The Economic Impact of IT,
Software, and The Microsoft Ecosystem on

The European Union, Croatia, Norway, and Switzerland

June 2006

Introduction

In 2005 the 28 countries studied spent $350 billion on IT hardware, software, and services, and employed almost 8 million people in the IT industry, over 4 million of whom were in jobs related to producing, servicing or distributing software. Together those employees and the businesses they worked for drove the creation of almost $300 billion in tax revenues.

The subset of the IT industry that could be called the Microsoft ecosystem – the companies that offer products that run on Microsoft software or that service and distribute such software – employed almost 2.8 million people. For every dollar of Microsoft revenue in the region, other companies made $7.68.

These are the findings of IDC's latest study of the economic impact of software and the Microsoft ecosystem on countries in the European Union and three additional countries, Croatia, Norway, and Switzerland.

Other findings:

- IT spending will grow at 6% a year from now through 2009
- Software accounts for 20% of IT spending, but because of the sophistication of IT usage in the region, it drove over 50% of employment thanks to software-related employees in service and distribution firms and at IT using organisations
- Software related employment in the region will grow 50% faster than hardware-related employment
- Software-related employees and companies will generate almost $125 billion in additional taxes in the region between now and the end of 2009
- In the next four years the IT sector will add almost 1.5 million new jobs, 60% of them software-related
- For every dollar in Microsoft revenue generated last year there were almost $5 in hardware revenue generated by products running on Microsoft operating systems, almost $1.50 in other software revenues, and almost another $1.50 in services revenues.

Study Background

In early 2002 IDC completed a project ("The National Economies Project") for Microsoft assessing the positive economic impact that information technology (IT) has had on 28 countries. This impact came in job creation, company formation, increased IT spending, and tax revenues. In the course of this project IDC developed an Economic Impact Model (EIM), which ties local IT spending to the impact metrics. The model output – jobs, tax revenues, etc. – was validated with local government sources, and through this process the model was calibrated.

Since that time the EIM has been updated and expanded multiple times, most recently last fall in conjunction with a study on the economic impact of lowering software piracy for the Business Software Alliance. By that time it covered 70 countries.

An additional expansion to the EIM has been to study the economic impact of the Microsoft ecosystem, which we call the Microsoft Footprint. The first of these studies took place in 2004. This study represents a significant update and expansion of that work.

In 2006, Microsoft asked IDC to update its EIM for 25 European Union countries plus three others, Croatia, Norway, and Switzerland, and to develop Microsoft Footprints for the countries as well. This document summarises the key findings and methodology of the project.

The countries covered are shown below:

Austria	Italy	Switzerland
Czech Republic	Malta	Cyprus
France	Portugal	Finland
Ireland	Sweden	Hungary
Luxembourg	Croatia	Lithuania
Poland	Estonia	Norway
Spain	Greece	Slovenia
Belgium	Latvia	UK
Denmark	Netherlands	
Germany	Slovakia	

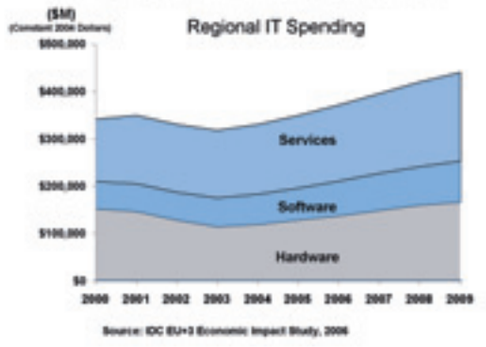
IT Growth

From the double digit growth in the region in the late 1990s, IT spending growth fell precipitously in the first half of the decade – with average compound growth negative from 2000 to 2004 – while employment barely inched upward. Spending at $341 billion in 2000 was $331 billion in 2004.[1]

With 2004, however, the turnaround began. From 2005 through 2009 IT spending growth is expected to run at 6% a year for the region, higher for some of the smaller, newer EU members.

Figure 1 shows the region's expected IT growth for the decade (the chart details are in the separate excel spreadsheets).

Figure 1
Renewed IT Market Growth



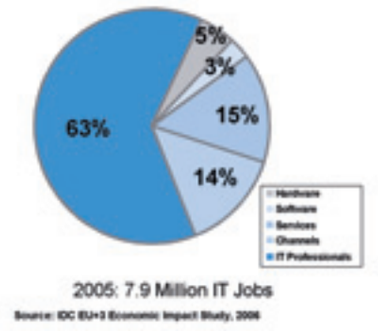
IT Employment

The region is a major IT employer, with 7.9 million people working for hardware vendors, software firms, service firms or in the IT departments of IT using organisations. During the first half of the decade IT employment grew less than 2% a year.[2]

Since 2004, employment has picked up. Between now and 2009 it should grow at just over 4% a year, adding almost 1.5 million new people to the industry. Figure 2 shows the make-up of the 2005 IT employment base.

