷. The data and the sources are specifically identified in an Excel spreadsheet available on request from IAB Europe.

VII. About the Authors

Steve Muylle, PhD, is a Full Professor and Partner at Vlerick Business School, and chairs the Area Marketing. He also is a Professor in B2B Marketing at Ghent University and was on the faculty of the Owen Graduate School of Management, Vanderbilt University (visiting PhD student in Electronic Commerce and internet Marketing), the Edwin L. Cox School of Business, Southern Methodist University (Research Associate, Visiting Professor in e-business), Solvay Management School (Professor), and was a doctoral fellow at the Intercollegiate Centre for Management Science, Belgium (1997-2000). His research interests are in the areas of management of electronic commerce, B2B marketing and supply management. His research work has been published in leading scientific outlets including the Communications of the ACM, the California Management Review, the Decision Support Systems and Electronic Commerce Journal, Electronic Commerce Research and Applications, IEEE Computer Society Proceedings, and the MIT Sloan Management Review. He received multiple awards for his research and teaching and has worked with many companies, both large organizations and medium-sized enterprises, on various education and research projects. Steve Muylle also

¹⁶ Bughin, J. and Manyika J. Internetinternet matters. Essays in Digital Transformation. 2011.

¹⁷ http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_agan&lang=en
http://epp.eurostat.ec.europa.eu/NavTree_prod/AppLinkServices?pid=458_1209540_458_211810_211810&lang=en&appId=nui&appUrl=http%3A%2F%2Fappsso.eurostat.ec.europa.eu%2Fnui%2Fshow.do%3Fdataset%3Dlfsa_pganws%26lang%3Den
<http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tec00001&language=en>
http://www.oecd.org/document/0,3746,en_2649_201185_46462759_1_1_1_1,00.html



serves frequently as a trainer in executive education programs for leading multinational companies.

Elke Vijverman is a research associate in the Area Marketing at Vlerick Business School. After obtaining her Master in History at the Vrije Universiteit Brussel, Belgium, she obtained a postgraduate degree in Marketing at University College Brussels where she was granted the Special Award in Marketing. Before, she worked in a research function with Roularta Media Group.

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This study was prepared by Vlerick Business School for IAB Europe.

VIII. Annex I

Exhibit 1: Direct Internet Employees and Employment Income in the EU per segment in 2010

Internet Segment	Employees	Employment- Income (millions EUR)
01. internet Service Providers and Transport - Backbone networks	731,919	24,663
02. Hardware Providers	97,942	3,747
03. Information Technology Consulting and Solutions Companies	17,415	643
04. Software Companies	20,041	715
05. Web Hosting Companies and Content Management Companies	11,682	374
06. Search Engines/Portals	10,185	338
07. Content sites: news sites - media companies - social networking sites	29,418	1,054
08. Software as a Service (Saas)	21,688	749
09. Advertising Agencies and Ad Support Services - Large General Agencies (largest 10) - Marketing Research Companies	23,733	787
10. Ad Networks	16,324	551
11. E-Mail Marketing and Support	13,959	513
12. Enterprise Staffs and Subcontractors Responsible for internet Advertising, Marketing and Web Design	102,883	3,650
13. E-commerce: E-tailing, E-brokerage, E-banking, E-travel and Other E-services	189,421	6,937
14. B2B e-commerce	67,120	2,436
Total	1,353,720	47,155

