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**The Impact of  
Microsoft Deutschland GmbH  
on the German IT Sector**

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## **Management Summary**

### **The Economic Impact of Microsoft Deutschland GmbH on the German IT Sector**

#### **1. The Microsoft Business Model is the Basis of a Wide Range of Economic Activities at Other Companies in Germany**

Because the IT sector has a horizontal structure that relies heavily on division of labor, it is not possible to derive the economic impact of any given company in the sector solely from its sales and personnel figures. In order to assess economic impact, it is also necessary to consider the role of the company in creating business opportunities for other companies. The technology and partner program offered by Microsoft provides other companies with a platform that they can use as a starting point for their own business models.

In economic terms, the partner model can be classified as a foundation for value creation through the partners' own economic activities. It provides them with sufficient latitude to offer their own IT services and software products and therefore differs fundamentally from a pure distribution model. Furthermore, there is a strong correlation between the extent to which partners' business activities can be linked to Microsoft as compared to Microsoft's economic impact on the German IT sector. Thus, Microsoft is a driving force in the German IT market. This study does not examine the additional productivity effects on other sectors of the technology developed by Microsoft. The following discussion provides some points of reference on the assessment of economic impact as defined above.

#### **2. High Value-Added Intensity Implies a Sizeable Direct Economic Impact on the German Software and IT Services Market**

According to the latest data on services in the statistics for 2000, the IT services and software market in Germany represents € 41.5 billion in sales and 282,446 jobs. Of this total, software companies contributed € 24.7 billion in sales and 174,168 jobs. While providing only 1 percent of the aggregate number of jobs, the IT services and software sector is responsible for 2 percent of all value created in Germany. This demonstrates the high productivity of workers in this sector.

As a measure of economic activity within a sector, net value added is particularly high – 64 cents per euro of sales – compared to the national average (43

cents). As a result of this high value-added intensity and the extensive degree of integration within the sector, much of the direct economic impact of Microsoft directly benefits the software and IT services market.

### **3. The SME Structure of the German IT Market is Reflected in the Microsoft Partner Program**

According to the services statistics, 99.6 percent of companies in the IT-services and software market generate less than 50 million euros in sales or employ fewer than 500 people and can therefore be classified as small and medium-size enterprises (SME's). SME's produce 50.6 percent of sales and provide 65.9 percent of all jobs in the sector. Because start-up costs are much lower than in the manufacturing industry, there is a multitude of so-called "microbusinesses". The ratio of microbusinesses to all companies is around 77 percent. Microbusinesses generate less than 500,000 euros in sales and, on average, have fewer than two employees.

The "Microsoft for Partners" program covers the entire breadth of the IT market. Nearly 20,000 companies have signed up for this program and another 2,500 participate in the "Certified Partner Program". These are generally companies with higher than average sales volumes. For data-availability reasons, this Economic Impact Study focuses on Certified Partners only. As a result, the figures on economic impact can be viewed as an empirically verifiable lower limit. The economic impact of the "Microsoft for Partners" program can be assessed only approximately. The aggregate economic impact, including that on the "Microsoft for Partners" program, is roughly 30 percent higher than the impact on the Certified Partners alone.

### **4. Tight Integration and High Impact on SME's in the German IT Sector**

All 20,000 IT companies in the "Microsoft for Partners" program are either microbusinesses or SME's. Of the Certified Partners, 94 percent are SME's: they either generate less than 50 million euros in sales or employ fewer than 500 people. Therefore, the Microsoft partner program broadly covers the SME's in the IT sector and reflects the structure of the German IT market in its different program levels.

The percentage of companies enrolled in the Certified Partner programs increases with company size. Of all companies with over 2 million euros in sales, 43 percent are Certified Partners. Furthermore, the Certified Partners account for 74 percent of all sales in IT services and software. For the participating com-

panies, the Certified Partner program exerts a direct effect on sales: companies cooperating with Microsoft as a Certified Partner have a higher sales volume than the average company in the IT services and software market.

### **5. € 11.2 Billion of the Partner Companies' Sales are Directly Attributable to their Partnership with Microsoft**

Within the entire Certified Partner program, German partner companies attribute 26 percent of their sales from services directly to their partnership with Microsoft and to their IT service offering for Microsoft products. Expressed in Euros, the companies generate € 4.6 billions in sales from Microsoft-related IT services. The development of products for Microsoft platforms within the partner program accounts for 50 percent of all software development sales on average. This means that € 6.6 billions in sales are generated from Microsoft-related software development.

Thus, € 11.2 billions of the partner companies' overall sales stem from their partnership with Microsoft. The structural data in the services statistics indicate that SME's account for 50.6 percent, or € 5.7 billions, of sales. Comparing Microsoft's sales in Germany to aggregate Microsoft-related sales, there is a sales multiplier of 1:7.5. In other words, one euro of sales at Microsoft Deutschland GmbH induces 7.5 euros of Microsoft-related sales at its Certified Partners.

### **6. 76,000 Jobs at Partner Companies Created by the Microsoft Partner Model**

Certified Partners generate their Microsoft-induced services sales with a total of 31,000 employees. The main subgroups in this area are technical maintenance, with 7,130 workers, or training, with 3,410 Microsoft-related employees. When it comes to developing software products for a Microsoft platform, the partner companies employ an additional 45,000 people. This represents a total of 76,000 Microsoft-related jobs at Certified Partners in Germany. According to the services statistics, 65.9 percent of the employees work at SME's. This means that some 50,000 of the Microsoft-induced jobs are at SME's.

If the 76,000 Microsoft-induced jobs are compared to the 1,500 people employed directly by Microsoft Deutschland GmbH, it is evident that, for each job at Microsoft, there are 51 Microsoft-related jobs in the IT services and software market. If Microsoft, and not the partner companies, were to provide these products and services, payrolls at Microsoft Deutschland GmbH would increase by these 76,000 jobs.

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## Introduction

This study examines the economic impact of Microsoft Deutschland GmbH on the German IT sector. One of the unique things about the Microsoft business model is its partner program, which enables participating companies to develop their own business ideas based on Microsoft technology. This means that any company enrolled in the partner program can realize its own sales and employment potentials. Partners may offer such IT services as consulting, implementation, training or data-center services. Participating software companies develop customized software solutions or offer packaged products for Microsoft platforms.

Since the value of products offered by Microsoft increases in proportion to the number of partner companies, this business model benefits the partners and Microsoft alike. For this reason, the Microsoft business model differs fundamentally from a pure distribution model. Distribution models consist of fixed distribution and supplier structures that do not give participating companies the opportunity to develop economic activities in addition to those proscribed in the model. The partner model, on the other hand, does not contemplate this kind of deterministic supplier relationship. As a consequence, the economic impact of a company in the software sector is more than the sum of its sales or payroll figures. Likewise, economic impact is also a factor of the role the company has in creating business opportunities for other companies. It is the goal of this economic impact study to analyze the interrelationships of the Microsoft business model as well as its induced sales and related jobs.

The analysis begins with an input/output analysis of the German market for IT services and software. The input/output analysis reveals the interrelationships in the sector and delimits the effective scope of the economic impact. Next, the study looks at key data on the German market for IT services and software that were obtained from the statistics on services issued by the German Federal Statistical Office. These statistics are an important source of data, especially with respect to the structure of the sector. Drawing on these industry data, the study next examines the interrelationships in the partner model. The most important source of data on companies participating in the partner program is a corporate profile. Designed as a survey, the profile provides de-identified aggregate sales figures and allocates them to individual IT services and software areas. When calculating the economic

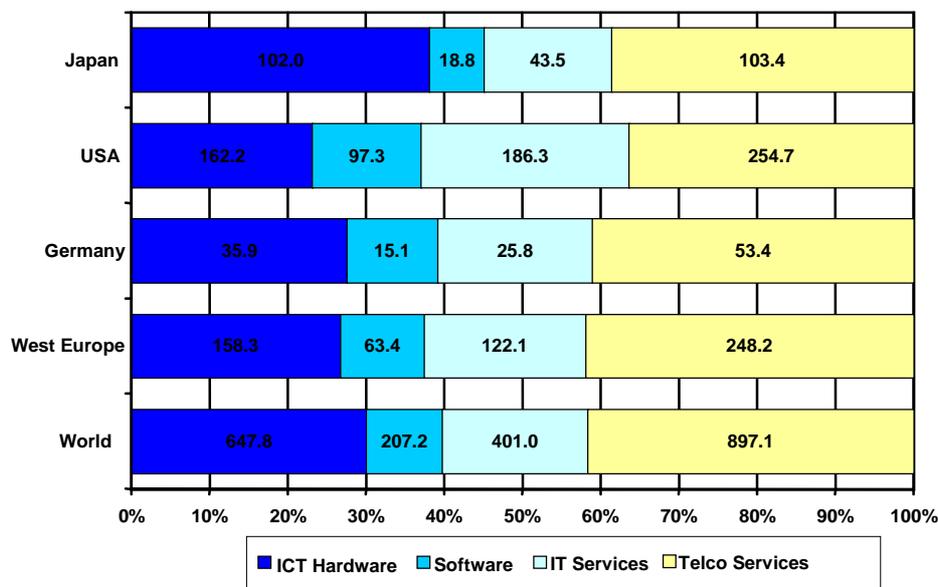
impact, this study places more importance on using empirically verifiable data than on covering as much of the partner program as possible. As such, the economic impact was calculated on the basis of only those company statistics for which solid data were available. Nonetheless, extrapolations were necessary at certain points to assess the economic impact for a particular area for which there were no data. The study clearly indicates where such extrapolations were used. Since the figures given on economic impact are based on solid data, they can be viewed as an empirically verifiable lower limit.

# 1. Market Definition and Economic Significance

## 1.1 The IT Market as a Submarket of the ICT Market

Many studies about the information-technology market (or IT market for short) also consider the telecommunications market. Taken together, the two markets constitute the market for information and communication technology, or the ICT market. While the IT market is the focus of this study, some data are only available for the entire ICT market. In order to analyze the underlying data pool more precisely, the two markets shall first be defined and each market segment described.