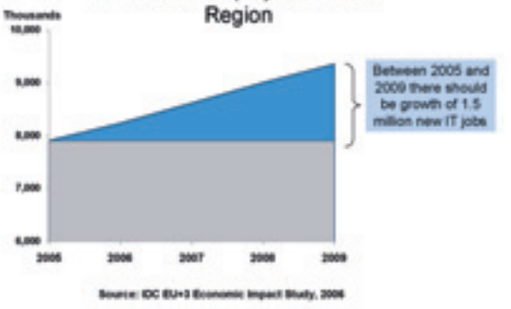
The region represents a huge domestic market but, as a whole, not a net exporter of IT hardware or software or services. Within the region, however, there is a lot of movement of products and services between countries.

Figure 2
IT Employment By Category



The reviving IT spending will help drive healthy employment growth over the next four years, as shown in Figure 3.

Figure 3
IT Will Create New Jobs



Taxes

For this project IDC calculated and then projected the amount of tax revenue attributable to IT.

Because IT employees are higher skilled and therefore higher paid than employees on average, and software-related employees are higher skilled and higher paid than IT employees on average, the high concentration

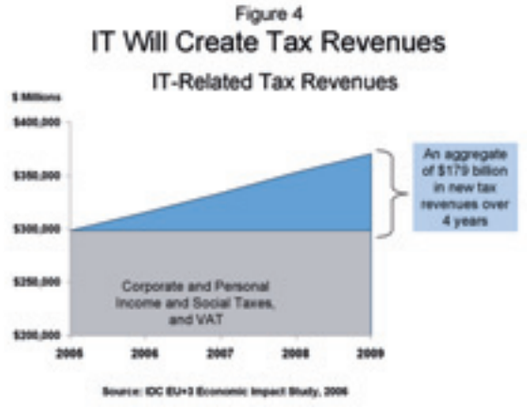
[1] When measured in spending, "IT" as used by IDC means IT hardware, packaged software and services. It excludes components used in making IT hardware, exports, and channel revenues. However, when calculating the economic impact of IT, we do include exports, some components, and channels, since these drive employment and taxes.

[2] Note that IDC statistics on employment may differ from local or government sources, primarily as a matter of definitions (see the discussion in the the Methodology and Definitions section). The most common difference is in the classification comes from the fact that IDC classified custom software houses as computer services. One of the benefits of the IDC methodology is standardization across countries.

of software-related IT employees gives the IT sector a greater share of tax generation than its share of the workforce.

The taxes counted include business income taxes and fees, personal income and social taxes, and VAT or other consumption taxes. In most countries the largest component of the tax number comes from headcount related taxes.

Figure 4



The importance of software

We have alluded before to the fact that software is important to economic activity. The reason:

Software-related activity is not simply generated by people working at software companies. There are also people in services firms installing, integrating, supporting, and training on software. So, too, with people in computer stores, systems resellers, and distribution companies, not to mention in enterprise data centers, where staff time devoted to software is far disproportionate to the ratio of what is spent on software compared to hardware.

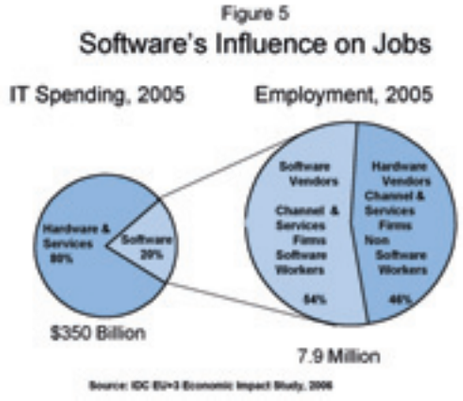
Since software is more complex to sell, service, and support than hardware, this means that, dollar-for-dollar, it generates more downstream economic activity than hardware. In addition, software engineers, programmers, and systems analysts are generally more highly skilled and highly paid than the average worker in a hardware company.

Both types of company have plenty of non-technical people – in marketing, sales, management, customer service, and administration – and hardware companies employ plenty of software specialists, but a vibrant software sector has economic power and reach well out of proportion to its size.