**Exhibit 2: Direct internet Employees and Employment Income
in EU27 per country in 2010**

Country	Employees	Employment Income (million EUR)	Employment Income/GDP (%)
United Kingdom	291.828	10.066	0.68
Germany	275.498	9.607	0.39
France	179.653	7.771	0.41
Spain	113.690	3.570	0.34
Italy	92.748	3.216	0.21
The Netherlands	60.666	2.448	0.42
Sweden	58.658	2.708	0.88
Greece	45.309	1.253	0.56
Poland	35.990	366	0.11
Portugal	35.848	733	0.43
Belgium	27.241	1.328	0.38
Denmark	26.841	1.337	0.59
Ireland	20.542	932	0.58
Romania	18.097	139	0.12
Finland	14.586	617	0.34
Hungary	10.688	126	0.13
Slovakia	9.463	129	0.20
Czech Republic	8.638	138	0.10
Austria	8.614	349	0.12
Bulgaria	4.609	20	0.06
Latvia	3.040	35	0.19
Estonia	2.695	36	0.25
Lithuania	2.338	26	0.10
Slovenia	2.167	52	0.15
Luxemburg	2.130	116	0.29
Malta	1.630	24	0.38
Cyprus	522	12	0.05
Total	1.353.720	47.155	0.40

IX. Annex II – Results per country

Country	Austria
# Internet Employees (Source: Amadeus)	8,614
# Internet Employees (Source: Amadeus) * Multiplier	21,880
# Total Employees 15-64y (Source: Eurostat)	4,054,276
# Internet Employees / # Total Employees	0.21%
# Internet Employees * Multiplier / # Total Employees	0.54%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 40,539.16
Labour Cost Internet Employees (Source: OECD)	€ 349,210,986.80
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 886,995,906.46
GDP in Euro (Source: OECD)	€ 280,157,300,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.12%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.32%

Country	Belgium
# Internet Employees (Source: Amadeus)	27,241
# Internet Employees (Source: Amadeus) * Multiplier	69,192
# Total Employees 15-64y (Source: Eurostat)	4,431,457
# Internet Employees / # Total Employees	0.61%
# Internet Employees * Multiplier / # Total Employees	1.56%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 48,752.27
Labour Cost Internet Employees (Source: OECD)	€ 1,328,048,680
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 3,373,243,648
GDP in Euro (Source: OECD)	€ 352,000,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.38%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.96%

Country	Bulgaria
# Internet Employees (Source: Amadeus)	4,609
# Internet Employees (Source: Amadeus) * Multiplier	11,707
# Total Employees 15-64y (Source: Eurostat)	3,111,337
# Internet Employees / # Total Employees	0.15%
# Internet Employees * Multiplier / # Total Employees	0.38%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 4,365.24
Labour Cost Internet Employees (Source: OECD)	€ 20,119,810
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 51,104,318
GDP in Euro (Source: OECD)	€ 34,985,300,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.06%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.15%

Country	Cyprus
# Internet Employees (Source: Amadeus)	522
# Internet Employees (Source: Amadeus) * Multiplier	1,326
# Total Employees 15-64y (Source: Eurostat)	392,175
# Internet Employees / # Total Employees	0.13%
# Internet Employees * Multiplier / # Total Employees	0.34%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 23,147.10
Labour Cost Internet Employees (Source: OECD)	€ 12,085,972
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 30,698,368
GDP in Euro (Source: OECD)	€ 24,700,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.05%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.12%

Country	Czech Republic
# Internet Employees (Source: Amadeus)	8,638
# Internet Employees (Source: Amadeus) * Multiplier	21,940
# Total Employees 15-64y (Source: Eurostat)	4,818,814
# Internet Employees / # Total Employees	0.18%
# Internet Employees * Multiplier / # Total Employees	0.46%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 16,013.31
Labour Cost Internet Employees (Source: OECD)	€ 138,322,596
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 351,339,394
GDP in Euro (Source: OECD)	€ 140,380,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.10%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.25%

Country	Denmark
# Internet Employees (Source: Amadeus)	26,841
# Internet Employees (Source: Amadeus) * Multiplier	68,176
# Total Employees 15-64y (Source: Eurostat)	2,664,832
# Internet Employees / # Total Employees	1.01%
# Internet Employees * Multiplier / # Total Employees	2.56%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 49,826.55
Labour Cost Internet Employees (Source: OECD)	€ 1,337,398,396
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 3,396,991,926
GDP in Euro (Source: OECD)	€ 226,293,800,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.59%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1,50%