**Illustration 1: Shares of Market Segments in the ICT Market**



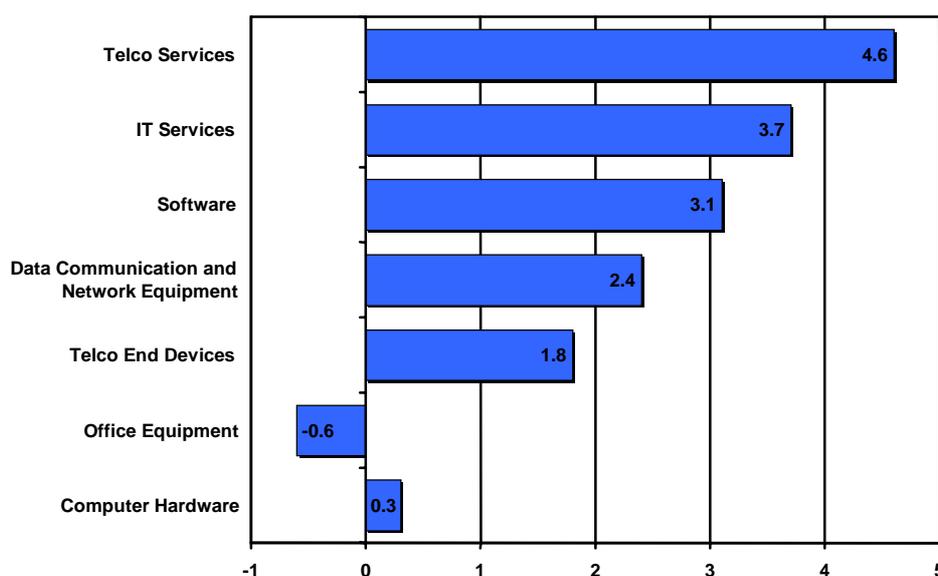
Source: EITO (2003), p. 345.

In this study, the IT market shall encompass the markets for software, IT services and IT hardware; the ICT market shall consist of the IT market as well as telecommunications services and hardware. In 2002, the market volume of the global ICT market stood at 2153.1 billion euros. Of this total, the US contributed the most: 700.5 billion euros. It was followed by Western Europe, with 592.1 billion euros, and Japan, with 267.8 billion euros. Illustration 1 shows the relative importance of the individual market segments for the ICT market for different countries and regions. Each bar additionally contains the absolute size of the individual segments in billions of euros.

41 percent of the overall market goes to telecommunications services and 30 percent to ICT hardware. Of the remaining 29 percent, IT services account for 19 percent and software for 10 percent. ICT hardware consists of roughly equal portions of telecommunications and IT hardware. All told, this means that telecommunications services and hardware account for some 56 percent of the total ICT market.

The individual segments are developing in very different directions, both in terms of the difference in growth rates between telecommunications services and IT services and in terms of the differences between IT hardware, software and IT services within the IT market. Illustration 2 shows different growth rates for different market segments. IT hardware is not listed as a separate group; instead, it is represented by computer hardware, office equipment and portions of data communications and network equipment.

**Illustration 2: 2002-2004 Growth Forecasts for Different Market Segments in Western Europe**



Source: EITO (2003), p. 348.

In order to prevent the results from being distorted due to the differences in market segment trends and a partially inconsistent definition of segments, this study uses, wherever permitted by the data, a very narrow definition of the IT market. The study focuses in particular on trends in the market for IT services and software, and ignores trends in the telecommunications sector. Likewise, trends in the hardware market are included in the analysis only in selected sections. The study clearly points out every instance where the available data refer to the entire ICT market.

## 1.2 Market Segments in the Software Market

Broadly speaking, software can be classified as either individual or packaged software.

### Packaged Software

Packaged software is designed to be very versatile and to be used by many users. Unlike custom software, packaged software is developed by software companies for an anonymous consumer. As such, packaged software is user- and sector-neutral and offers functionality for a particular application.

In 2001, the global market volume for packaged software was 196 billion US dollars.<sup>1</sup> 95 percent of the software sold was purchased in OECD countries. In 2001, the US market accounted for almost 50 percent of the total market, as opposed to 44 percent in 1990. The market for packaged software became even more important in the overall ICT market during the nineties. At present, it accounts for 9 percent of the OECD market, compared to 5.5 percent in 1992.<sup>2</sup>

The packaged software category can be broken down into application software, system-infrastructure software and software-development tools. In 1999, application software accounted for 49 percent of the total market, system-infrastructure software for 32 percent and software-development tools for 19 percent.<sup>3</sup>

**Application software** allows users to perform a particular activity or function.<sup>4</sup> It can be broken down into business and private/home software. The most important business software is Enterprise Resource Planning software (ERP), which also accounts for the largest share of application software.<sup>5</sup> ERP software is one of the types of software used in many sectors. In 1999, its share in the total market for packaged software was 14.2 percent.

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<sup>1</sup> Cf. OECD (2002), Annex, Table 3.14, p. 320.

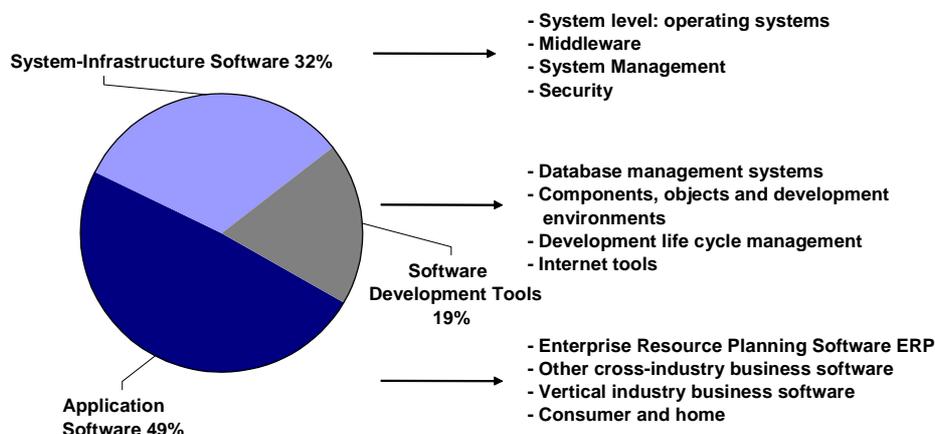
<sup>2</sup> Cf. OECD (2002), p. 113.

<sup>3</sup> See also OECD (2002), pp. 114-116, concerning the individual software categories.

<sup>4</sup> Cf. BALZERT (1996), p. 23.

<sup>5</sup> ERP applications automate business processes across industries.

### Illustration 3: Breakdown of the Market for Packaged Software



Source: OECD (2002), p. 115.

Another type of software used in many sectors is Business Administration Software, which offers functionality for business processes such as human-resource administration or production planning. Despite being used by private users, office applications such as word processors, spreadsheets, databases or e-mail programs are also part of this product group. All told, this product group accounted for 8.7 percent of the total market for packaged software in 1999.

Software developed for a certain application within a special sector (so-called vertical industry applications) has a 22.4 percent share of the total market for packaged software. This category includes CAM or CAD software. Private or home software accounted for 3.9 percent of the total market for packaged software in 1999.

**System-infrastructure software** controls the internal processes within a computer. It acts as an interface between the application software and the hardware components of the computer. System-infrastructure software can be broken down into operating systems, middleware, system management and security solutions.

In the total market for packaged software, operating systems have a market share of 12.9 percent. Middleware (3.5 percent market share) refers to software that allows computer resources to be shared in a heterogeneous system environment. Firewalls, encryption software and antivirus software all constitute security software, which accounts for only 3 percent of the total market.

**Software-development tools** make up 19 percent of the total market for packaged software. This group includes database-management systems, components, objects and development environments (CODE) for writing software code, and development life-cycle-management software to support the development of software and internet tools.

### **Custom Software**

In contrast, custom software consists of programs that are developed for a specific application and whose properties are tailored a particular situation. Custom software offers the advantage of flexibility: it can be adapted to meet the user's special needs. The price for this flexibility is a long development period and high development costs.

## **1.3 Economic Impact of Software and Its Contribution to Growth**

The economic impact of software can be viewed from an output and an input perspective. The output perspective examines the impact of the software sector as a production sector within an economy. The input perspective views spending on software and IT services as an investment in the production process.

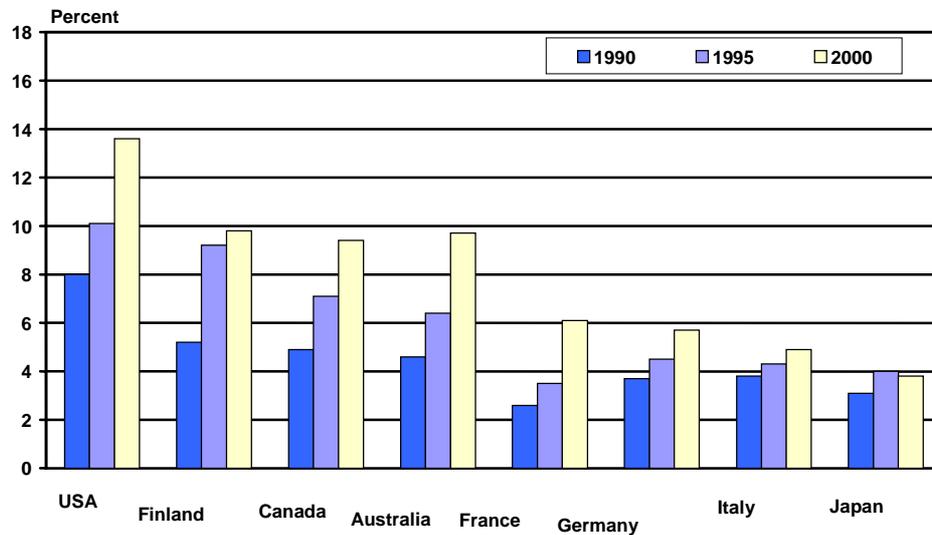
This study shall first look at software's impact as an input factor. To a great extent, growth in corporate investment in OECD countries in the nineties was driven by investment growth in the information and communications sector. In Canada, Australia, Finland and the US, investments in IT hardware and software were responsible for 21 to 29 percent of aggregate capital investment in the corporate sector in 2000. This proportion has increased considerably since the eighties.<sup>6</sup>

Among investments in the information and communications sector, growth was particularly high for investments both in communications infrastructure and in software investments. Software investments were decisive in propelling the growth in aggregate investment in the information and communications sector.