Figure 5 shows how spending on software is leveraged into the services and channels sectors.

Software-enabled jobs numbered 4.2 million in 2005; between now and 2009 another 880,000 software enabled jobs will be added, accounting for 60% of the new job creation.

Figure 5



By country, the percent of software-enabled employees varies dramatically. For instance, in countries like France or Germany the percent of services and channels employees that are working with software can be over 50% of total services and channels employees. In less developed countries, like Cyprus, Portugal, or Slovakia, that percent can be as low as 35%-40%.

The reach of the Microsoft ecosystem

While it is easy to think of Microsoft as simply a large, dominant software company, in fact it is an economic force that has a direct positive impact on the countries in which it operates.

Microsoft partners and OEMs sell PCs and servers running Windows; software vendors write applications that run on Windows using Microsoft application development tools; retail outlets and resellers employ people to sell and distribute these products; and service firms install and manage Microsoft-based solutions, train consumers and businesses on Microsoft products, and service customers for their own applications.

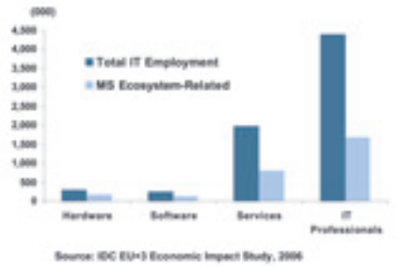
If you add up all the spending on hardware and software that run on Microsoft operating systems as well as all the services around installing and maintaining Microsoft applications and solutions, you quickly come up with a number bigger than Microsoft's revenues.

In the region, such Microsoft ecosystem-related activity[3] added up to almost eight times Microsoft's revenues, accounted for over 37% of IT employment, and generated $107 billion in taxes.

Figure 6 shows the effect of the Microsoft ecosystem on employment in the region.

Another way to think of the Microsoft contribution is in its relation to revenues from other companies.

Figure 6
The Impact of Microsoft
MS ecosystem-related employment in 2005 is 2.8 million, representing 37% of total IT employment

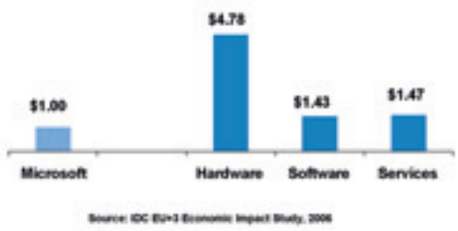


Source: IDC EU+3 Economic Impact Study, 2006

For every dollar of Microsoft revenue in the region in 2005 there were $7.68 in related revenue generated by other companies. Some of the hardware revenues, much of the software revenues, and most of the services revenues are from local companies.

Figure 7 shows the dollar relationship between estimated Microsoft revenues in the region and revenues on Microsoft-enabled hardware, software, and services.

Figure 7
Microsoft and the Local Economy
For every dollar of Microsoft revenue in 2005 there were $7.68 generated in revenues by other companies in the Microsoft ecosystem



Source: IDC EU+3 Economic Impact Study, 2006

Country Differences

The region covered is extremely diverse – from large industrialized nations with very sophisticated IT infrastructures to small island nations that are still emerging economies.

Most of the differences can be seen in the accompanying spreadsheets. Just some quick notes:

- France, Germany, and the UK account for over half of IT spending and employment in the region.
- Few of the original members of the EU are expected to see IT spending grow much more than 5% between now and 2009, with the exception of Portugal and Spain. Most of the newer EU members will see spending grow closer to 10%.
- The amount of Microsoft-enabled revenue per dollar of Microsoft revenue varies widely – from as high as $10 to as low as $6. This can depend on the nature of the local IT infrastructure. Emerging economies tend to have a higher percentage of hardware spending as a total of IT spending than developed economies.
- In developed countries with an already high percentage of software-related employment, growth of software-related employment will be closer to hardware employment growth; in the more emerging economies, the growth rate can be twice that for hardware-related employment.

[3] The Microsoft ecosystem revenues include those for Microsoft OEMs selling hardware running on the Windows operating systems, software revenues for packages running on Windows, and services on Microsoft software.

Table 1 shows the relationship of Microsoft revenues to Microsoft-enabled revenues by country.