Country	Estonia
# Internet Employees (Source: Amadeus)	2,695
# Internet Employees (Source: Amadeus) * Multiplier	6,846
# Total Employees 15-64y (Source: Eurostat)	554,164
# Internet Employees / # Total Employees	0.49%
# Internet Employees * Multiplier / # Total Employees	1.24%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 13,424.24
Labour Cost Internet Employees (Source: OECD)	€ 36,183,533
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 91,906,175
GDP in Euro (Source: OECD)	€ 14,291,300,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.25%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.64%

Country	Finland
# Internet Employees (Source: Amadeus)	14,586
# Internet Employees (Source: Amadeus) * Multiplier	37,049
# Total Employees 15-64y (Source: Eurostat)	2,419,364
# Internet Employees / # Total Employees	0.60%
# Internet Employees * Multiplier / # Total Employees	1.53%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 42,311.39
Labour Cost Internet Employees (Source: OECD)	€ 617,165,847
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 1,567,601,251
GDP in Euro (Source: OECD)	€ 179,580,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.34%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.87%

Country	France
# Internet Employees (Source: Amadeus)	179,653
# Internet Employees (Source: Amadeus) * Multiplier	456,319
# Total Employees 15-64y (Source: Eurostat)	26,858,384
# Internet Employees / # Total Employees	0.67%
# Internet Employees * Multiplier / # Total Employees	1.70%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 43,254.69
Labour Cost Internet Employees (Source: OECD)	€ 7,770,849,573
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 19,737,957,914
GDP in Euro (Source: OECD)	€ 1,917,190,900,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.41%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1.03%

Country	Germany
# Internet Employees (Source: Amadeus)	275,498
# Internet Employees (Source: Amadeus) * Multiplier	699,765
# Total Employees 15-64y (Source: Eurostat)	38,307,173
# Internet Employees / # Total Employees	0.72%
# Internet Employees * Multiplier / # Total Employees	1.83%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 34,872.92
Labour Cost Internet Employees (Source: OECD)	€ 9,607,418,951
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 24,402,844,136
GDP in Euro (Source: OECD)	€ 2,462,100,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.39%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.99%

Country	Greece
# Internet Employees (Source: Amadeus)	45,309
# Internet Employees (Source: Amadeus) * Multiplier	115,084
# Total Employees 15-64y (Source: Eurostat)	4,493,586
# Internet Employees / # Total Employees	1.01%
# Internet Employees * Multiplier / # Total Employees	2.56%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 27,656.36
Labour Cost Internet Employees (Source: OECD)	€ 1,253,076,582
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 3,182,814,519
GDP in Euro (Source: OECD)	€ 224,513,700,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.56%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1.42%

Country	Hungary
# Internet Employees (Source: Amadeus)	10,688
# Internet Employees (Source: Amadeus) * Multiplier	27,148
# Total Employees 15-64y (Source: Eurostat)	3,808,188
# Internet Employees / # Total Employees	0.28%
# Internet Employees * Multiplier / # Total Employees	0.71%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 11,763.07
Labour Cost Internet Employees (Source: OECD)	€ 125,727,743
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 319,348,466
GDP in Euro (Source: OECD)	€ 94,031,300,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.13%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.34%

Country	Ireland
# Internet Employees (Source: Amadeus)	20,542
# Internet Employees (Source: Amadeus) * Multiplier	52,177
# Total Employees 15-64y (Source: Eurostat)	1,804,975
# Internet Employees / # Total Employees	1.14%
# Internet Employees * Multiplier / # Total Employees	2.89%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 45,381.91
Labour Cost Internet Employees (Source: OECD)	€ 932,238,676
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 2,367,886,237
GDP in Euro (Source: OECD)	€ 159,906,400,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.58%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1.48%

Country	Italy
# Internet Employees (Source: Amadeus)	92,748
# Internet Employees (Source: Amadeus) * Multiplier	235,581
# Total Employees 15-64y (Source: Eurostat)	22,564,219
# Internet Employees / # Total Employees	0.41%
# Internet Employees * Multiplier / # Total Employees	1.04%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 34,674.72
Labour Cost Internet Employees (Source: OECD)	€ 3,216,021,081
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 8,168,693,545
GDP in Euro (Source: OECD)	€ 1,539,395,600,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.21%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.53%