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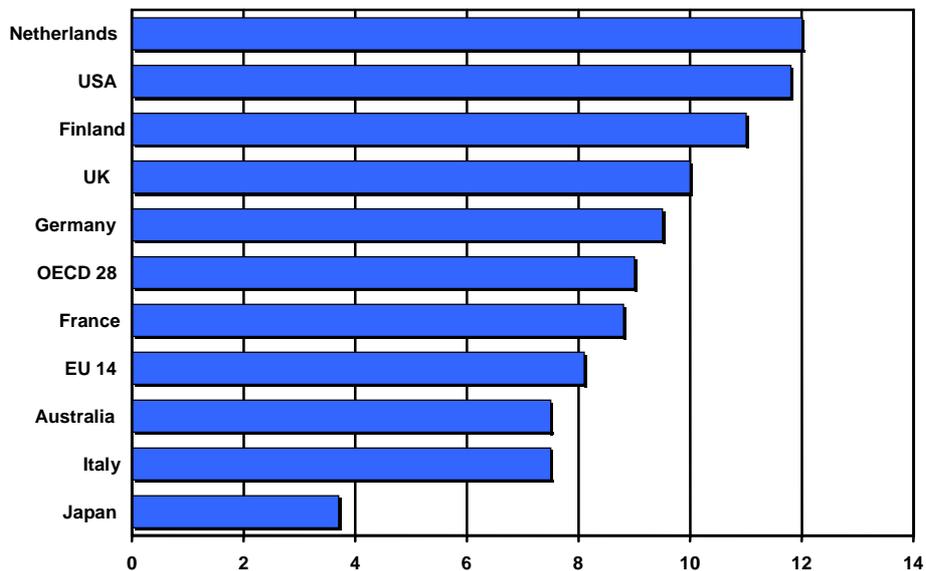
<sup>6</sup> COLECCHIA AND SCHREYER (2001) examine this in detail for the OECD. See p. 9 for more.

**Illustration 4: Software Investments as a Percentage of Aggregate Capital Investment in the Corporate Sector**



Source: COLECCHIA AND SCHREYER (2001), p. 10. Figures for Finland, Italy and Japan from 1999.

**Illustration 5: Packaged Software as Percentage of Total ICT Market in Selected Countries in 2001**



Source: OECD (2002), p. 114.

As Illustration 4 shows, software investments accounted for a growing percentage of aggregate business investment during the nineties.<sup>7</sup>

Among software investments, spending on packaged software was particularly high.<sup>8</sup> On average, 9 percent of all investments in the information and communications sector in all OECD countries were in packaged software in 2001. This is in contrast to 5.5 percent in 1992. Spending for packaged software accounts for an especially high percentage (over 10 percent) in the Netherlands, the US and Finland (see Illustration 5)<sup>9</sup>.

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<sup>7</sup> Cf. OECD (2002), p. 110, and COLECCHIA AND SCHREYER (2001), p. 9-10. The latter authors note that the various growth phases for individual countries should be considered when comparing investments. For example, Finland was undergoing a recession in the early nineties, while Japan's recession hit in the late nineties.

<sup>8</sup> Cf. Section 1.2 in this chapter on the individual market segments for packaged software.

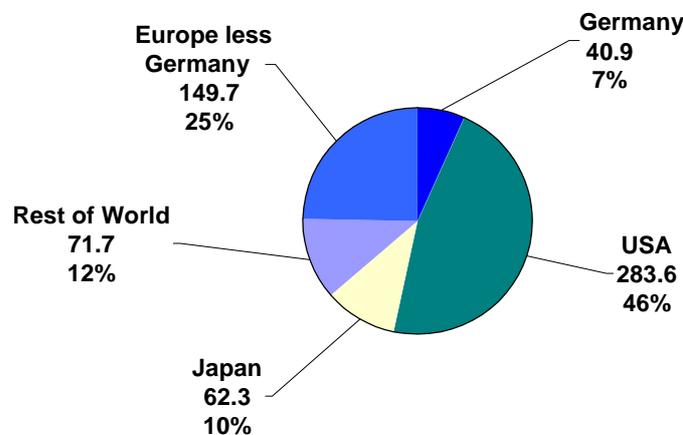
<sup>9</sup> Cf. OECD (2002), pp. 113-114. The only available data refer to the entire ICT market, including telecommunications and hardware.

## 2. The German Market for Software and IT Services

### 2.1 An International Comparison of Market Trends

Before this study examines individual figures on the impact of the German IT market, it will first rank the size of the market for software and IT services in an international comparison. The volume of the global market for software and IT services in 2002 was 608.2 billion euros. Of this total, 207.2 billion euros went to software and 401 billion euros to IT services. The US had the largest slice of total market volume in 2002 at 283.6 billion euros, followed by Europe, with 190.6 billion euros, and Japan, with 62.3 billion euros.<sup>10</sup> Illustration 6 shows what share each region had in the global market.

**Illustration 6: Breakdown of the Global Market for Software and IT Services in 2002**

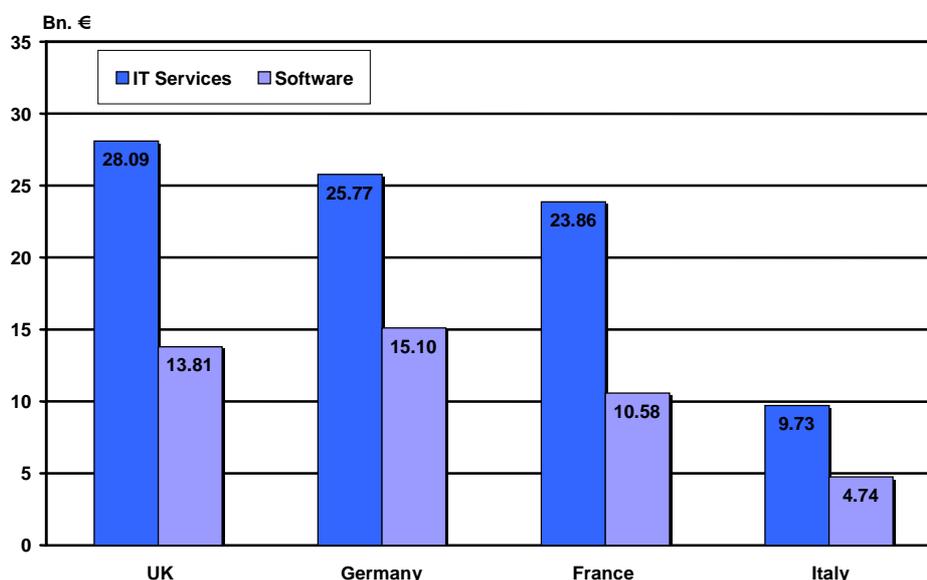


Source: EITO (2003), p. 345.

Illustration 7 shows the market volume in selected Western European countries. Germany has a 22 percent share of the Western European market for software and IT services.

<sup>10</sup> Cf. EITO (2003), p. 343.

**Illustration 7: The Western European Market for Software and IT Services in 2002 – Selected Countries**



Source: EITO (2003), pp. 357, 358, 361 and 368.

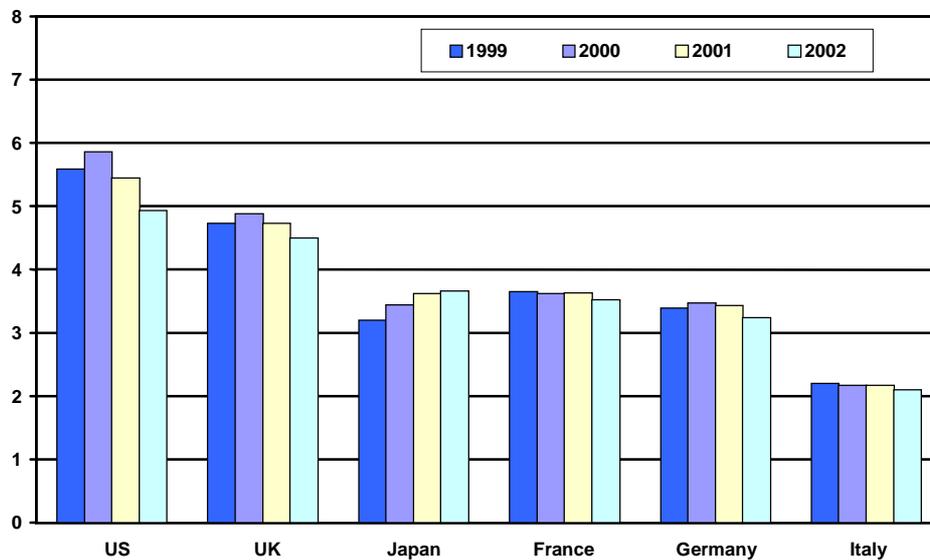
2002 sales stood at 40.9 billion euros. Other important markets in Europe include the UK (41.9 billion euros), France (34.4 billion euros) and Italy (14.5 billion euros).

Following the US (97.3 billion euros) and Japan (18.7 billion euros), the German software market (15.1 billion euros) was the third-largest market in the world in 2002. This is also true of the IT services market, where the US has an aggregate volume of 186.3 billion euros and Japan a market volume of 43.5 billion euros.<sup>11</sup>

In addition to the absolute size of the market, the ratio of IT spending to gross domestic product constitutes another criterion for classifying individual markets. Illustration 8 shows the ratios of IT expenditure to gross domestic product. In Germany, the ratio of IT spending to GDP is within the average range for Western Europe (Western Europe 2002 – 3.33 percent). The ratios for comparable industrialized countries such as France or Japan are similar. IT expenditure in the US and the UK is higher than average. The ratios are equally high in several countries not listed in the illustration, namely Sweden, Finland, Switzerland and the Netherlands.

<sup>11</sup> Cf. EITO (2003), p. 345.

**Illustration 8: Ratio of IT Outlays to Gross Domestic Product**

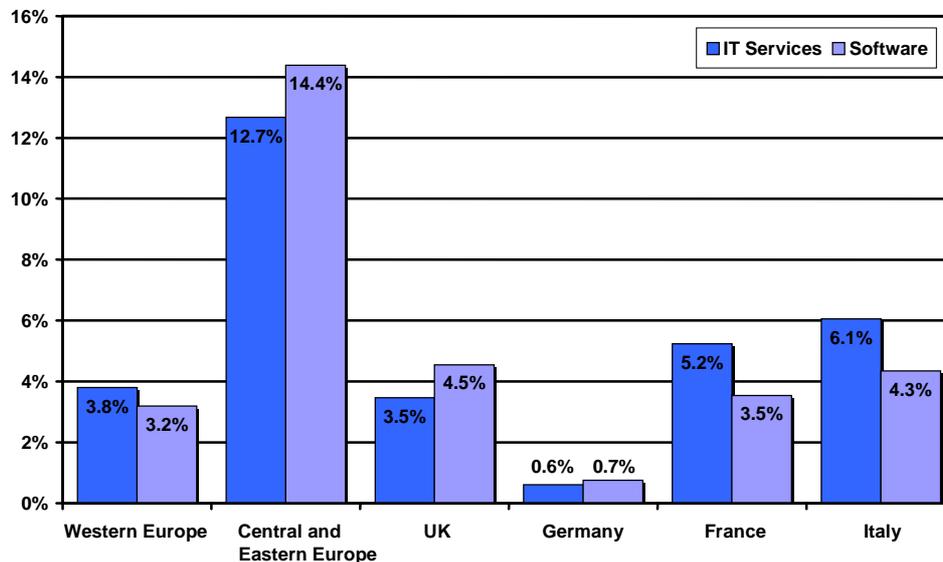


Source: EITO (2003), p. 396.