Table 1
Dollars of Microsoft-Related IT Spending per Dollar of Microsoft Revenue, 2005

	Total	Hardware	Software	Services
Austria	$7.44	$4.62	$1.30	$1.52
Belgium	$7.04	$4.25	$1.88	$1.51
Croatia	$8.24	$6.39	$0.60	$1.25
Cyprus	$6.74	$5.15	$0.51	$1.07
Czech Repub	$6.44	$4.45	$0.60	$1.39
Denmark	$7.34	$4.38	$1.28	$1.68
Estonia	$9.08	$7.61	$0.52	$0.95
Finland	$7.58	$4.60	$1.50	$1.48
France	$7.55	$4.74	$1.24	$1.56
Germany	$7.01	$4.57	$1.03	$1.41
Greece	$8.04	$6.39	$0.29	$1.16
Hungary	$6.12	$3.99	$0.85	$1.28
Ireland	$8.58	$7.04	$1.06	$1.46
Italy	$7.00	$5.29	$1.10	$1.42
Latvia	$7.33	$5.79	$0.50	$1.04
Lithuania	$8.69	$6.21	$0.56	$0.92
Luxembourg	$7.63	$4.14	$2.00	$1.70
Malta	$6.10	$4.61	$0.47	$1.02
Netherlands	$8.03	$4.78	$1.90	$1.36
Norway	$7.94	$5.17	$1.34	$1.44
Poland	$6.57	$7.56	$0.61	$1.38
Portugal	$8.87	$7.63	$0.99	$1.25
Slovakia	$6.92	$5.21	$0.45	$1.26
Slovenia	$7.96	$5.61	$0.80	$1.58
Spain	$8.46	$6.85	$1.12	$1.48
Sweden	$7.19	$4.22	$1.41	$1.56
Switzerland	$7.75	$4.39	$1.92	$1.44
United Kingdo	$7.60	$4.52	$1.49	$1.58
Group Total	$7.68	$4.78	$1.43	$1.47

The Impact of Microsoft on Small and Medium Businesses

In the region studied almost 55% of IT spending is by small and medium enterprises (SME), including government organisations and educational institutions, with less than 500 employees.

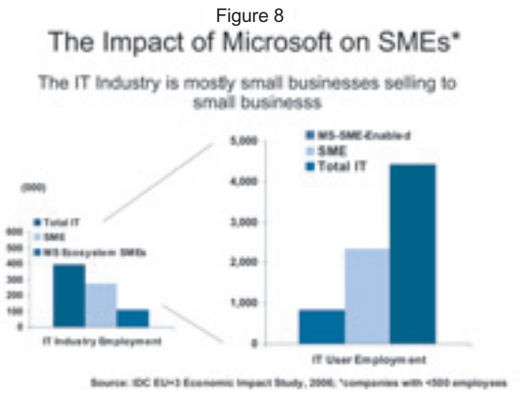
At the same time, although there are dozens of billion dollar corporations in the IT industry serving these users, and many with 5,000 employees or more, in fact the bulk of IT organisations serving the market are SMEs themselves. IDC estimates that as many as 70% of total IT industry employees work in companies that have less than 500 employees. These range from hardware assemblers and small component manufacturers to local software firms, IT consultants and training organisations, and value added resellers, solution providers, and retailers.

These "firmographics" – many small IT companies selling to many small user organisations – play out in within the Microsoft ecosystem, which, except for some large hardware OEMs and international consulting and software firms, also tend to be SMEs.

Figure 8 illustrates how much SMEs make up of the IT industry and the IT user community, as well as Microsoft's influence. Because of the nature of its products, Microsoft has bigger influence on the SME market than the overall IT market. Not too many companies under 500 employees are running major ERP systems on giant mainframes.

The graphic uses employment rather the number of companies to depict the supply-side. Over 99% of companies in the region, by number, are SMEs.

Figure 8



Future Outlook

The region is a diverse, heterogeneous IT environment with a high IT skill level and relatively sophisticated IT usage.

With the IT shakeout of 2000-2002 behind us, IDC believes the industry is in for a period of stable, predictable growth, yet also tremendous IT innovation. This combination will be both an opportunity and challenge for the region, as companies use IT to transform their business, as broadband access drives more consumer convergence, and as data centres build more flexible infrastructures.

The opportunity will be to use IT to improve the customer experience, increase productivity and revenues, and cut costs. The challenge will be to do so in a climate of global competition.

Methodology and Definitions

Economic impact

a. IT Spending – spending by consumers, businesses, governments, or educational institutions on information technology, including hardware, software, services, and data networking, as measured in the IDC's Worldwide IT Spending Trends reports (The "Worldwide Black Book"). This spending excludes all telecommunications revenues, and some smaller emerging technology areas such as videogames (although PC gaming software is included). The figures are in local currency or 2004 constant dollars.

b. Tax Revenues – VAT or sales tax revenues from the sale of IT hardware, software, or services, business and personal income, social, and consumption taxes.