Country	Latvia
# Internet Employees (Source: Amadeus)	3,040
# Internet Employees (Source: Amadeus) * Multiplier	7,721
# Total Employees 15-64y (Source: Eurostat)	918,564
# Internet Employees / # Total Employees	0.33%
# Internet Employees * Multiplier / # Total Employees	0.84%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 11,490.43
Labour Cost Internet Employees (Source: OECD)	€ 34,929,125
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 88,719,977
GDP in Euro (Source: OECD)	€ 18,267,700,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.19%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.49%

Country	Lithuania
# Internet Employees (Source: Amadeus)	2,338
# Internet Employees (Source: Amadeus) * Multiplier	5,938
# Total Employees 15-64y (Source: Eurostat)	1,326,706
# Internet Employees / # Total Employees	0.18%
# Internet Employees * Multiplier / # Total Employees	0.45%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 10,987.59
Labour Cost Internet Employees (Source: OECD)	€ 25,687,724
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 65,246,818
GDP in Euro (Source: OECD)	€ 26,858,100,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.10%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.24%

Country	Luxemburg
# Internet Employees (Source: Amadeus)	2,130
# Internet Employees (Source: Amadeus) * Multiplier	5,411
# Total Employees 15-64y (Source: Eurostat)	223,577
# Internet Employees / # Total Employees	0.95%
# Internet Employees * Multiplier / # Total Employees	2.42%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 54,450.58
Labour Cost Internet Employees (Source: OECD)	€ 115,990,429
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 294,615,689
GDP in Euro (Source: OECD)	€ 39,416,100,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.29%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.75%

Country	Malta
# Internet Employees (Source: Amadeus)	1,630
# Internet Employees (Source: Amadeus) * Multiplier	4,141
# Total Employees 15-64y (Source: Eurostat)	161,581
# Internet Employees / # Total Employees	1.01%
# Internet Employees * Multiplier / # Total Employees	2.56%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 14,813.91
Labour Cost Internet Employees (Source: OECD)	€ 24,153,837
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 61,350,745
GDP in Euro (Source: OECD)	€ 6,419,700,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.38%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.96%

Country	Netherlands
# Internet Employees (Source: Amadeus)	60,666
# Internet Employees (Source: Amadeus) * Multiplier	154,091
# Total Employees 15-64y (Source: Eurostat)	8,309,441
# Internet Employees / # Total Employees	0.73%
# Internet Employees * Multiplier / # Total Employees	1.85%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 40,349.97
Labour Cost Internet Employees (Source: OECD)	€ 2,447,860,624
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 6,217,565,986
GDP in Euro (Source: OECD)	€ 582,084,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.42%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1.07%

Country	Poland
# Internet Employees (Source: Amadeus)	35,990
# Internet Employees (Source: Amadeus) * Multiplier	91,414
# Total Employees 15-64y (Source: Eurostat)	16,143,288
# Internet Employees / # Total Employees	0.22%
# Internet Employees * Multiplier / # Total Employees	0.57%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 10,181.30
Labour Cost Internet Employees (Source: OECD)	€ 366,420,816
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 930,708,872
GDP in Euro (Source: OECD)	€ 322,211,800,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.11%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.29%

Country	Portugal
# Internet Employees (Source: Amadeus)	35,848
# Internet Employees (Source: Amadeus) * Multiplier	91,054
# Total Employees 15-64y (Source: Eurostat)	4,670,683
# Internet Employees / # Total Employees	0.77%
# Internet Employees * Multiplier / # Total Employees	1.95%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 20,443.13
Labour Cost Internet Employees (Source: OECD)	€ 732,844,839
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 1,861,425,891
GDP in Euro (Source: OECD)	€ 168,816,400,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.43%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1.10%