The OECD has forecast that economic growth rates in the European Union will reach 1.9 percent in 2003 and 2.7 percent in 2004. These rather low-key growth forecasts are reflected in spending on IT products and services. Growth forecasts for hardware spending in particular are lagging far behind overall economic growth figures. In contrast, spending on software and IT services is expected to grow more strongly. This growth is being driven by middleware, outsourcing and application management.<sup>12</sup> If one compares the German IT market with other key Western European countries, it quickly becomes clear that the German IT market is performing much more poorly than comparable European countries. The growth forecasts for Germany are much lower than those for other European countries.

<sup>12</sup> Cf. EITO (2003), p. 51.

**Illustration 9: Forecasts of IT Market Growth in 2002-2004 in Selected Western European Countries**



Source: EITO (2003), p. 349.

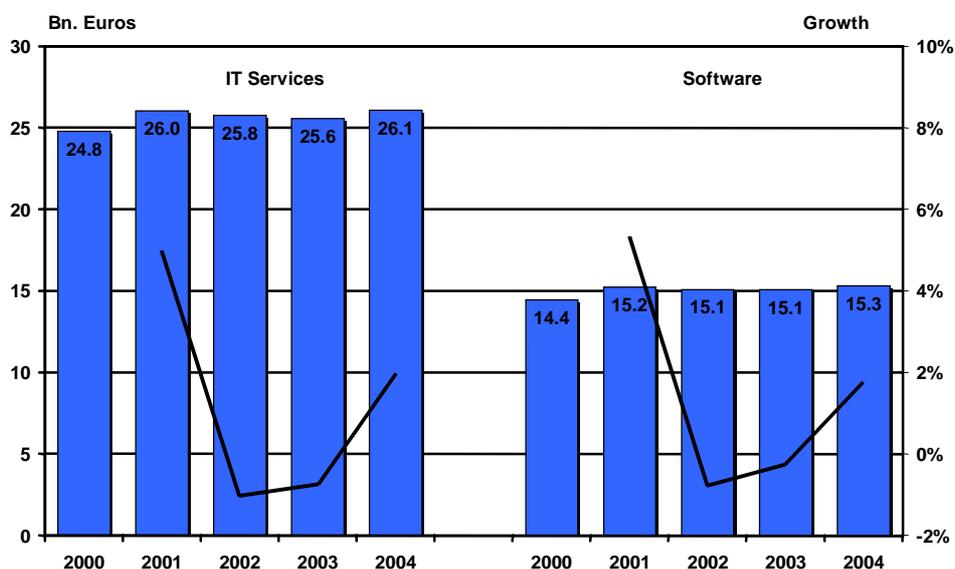
The German market for software and IT services grew from 37.7 billion euros to 41.4 billion euros between 1999 and 2002. The IT industry experienced a particularly vigorous growth boom in the late nineties. This growth was driven by three concurrent effects: the increasing popularity of the internet, the launch of the euro and the Y2K problem. Taken together, these three circumstances motivated companies to invest heavily in IT equipment.<sup>13</sup>

Since the year 2000, the German market for software and IT services has slowed down considerably or is stagnant compared to the late nineties. Growth forecasts for the software and IT-services market remain downbeat until 2004.<sup>14</sup> They are also very low compared to earlier years. Illustration 10 shows the market volume and predicted performance of the German software and IT-services market between 2000 and 2004.

<sup>13</sup> Cf. BITKOM (2003a), p. 2.

<sup>14</sup> Cf. BITKOM (2003b), p. 2.

**Illustration 10: Development of the Software and IT-Services Market in Germany**



Source: EITO (2003), p. 358.

This means that the German IT market is, in terms of market volume, one of the most important markets in the world. The size of the market is offset by the fact that IT spending is rather average relative to GDP. The current market environment is overshadowed by downbeat growth forecasts for the overall economy, which are in turn reflected in low levels of spending on IT services and software.<sup>15</sup>

**2.2 The Market for IT Services and Software in Various Sources**

The export statistics do not clearly categorize software as a product or a service. However, basic principles of macroeconomics require us to classify articles as “tangible” (goods) or “intangible” (services) based on whether they can be stored. Furthermore, we must assume that service providers render individual, and not stan-

<sup>15</sup> Cf. KUHN (2003), pp. 121 et. seq. for a treatment of foreign trade with software and IT services. As of September of 2000, packaged software (on physical disks) must be reported in the **balance of trade**. Reported packaged software is valued at the value of the disk plus the market value of the program. What the export statistics do not include are software solutions developed for individual customers (“custom software”) since the service component is generally considered to be the main component of such solutions. Foreign trade with IT services is incorporated in the **invisible balance**. The invisible balance maintained by Deutsche Bundesbank also includes “Receipts/spending for IT services”. This includes payments for creating and maintaining software and for license payments. In other words, the invisible balance does not differentiate between packaged and custom software and thus makes it theoretically possible for data to be counted twice in the export statistics. In reality, though, the invisible balance

standardized, services and that services may only be sold if the producer and consumer work together in person. If this assumption is applied to software developed for an individual customer, the result of a service is software development. However, if standardized software products are offered to a larger group of consumers, these products are considered to be normal, tangible goods.<sup>16</sup>

In Germany, software and IT services are considered part of the service sector. Being a service market, data on the German market for IT services and software are not as comprehensive as the data on other markets. It was not until the year 2000 that detailed primary data began to be collected on the sector and its structure in Germany. The only data available on the IT market prior to this date are contained in the sales-tax statistics, which do not always clearly indicate the importance of software in the market. This is frequently underscored by the software component listed in official statistics because a large portion of the software is developed in-house and not pitched to the market at large. In addition, software is often a necessary part of other products and is frequently not recorded or posted individually.<sup>17</sup>

Illustration 11 visualizes data on the size of the German software and IT-services market as listed by various sources. The illustration clearly shows that there are deviations in market volume levels and in the division of the market into software and IT services. The main reasons for these deviations are differences in statistical methods and market definitions. Custom software, for instance, does not clearly belong to a particular category: it can be categorized as a software product or, as it is an individualized product that requires a considerable service component, as an IT service. If we consider these various sources, we see that the statistics on services do not differ fundamentally from other sources and that their sales data are within the range of the EITO figures used above. Thus, the statistics on services appear to offer data on the overall size of the market that are consistent with the aforementioned EITO figures.

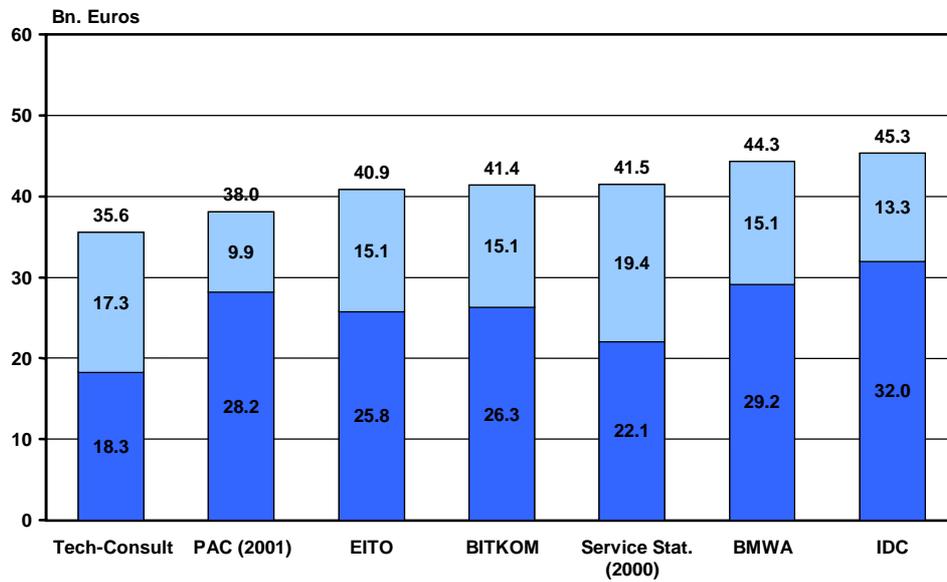
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generally only contains custom software because it allows services worth 12,500 euros or less to be excluded.

<sup>16</sup> Cf. KUHN (2003), p. 122.

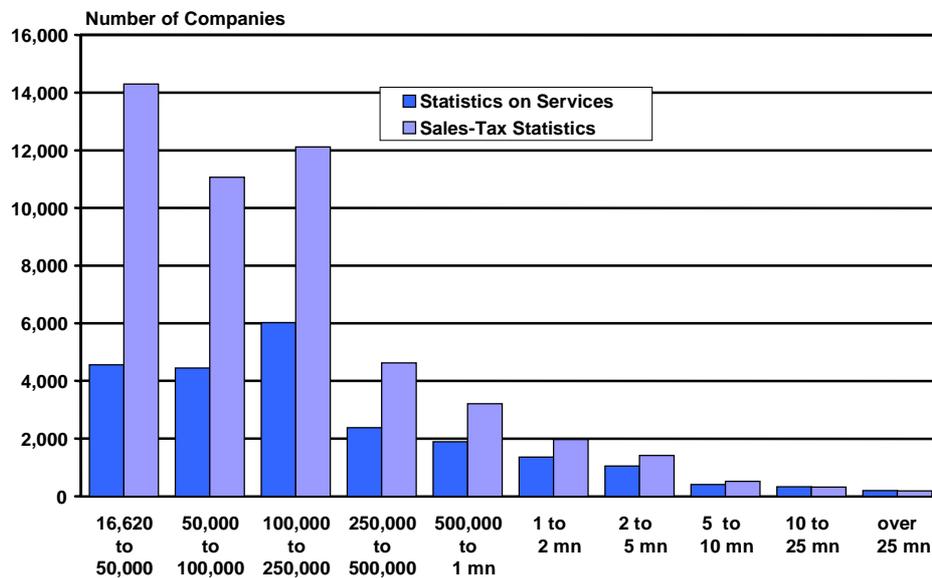
<sup>17</sup> Cf. LEHRER (2000), p. 587, and GRÖHN (1999), p. 17.

**Illustration 11: The German Market for Software and IT Services in 2002 in Various Sources**



Source: Compiled by authors based on the publications listed above.