   The basic approach was to first take total income, profit, and social taxes within a country and determine what proportion was attributable to IT activities. The totals for taxes and employment were gathered from published statistics, the total IT employment was taken from the IDC Economic Impact Model. Adjustments were made then based on assumptions that IT employees have higher income than the average employee in a country.

c. IT Employment – the number of people employed (full-time-equivalent) in hardware, software, services, or channel firms and those managing IT resources in an IT-using organisation (e.g., programmers, help desk, IT managers). The definition excludes employment in occupations in IT-related industries, such as web graphics design, venture capital, trade magazine publishing, etc.

   Headcounts by category were first modeled based on estimated IT revenue per employee for hardware, software, or services companies based on standard ratios, and by levels of spending per employee by technology type for channels employees and IT professionals.

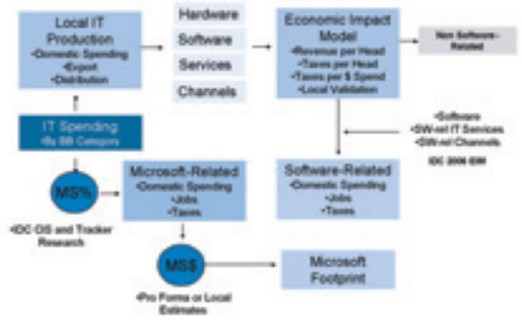
   In its forecasts, IDC was conservative in how much growth in IT spending would result in IT employment – in general if IT spending was to grow 10%, IT employment would grow something less than that. This varied by category.

d. Channel revenues – within calculations of employment and tax revenues, IDC uses a figure for channel revenues to drive estimates of employment and therefore taxes. In this case, channel revenues are equated to 100 percent of IT spending. Most of that goes back to the hardware, software and IT services suppliers, but it is that revenue that funds employment. Within its tracking of IT spending, IDC looks only at channel mark-up, which is the difference between IT spending and vendor revenues.

Figure 9 illustrates the methodological flow of the study.

Figure 9

Economic Impact Methodology



Software-related taxes, revenues, or employment

This is the percentage of spending, employment or tax revenues that can be associated with the creation, installation, servicing, installing or distributing of software. It is developed by first analysing 13 service categories and developing through IDC research the percentage of that activity that is devoted to software (e.g., what percentage of IS outsourcing is outsourcing software management and what percentage is related to managing hardware.) This leads to a ratio of software spending to services spending. For the purposes of allocating employment and taxes, internal IT departments are assumed to resemble external service organisations and headcount is allocated accordingly. The allocation of channels activity to software is the midpoint between percentage of software spending to the total of software and hardware spending and percentage of IT services that is software-related.

Taxes were adjusted by applying the ratio of software-related employees to all employees to the income and social taxes for all IT and the ratio of software-related revenues to all IT revenues to business-related taxes.

Microsoft ecosystem related economic impact

Microsoft ecosystem-related employment and tax revenues were derived using country-level estimates of what percent certain IT categories were related to Microsoft hardware OEMs and companies writing or selling software that runs on Microsoft operating systems or servicing Microsoft software.

a. For hardware we counted all hardware (PCs, servers, smart handheld devices, etc.) that ran on Microsoft operating systems. This information is routinely tracked by IDC hardware analysts.

b. For software we counted all software that runs on Microsoft operating systems that is sold or developed by Microsoft or its partners. We started with data from the IDC Software Forecaster on revenues by software category (e.g., development tools, CRM software, collaboration tools) by operating system and adjusted this based on local country research.

c. For services we counted all services related to the design, deployment, management, support and training for Microsoft software and software running on Microsoft operating systems. We excluded maintenance and support on hardware running on Microsoft operating systems under the assumption that maintenance was more likely to be related to equipment failures.

d. For Microsoft-related IT professionals we used the general ratio of services to come up with estimates of headcount percentages in using organisations.

To determine the amount of IT spending per dollar of Microsoft revenue, we took the Microsoft-ecosystem related spending percentages developed above and compared them to estimates of Microsoft revenue in each country. In the final calculation we subtracted Microsoft revenues from the Microsoft-related total IT spending to come up with the total Microsoft-ecosystem-related spending that wasn't revenue to Microsoft.