Country	Romania
# Internet Employees (Source: Amadeus)	18,097
# Internet Employees (Source: Amadeus) * Multiplier	45,965
# Total Employees 15-64y (Source: Eurostat)	8,822,152
# Internet Employees / # Total Employees	0.21%
# Internet Employees * Multiplier / # Total Employees	0.52%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 7,676.41
Labour Cost Internet Employees (Source: OECD)	€ 138,916,425
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 352,847,720
GDP in Euro (Source: OECD)	€ 115,969,700,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.12%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.30%

Country	Slovakia
# Internet Employees (Source: Amadeus)	9,463
# Internet Employees (Source: Amadeus) * Multiplier	24,036
# Total Employees 15-64y (Source: Eurostat)	2,309,941
# Internet Employees / # Total Employees	0.41%
# Internet Employees * Multiplier / # Total Employees	1.04%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 13,614.50
Labour Cost Internet Employees (Source: OECD)	€ 128,832,385
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 327,234,259
GDP in Euro (Source: OECD)	€ 65,586,300,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.20%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.50%

Country	Slovenia
# Internet Employees (Source: Amadeus)	2,167
# Internet Employees (Source: Amadeus) * Multiplier	5,505
# Total Employees 15-64y (Source: Eurostat)	940,991
# Internet Employees / # Total Employees	0.23%
# Internet Employees * Multiplier / # Total Employees	0.59%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 24,047.21
Labour Cost Internet Employees (Source: OECD)	€ 52,118,436
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 132,380,827
GDP in Euro (Source: OECD)	€ 35,797,700,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.15%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.37%

Country	Spain
# Internet Employees (Source: Amadeus)	115,892
# Internet Employees (Source: Amadeus) * Multiplier	294,366
# Total Employees 15-64y (Source: Eurostat)	18,383,535
# Internet Employees / # Total Employees	0.63%
# Internet Employees * Multiplier / # Total Employees	1.60%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 31,402.63
Labour Cost Internet Employees (Source: OECD)	€ 3,639,315,135
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 9,243,860,444
GDP in Euro (Source: OECD)	€ 1,052,399,000,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.35%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.88%

Country	Sweden
# Internet Employees (Source: Amadeus)	58,658
# Internet Employees (Source: Amadeus) * Multiplier	148,990
# Total Employees 15-64y (Source: Eurostat)	4,435,037
# Internet Employees / # Total Employees	1.32%
# Internet Employees * Multiplier / # Total Employees	3.36%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 46,164.84
Labour Cost Internet Employees (Source: OECD)	€ 2,707,919,847
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 6,878,116,412
GDP in Euro (Source: OECD)	€ 307,463,200,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.88%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	2.24%

Country	Slovakia
# Internet Employees (Source: Amadeus)	9,463
# Internet Employees (Source: Amadeus) * Multiplier	24,036
# Total Employees 15-64y (Source: Eurostat)	2,309,941
# Internet Employees / # Total Employees	0.41%
# Internet Employees * Multiplier / # Total Employees	1.04%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 13,614.50
Labour Cost Internet Employees (Source: OECD)	€ 128,832,385
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 327,234,259
GDP in Euro (Source: OECD)	€ 65,586,300,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.20%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	0.50%

Country	United Kingdom
# Internet Employees (Source: Amadeus)	291,828
# Internet Employees (Source: Amadeus) * Multiplier	741,244
# Total Employees 15-64y (Source: Eurostat)	28,486,786
# Internet Employees / # Total Employees	1.02%
# Internet Employees * Multiplier / # Total Employees	2.60%
Av. Annual Labour Cost per Employee (Source: OECD)	€ 34,492.70
Labour Cost Internet Employees (Source: OECD)	€ 10,065,947,503
Labour Cost Internet Employees (Source: OECD) * Multiplier	€ 25,567,506,657
GDP in Euro (Source: OECD)	€ 1,475,121,800,000
Labour Cost Internet Employees (Source: OECD)/GDP	0.68%
Labour Cost Internet Employees (Source: OECD) * Multiplier 2,54 /GDP	1.73%