**Illustration 12: Number of Companies in the Software and IT-Services Sector: Statistics on Sales Tax and Services for the Year 2000**

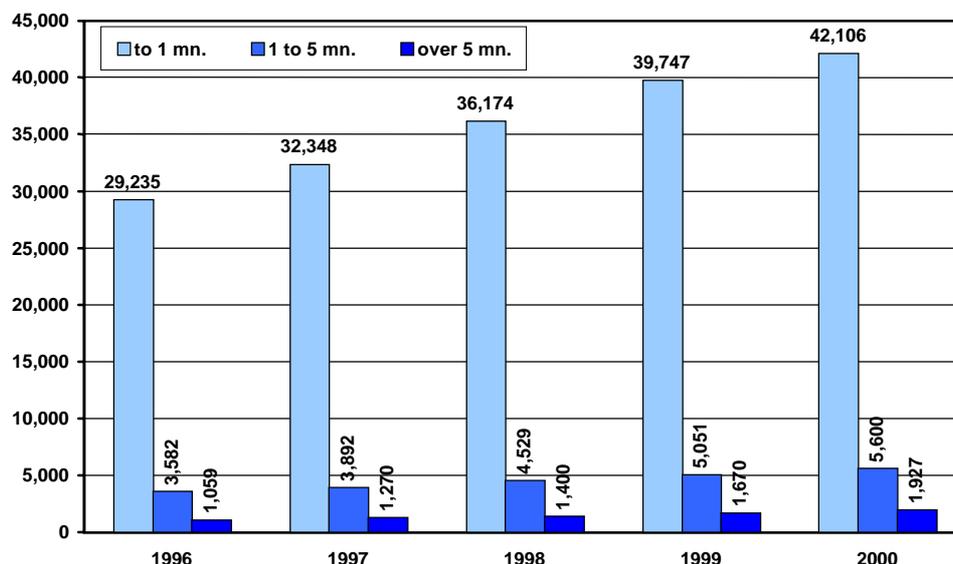


Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data, and GERMAN FEDERAL STATISTICAL OFFICE (2001).

In addition to the statistics on services, another frequently cited source of data on the software and IT-services market are the sales-tax statistics.<sup>18</sup> They are based on the advance sales-tax returns filed by companies in a particular sector and are available over relatively long time periods for all sectors. The sales-tax statistics provide approximately the same market-size data as the statistics on sales. (39.7 billion euros vs. 41.5 billion euros). However, the sales-tax statistics show a much greater number of companies than the statistics on services.

Illustration 12 shows the number of companies listed in the sales-tax and service statistics for each sales category. We can see that the corporate-tax statistics show a much higher number of companies, particularly among those lower sales categories (500,000 euros or less) that include so-called microbusinesses. The reason for this is that the sales-tax statistics are based on the advance sales-tax returns filed by registered companies in a particular sector. In the software and IT-services sector, setting up a business is a very easy process because it does not require the extensive investments that manufacturing does. However, the sales-tax statistics do not offer any information about the actual economic success or failure of such microbusinesses.

**Illustration 13: Changes in Number of Companies (Sales-Tax Statistics)**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2001).

<sup>18</sup> Cf. GERMAN FEDERAL STATISTICAL OFFICE (2001) for more on sales-tax statistics.

As Illustration 13 shows, growth in company numbers was particularly strong among smaller enterprises in the late nineties. Since the statistics on services were not collected during that period, we do not have any comparative figures.

Despite the aforementioned deviations, the statistics on services appear to provide the most reliable data on the market structure of the software and IT-services market. They are based on a decentralized random-sample survey, which makes them more accurate than the sales-tax statistics at reflecting actual market figures.<sup>19</sup> Furthermore, the statistics on services contain data on absolute market size which are corroborated by other market-research institutes. Another advantage of the statistics on services is their detailed breakdown of the branches of economic activities. It is for these reasons that this study obtains its data on the German software and IT-services market from the statistics on services.<sup>20</sup>

### **2.3 Figures from the Statistics on Services**

The German Federal Statistical Office's publications list IT services and software under "Branch of Economic Activity 72" (WZ 72)<sup>21</sup> "Data Processing and Databases".<sup>22</sup> While the names given to the branch of economic activity and its subgroups may appear somewhat obsolete, they do indeed cover most of the software and IT-services industry.

Table 1 shows the number of companies and the entire "Data Processing and Databases" branch of economic activity with all its subcategories.

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<sup>19</sup> Cf. GERMAN FEDERAL STATISTICAL OFFICE (2002a), General Notes and Explanations on the Statistics on Services, for more on survey methods.

<sup>20</sup> The statistics on services only list sales categories with a maximum volume of 25 million euros in sales. However, the delineation of the SME category needs to be based on a sales limit of 50 million euros. To compensate for this difference, we shall use the sales-tax statistics wherever necessary in order to determine the percentage distribution of sales across those sales categories that exceed 25 million euros. The study clearly indicates where this technique is used.

<sup>21</sup> In Edition 93 of the Federal Statistical Office's classification of economic activities (WZ 93), data-processing and databases constitute department (two digits) No. 72, while software companies constitute group (three digits) No. 72.2.

<sup>22</sup> Cf. KUHN (2003), p. 121.

**Table 1: IT Services and Software in Branch of Economic Activity No. 72 in the German Statistics on Services**

WZ		Number of Companies		Sales	
72	Data Processing and Databases	22,652		41,506,109	
72.1	Hardware Consulting	1,821	8.0%	1,841,165	4.4%
72.2	Software Companies	14,015	61.9%	24,730,926	59.6%
72.20.1	Software Consulting	5,209	23.0%	5,321,348	12.8%
72.20.2	Software Development	8,806	38.9%	19,409,578	46.8%
72.3	Data-Processing Services	3,630	16.0%	9,883,008	23.8%
72.30.1	Data-Collection Services	1,428	6.3%	1,249,757	3.0%
72.30.2	Data-Processing and Tabulation Services	713	3.1%	4,980,275	12.0%
72.30.3	Provision Services for Subscriber Systems	212	0.9%	283,443	0.7%
72.30.4	Other Data-Processing Services	1,277	5.6%	3,369,533	8.1%
72.4	Databases	182	0.8%	335,516	0.8%
72.5	Maintenance and repair of office machines and data-processing equipment	826	3.6%	820,314	2.0%
72.6	Other data-processing-related activities	2,177	9.6%	3,895,179	9.4%
72.60.1	Communications	501	2.2%	805,448	1.9%
72.60.2	Data-processing-related activities n.e.c.	1,677	7.4%	3,089,731	7.4%

Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a).

The most important subgroup is Branch 72.20.2, "Software Development". It accounts for 46.8 percent of all sales in the entire branch of economic activity. This subcategory comprises the design and programming of operational systems, i.e.:

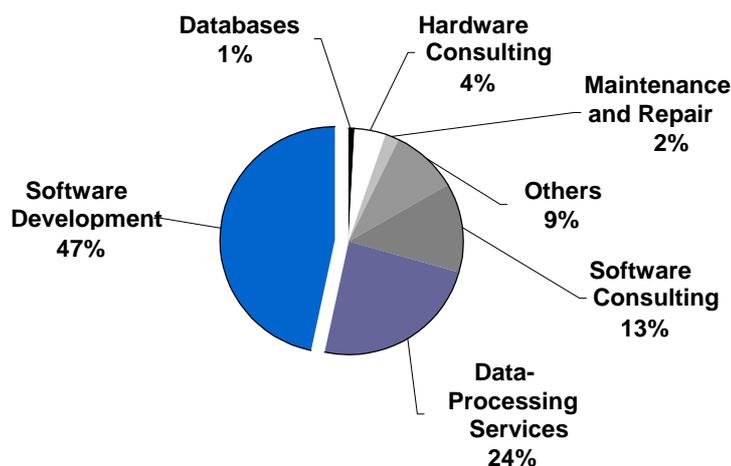
- Development, production, delivery and documentation of software as contracted by specific users
- Development, production, delivery and documentation of (non-customized) packaged software
- Writing of programs according to user instructions.<sup>23</sup>

As is revealed in the explanations to the branch "Software Development", this group also includes the development, delivery and documentation of packaged software. The only part of this branch that is considered part of the manufacturing

<sup>23</sup> Cf. GERMAN FEDERAL STATISTICAL OFFICE (1999), p. 389.

sector is the reproduction of programmed, non-customized software.<sup>24</sup> This is also the explanation given for custom software being listed in the statistics on services as software and not as an IT service.

**Illustration 14: Distribution of Sales in the "Data-Processing and Databases" Branch of Economic Activity in the Statistics on Services**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data.

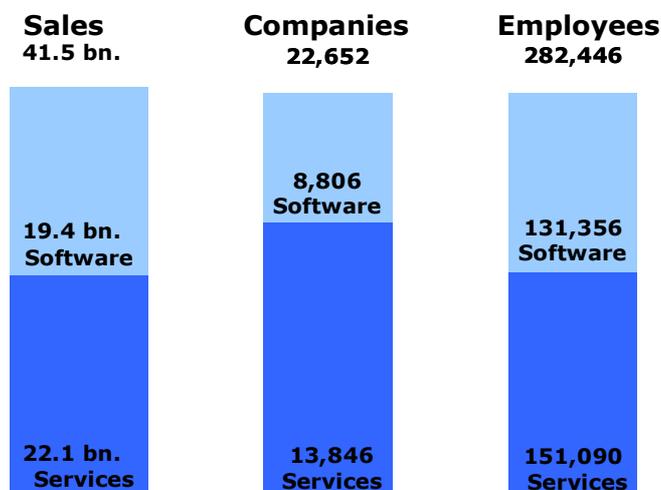
Thus, the branch "Software Development" covers the area previously described as the software market. It comprises all companies engaged in software development in Germany. All other branches of economic activity are collectively treated in this analysis as the IT-services market. Illustration 14 shows this breakdown and the most important subgroups of the IT-services market on a sales basis.<sup>25</sup>

Since the subgroups of the "Data-Processing and Databases" branch of economic activity can be subsumed under either IT services or software development, Illustration 15 shows the most important key figures for these two groups.

<sup>24</sup> It is listed in WZ 22.33.0, but only consists of the creation and copying of disks. See HABER AND GETZNER (2003), p. 7, for another breakdown.

<sup>25</sup> This also clearly shows that the "Databases" subcategory listed in WZ 72 is no longer of any great importance overall.

**Illustration 15: Key Figures on the Software and IT-Services Market in Germany in the Year 2000**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data.

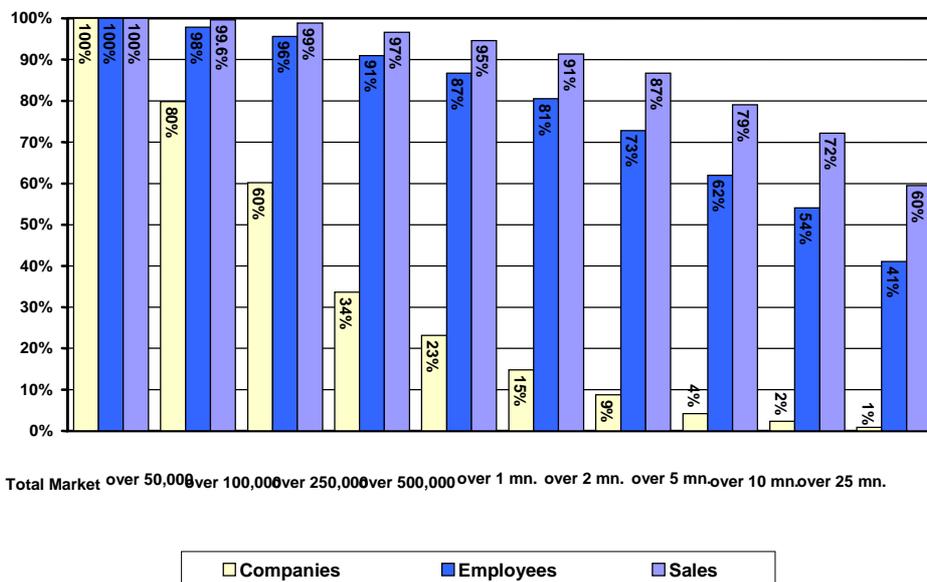
These data will be used to calculate economic impact in a comparison with the overall market. According to the data, the software and IT-services market in the year 2000 had 41.5 billion euros in aggregate sales, 22,652 companies and 282,446 employees. The latest batch of data is only available for the year 2000.<sup>26</sup> However, because the software and IT-services market has experienced the aforementioned low growth levels at the beginning of the millennium, it is safe to assume that these data still represent a useful standard of reference.

## 2.4 Market Structure, Employees and SME's

There are two key characteristics that mark the structure of the software and IT-services market. First, there are a large number of so-called microbusinesses with sales below 500,000 euros. Illustration 16 shows that around 77 percent of all enterprises are microbusinesses. On average, they have fewer than 2 employees per company and account for only 5 percent of aggregate sales. Second, most of the sales and employees are concentrated in large enterprises with annual sales in excess of 25 million euros. While these companies only account for 1 percent of the total number of enterprises, they still generate 60 percent of sales and provide 41 percent of all jobs.

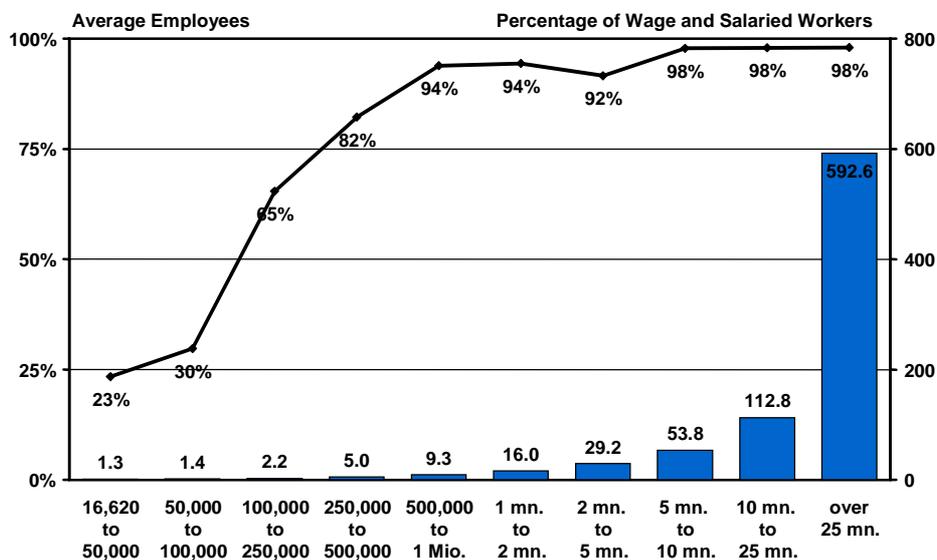
<sup>26</sup> The German Federal Statistical Office has stated that it will not be able to provide more current statistics on services until the end of 2003.

**Illustration 16: Companies, Sales and Employees per Sales Category, Listed as Percentages**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data.

**Illustration 17: Average Number of Employees Per Sales Category**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data.

Illustration 17 shows the average number of employees per sales category and the percentage of wage and salary earners per sales category. The illustration clearly demonstrates the significance of employers with sales in excess of 25 million euros. Microbusinesses, on the other hand, are often self-employed entrepreneurs with

few employees. The vast bulk of employees in the software and IT-services market work at companies with sales in excess of 1 million euros.

A large proportion of the companies in the software and IT-services market can be classified as SME's. However, there is no generally or legally valid definition for the term "SME". In Germany, the most useful definition is that given by the Institute for Small and Medium-size Enterprises (or IfM, for short). This definition cites two quantitative criteria and one qualitative criterion that companies must meet in order to be considered an SME:<sup>27</sup>

- Payrolls of less than 500 employees. This is also the upper limit used in Germany for small and medium-size companies. Also, companies have to comply with two more requirements to be considered SME's.
- Sales limit of 50 million euros. Because levels of vertical integration and value creation are far from uniform, the IfM has used separate sales categorizations for each industry. It did, however, abandon in 2002 the lower sales limit of 12.8 million euros for retailing, transport, storage and communication and other business services.
- Not affiliated with large enterprises / not a subsidiary.

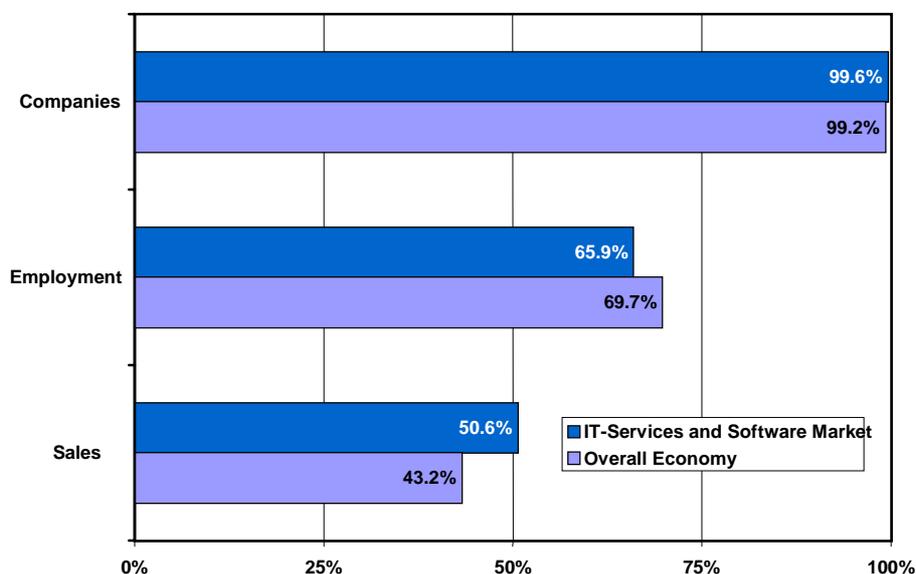
The European Union has also published a definition for small and medium-size enterprises. According to it, however, it only takes 250 employees to be classified as a large enterprise. The EU Commission set the sales limit in 1996 at 40 million euros.<sup>28</sup> The IfM's definition shall serve as the basis for this analysis.

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<sup>27</sup> Cf. INSTITUTE FOR SMALL AND MEDIUM-SIZE ENTERPRISES, [www.ifm-bonn.org/dienste/daten.htm](http://www.ifm-bonn.org/dienste/daten.htm) (10/11/2003).

<sup>28</sup> Cf. INSTITUTE FOR SMALL AND MEDIUM-SIZE ENTERPRISES (2002a), p. 14-19, for more on the European Union definitions and definitions in other countries.

**Illustration 18: Share of SME's in Total Number of Companies, Sales and Payrolls as a Percentage (Based on Sales Limit of 50 Million Euros)**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data, and *Institute for Small and Medium-size Enterprises* (2003).

The statistics on services do not permit any analysis to be conducted that investigates the extent to which both quantitative criteria are met, i.e., sales volume and payrolls. Nor can any qualitative assessments be made as to whether a company is dependent on a large corporation. If we use the sales volume as a standard of reference, 99.6 percent of all companies in the IT-services and software market generate sales of less than 50 million euros and, as such, can be considered small and medium-size business.<sup>29</sup> If we go by payrolls, 99.7 percent of all companies have fewer than 500 employees. However, these figures do not provide any information on how many companies with annual sales in excess of 50 million euros also have more than 500 employees. On the other hand, they can be viewed as an indication that considerably more than 99 percent of the companies qualify as SME's.

If we base our definition of an SME on a sales limit of 50 million euros, then SME's generate 50.6 percent of all sales and employ 65.9 percent of all people in the software and IT-services market.

<sup>29</sup> As mentioned above, the statistics on sales only list sales categories up to a maximum sales volume of 25 million euros. Since the service and sales-tax statistics differ only marginally in the number of companies listed in higher sales categories, the structure for companies with sales volumes in excess of 50 million euros was taken from the sales-tax statistics and applied to the statistics on services.

Illustration 18 shows these percentages and presents them in relation to their counterparts for the overall economy.<sup>30</sup> Now that the most important data on the German software and IT-services market have been presented, the next chapter will examine the Microsoft partner model in the IT market. The chapter will first focus on the Microsoft partner model and the method of analysis.

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<sup>30</sup> Cf. the publication put out by the INSTITUTE FOR SMALL AND MEDIUM-SIZE ENTERPRISES, [www.ifm-bonn.org/dienste/daten.htm](http://www.ifm-bonn.org/dienste/daten.htm) (10/11/2003) for more on the current crop of overall economic data.

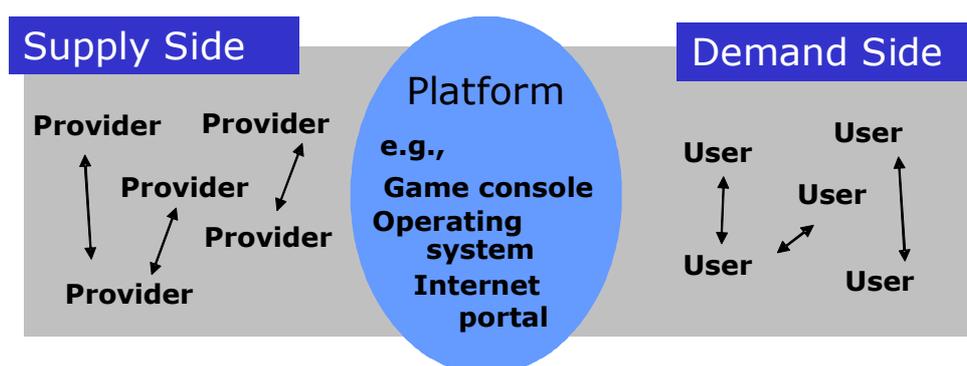
### 3. The Microsoft Partner Model

#### 3.1 Definition of Economic Impact and Unique Traits of the Partner Model

Since the IT sector has a horizontal structure that leans heavily on division of labor, we cannot derive the economic impact of any given company in the sector from its sales and staff figures. In order to assess economic impact, it must also be considered what role the company has in creating business opportunities for other companies. The partner program and technology offered by Microsoft provide other companies with a platform that they can use as a starting point for their own business models.

Economically speaking, the partner model can be classified as a value-added base for the partners' economic activities. It provides them with the freedom to offer their own IT services and software products and therefore differs fundamentally from a pure distribution model. Furthermore, there is a strong correlation between the extent to which partners' business activities can be linked to Microsoft and Microsoft's economic impact on the German IT sector. As such, Microsoft is a driving force in the German IT market.

**Illustration 19: Two-Sided Market**

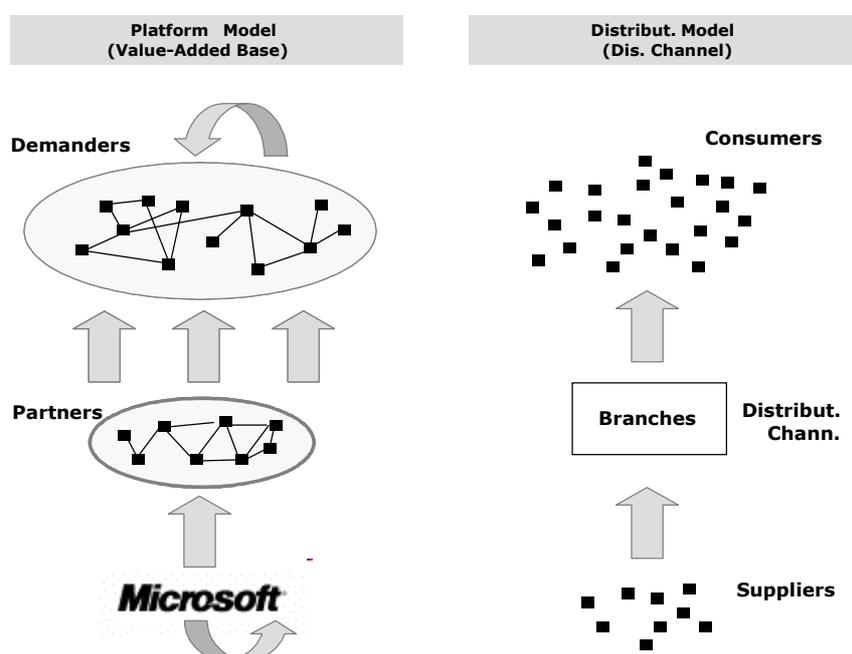


In this study, economic impact will be understood to mean induced value-added as a measure of economic activity outside of the observed unit (i.e., Microsoft Deutschland GmbH). This study does not include in its calculation of economic impact any productivity effects resulting from the deployment of Microsoft technologies, as such an inclusion would necessitate an industry-specific quantification

based on comprehensive primary-data collection. Moreover, it is equally difficult to ascertain the productivity impact of software for individual manufacturers.

Software markets are essentially two-sided markets, which are distinguished by network effects on the supply and demand sides. Typical platforms with the properties of a two-sided market are operating systems, game consoles and even internet portals. The economic value of a platform consists of bringing suppliers and users together. Illustration 19 shows a simplified model of a two-sided market.

#### Illustration 20: Platform vs. Distribution Model



The more suppliers there are offering products or services for a given platform, the more attractive it is to users. At the same time, the more users opt for a certain platform, the more attractive it is to suppliers. Supply on a two-sided market therefore depends on the number of demanders using a given platform. Likewise, the more suppliers provide products or services for a platform, the more demanders will use it. The decision to use a certain platform is not necessarily associated with specific investments, as in the case of a game console. For example, users could quite effortlessly switch between different internet pages where goods are auctioned off. In reality, however, suppliers and users tend to congregate around those platforms that are accessed by most of the other suppliers and users.

As a result, platform providers have to try to bring together on their platforms the two sides of the market – demanders and suppliers. Each platform provider has a vested interest in finding as many providers as possible for its own platform. Every partner who contributes its services and products to the group increases the overall benefit for the other partners and for consumers. At the same time, the widening of the product range improves the platform’s utility for the demander. This results in the kind of snowball effect portrayed on the left-hand side of Illustration 20.

Every one of these partners can develop its own economic activity by providing products and services. The platform, or the partner program, only provides a basic framework; it is up to each participant to flesh out this framework in its own particular way. Each participating company can capitalize on its own new business opportunities without being directly dependent on the platform provider. This is the key difference between a platform model and the kind of distribution model portrayed on the right-hand side of Illustration 20. A pure distribution model has a clearly delineated supplier relationship that leads to production arrangements being deterministically interlaced. This does not leave any leeway open for the companies involved to develop their own economic activity beyond that proscribed by the model. Nor does this arrangement lead to the networking effects encountered on the software market, which prevents the companies from benefiting from one other’s involvement.

### **3.2 Structure of the Partner Model**

The Microsoft Partner program contemplates various forms of partnership. Microsoft partners distribute Microsoft software, work as licensing consultants, develop applications based on Microsoft technology, plan and implement IT solutions, provide technical support or train users and technicians. As such, the partner companies greatly determine how successful Microsoft will be. The purpose of the Microsoft partner programs is to create new business opportunities based on Microsoft technologies. Worldwide, Microsoft has some 750,000 partner companies, of which 350,000 are located outside of the United States. The most important Microsoft partner program is the Certified Partner program. All told, some 30,000 companies worldwide are enrolled in this program. The different forms of partnerships can be

categorized as follows: partnerships with hardware makers, partnerships with independent software vendors and partnerships with IT-service providers.<sup>31</sup>

Partnerships with hardware makers may take the form of a program for OEM (original equipment manufacturer) system manufacturers. Participating hardware makers have access to information on how to optimize their products for programs written for Microsoft platforms. These partnerships include manufacturers of printers, modems or other peripherals.

Independent software vendors (ISVs) develop and market applications based on Microsoft platforms. Partnerships with ISVs are of immense strategic importance to Microsoft because, as mentioned above, the value of a platform increases in proportion to the number of applications available for it. All ISVs have access to the interfaces for various operating systems – application programming interfaces, or APIs for short. With the APIs, the software vendors' programs can call components of the operating system so that the vendors do not have to re-program these components each time. Most independent software vendors work together with Microsoft in the Certified Partner program and obtain information and programming resources from the Microsoft Developer Network (MSDN). However, developers who are not Certified Partners can also access much of the information in the network.

IT service providers help their clients select and install products, assist them with maintenance and train their users. The various IT services described above are all included in this range of services. These services build on the software products and form a bridge to the users. IT services may consist of consulting and installation for one particular project, or they may consist of longer-term services such as the management of a hardware and software environment.

This categorization into hardware makers, software vendors and IT providers and the description of standard products and services are based on abstract, ideal types. In practice, companies may be any mixture of these forms. For example, IT service providers may also develop or adapt individual software components. The same thing applies to software vendors who sell service components in addition to their product. Sales from software and services may be generated by vendors and IT service providers alike. Thus, it is extremely difficult to cleanly categorize companies as software vendors or IT service providers.

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<sup>31</sup> Cf. MICROSOFT (2003), pp. 12 et. seq. for a description of the partner program.

There are various specializations within the partner program. However, a disaggregated examination of these different specializations is not necessary to calculate economic impact, nor will it be explored further in this study.<sup>32</sup> Next, the study will briefly describe the two programs – Microsoft for Partners and the Certified Partner program – and their characteristics and key figures for the German market.

The **Microsoft Certified Partner program** comprises two different levels of membership: the Standard membership and the Gold membership. The Gold membership is reserved for particularly qualified partners who specialize in complex projects at large companies. In order to become a Certified Partner, companies have to have a personal or a product-related certification (e.g., two Microsoft Certified Professionals on a current operating system). Furthermore, 15 percent of company sales must come from technical services. Certified Partners pay an annual fee of 1,560 euros to participate in the program. 2,500 companies are currently registered as Certified Partners in Germany, 200 of which are Gold Certified Partners.

The **Microsoft for Partners program**, on the other hand, does not require any certification. The prospective partner just has to register and provide a company profile. This makes the Microsoft for Partners program more like an entry-level program that covers the full software and IT-services market. At present, 20,000 companies in Germany are enrolled in the Microsoft for Partners program. Since the program does not require certification, the available data are not sufficient for the purposes of this study. Being a program geared more towards smaller companies than the Certified Partner program, however, it can be assumed that it does not impact sales as much. This study shall instead focus on the Certified Partner program in calculating economic impact.

### 3.3 Data Pool and Method of Analysis

Our economic-impact calculation is based on a survey of the Certified Partners. In response to an e-mail profiling questionnaire, the Certified Partners provided information about their companies, including sales data as well as detailed information about the IT services and products they offered. Illustration 21 shows an excerpt from this profiling survey. In this excerpt, the companies break down their service

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<sup>32</sup> One example of such a specialization: Microsoft CETCs (certified technical-education centers) can offer Microsoft training courses.

and product sales by percentage. 2,293 companies provided data that was de-identified and used to calculate economic impact.

**Illustration 21: Excerpt From Profiling Survey**

1. **Site's Gross Annual Revenue**  
Please provide revenue information for the last twelve (12) months (select one):

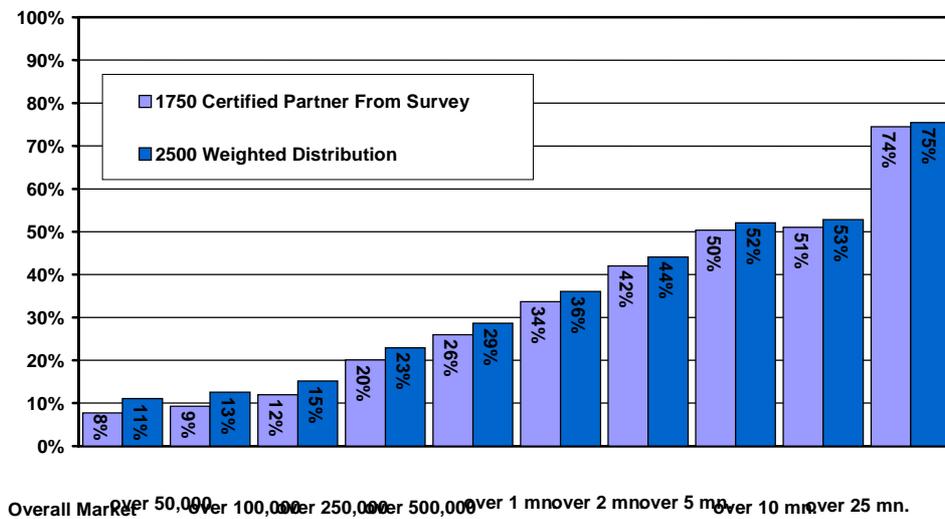
2. **Site's Services and Product Revenue** What percentage of total gross revenue is earned from the following categories? (Percentages for Product Sales + Services together must total 100%). Please refer to the [Help](#) if you have any questions on the terms used below. Please do not use zeros for categories that do not apply.  
**Information in this section will be used to help qualify Referrals.**

<b>100 % Total</b>		<b>Product Sales</b>	
<b>Services</b>			
<input type="text" value="20"/> %	Business Consulting	<input type="text" value=""/> %	Packaged Application Development for fully packaged products (for ISVs)
<input type="text" value=""/> %	Prototyping (Pilots)	<input type="text" value=""/> %	Hosted Application Development (ASP)
<input type="text" value="20"/> %	Custom Application Development including Web Development	<input type="text" value=""/> %	Software Fulfillment and Licensing
<input type="text" value="20"/> %	Application Integration	<input type="text" value=""/> %	Sale of Computer Hardware as an OEM
<input type="text" value="20"/> %	Design, Installation, Deployment and Integration (Infrastructure Integrator)	<input type="text" value=""/> %	Sale of Computer HW - System Builder
<input type="text" value=""/> %	Design, Development, and Integration of large-scale systems and applications (SI)	<input type="text" value=""/> %	Sale of Computer HW - Independent HW Vendor
<input type="text" value=""/> %	Sell Direct Internet Access (ISP)	<input type="text" value=""/> %	Other Product Sales
<input type="text" value=""/> %	Application Hosting (ASP) Services using Microsoft Platforms (Hosting Service Provider)	<input type="text" value=""/> %	<b>Other</b>
<input type="text" value=""/> %	Provides subscription-based access to hosted ISV applications managed in commercial data centers (Hosted Applications Aggregator)	<input type="text" value=""/> %	Other
<input type="text" value=""/> %	Training		
<input type="text" value=""/> %	Maintenance, Technical Support, Helpdesk		
<input type="text" value="20"/> %	Other Services		

In these data records, sales information was provided by 1,750 companies. The available sales data was checked for plausibility and compared to the companies listed per sales category in the statistics on services, resulting in the discovery that companies in the lower sales categories tended to leave out sales information. The missing companies may therefore be distributed according to the percentage of non-Certified Partner companies in a sales category.

To do this, we calculated the difference, for each sales category, between the companies listed per category in the service statistics and the companies who participated in the survey and belong to a certain sales category. As a proportion of the total number of companies not participating in the Certified Partner program, this difference constituted the weighting factor for the distribution of the missing Certified Partners. If it is assumed that companies with lower sales provided incomplete information on the survey, this distribution method will group more of the missing companies in the lower sales categories. The overall coverage of the partner program thus does not change significantly even if we extrapolate sales data for companies who did not provide sales information in the survey.

**Illustration 22: Shares of Certified Partners per Sales Category**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data and the authors' own calculations based on a company profiling survey.

Illustration 22 shows not only the 1,750 Certified Partners who responded to the survey, but also the extrapolated sales figures for all 2,500 Certified Partners. One of the results of this extrapolation based on the probability that a particular company will belong to a particular sales category is that more companies are grouped in the lower sales categories, while the higher sales categories remain virtually unchanged. However, because the upper sales categories contribute the bulk of overall sales, the percentages of the total market are not significantly affected by our having included 2,500 companies.

Although the missing companies have been nominally assigned to sales categories, the economic impact will be calculated based only on the sales data available from the 1,750 companies. We decided to exclude any extrapolated data from the data pool in order to enhance the empirical validity of the study. That means that the economic impact information provided constitutes an empirically verifiable minimum.

## 4. Results of the Economic Impact Calculations

### 4.1 Input/Output Analysis

The purpose of the input/output analysis preceding our further observations on economic impact is to identify the extent to which other economic sectors interpenetrate with the sector in which Microsoft Deutschland GmbH maintains its direct economic activity. This will allow us to delineate the economic boundaries for the economic impact defined in Section 3.1.

Our further observations are based on the German Federal Statistical Office's input/output table at basic prices,<sup>33</sup> which records the production structure of the German economy as 71 separate branches of economic activity; this study focuses on the IT sector, or branch (WZ) 72 (data-processing and database services).<sup>34</sup> The latest available input/output data are for the year 2000. However, since there was neither nominal nor real growth of any significant degree in either the overall economy or the IT sector in 2001 or 2002, the input/output values for the year 2000 can be brought into approximate relation to the 2002 data collected in the Certified Partner survey.

Branch 72 generates 36.5 million euros, or 2 percent of all value added in Germany, ranking it at number 16 of all 71 sectors, ahead of the sector "chemicals and chemical products" or the sector "trade, maintenance and repair services of motor vehicle and motorcycles/retail trade services of automotive fuel", each of which have 1.6 percent. The high productivity levels of the German IT sector compared to the overall economy are demonstrated by the fact that two percent of value is added by one percent (330,000) of all employees, mainly because this sector contains a large proportion of highly-qualified workers.

The following observations are crucial to assessing and interpreting economic impact when examining the IT sector's position in the input/output matrix.

Value-added, which serves as an indication of economic activity within a sector, stands at 64 cents per euro of sales, much higher than the national average (43

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<sup>33</sup> Cf. GERMAN FEDERAL STATISTICAL OFFICE (2002B).

<sup>34</sup> The naming of the branches pursuant to CPA / WZ 93 does not correspond to the numbering of the sectors in the input-output table.



much farther down, business services (1.6 billion euros) and the computer-hardware sector (WZ 30 at 1.2 billion euros). This tight self-interpenetration of the sector and its strong position as a net supplier of other industries is another indication that additional IT production activity adds value directly in WZ 72.

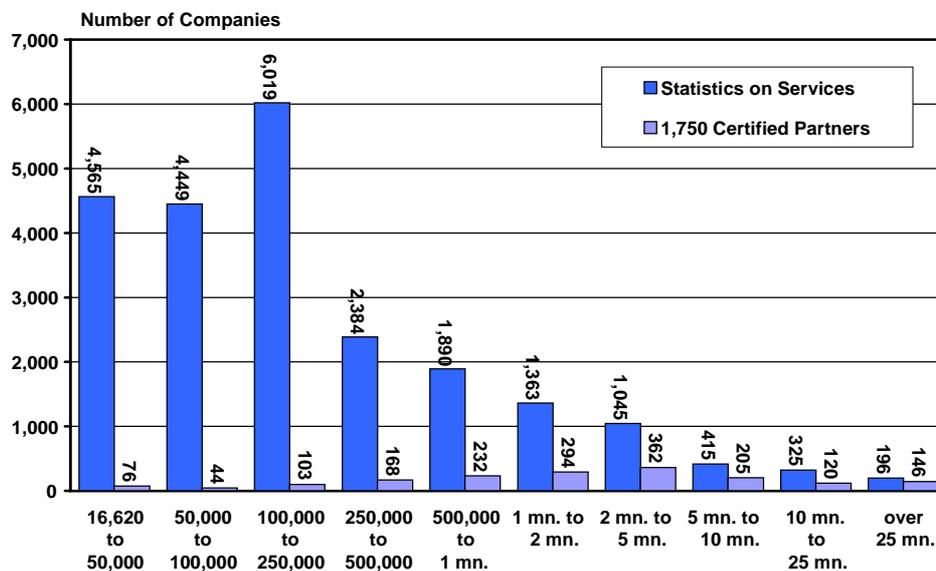
This result is corroborated by calculating the Leontief value-added multiplier for the IT sector. If end demand for IT were to increase by one euro, this would, after accounting for all primary effects, induce an additional 78 cents of value-added in the IT sector, while all other sectors together would increase their value-added by a mere 13 cents. That means that the increase in induced value-added in the IT sector is more than 6 times greater than that of the rest of the economy. As such, any production increases in the IT sector will increase primary factor inputs in this sector (i.e., increased employment), but will not result in a significant increase in intermediate inputs from other sectors.

It thus follows that the economic impact of Microsoft Deutschland GmbH is almost exclusively restricted to the German IT sector itself; trickle-down effects in other sectors can essentially be ignored in the analysis.

## **4.2 Interpenetration with the IT Sector**

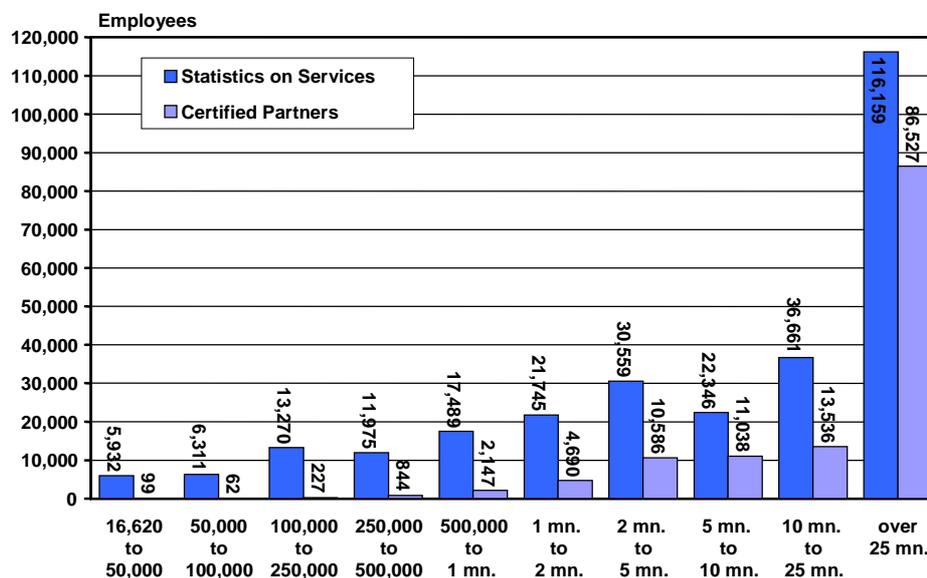
Illustration 24 lists the total number of companies in each sales category. Next to each of these bars is a bar representing the Certified Partners according to the sales information they gave in the profiling survey. While Certified Partners are present in all sales categories, they are present in greater numbers in the upper sales categories. It should be mentioned at this point that, of the 146 companies in the sales category of 25 million euros or more, 44 have sales of less than 50 million euros and thus qualify as SME's. An extensive discussion of Microsoft Deutschland GmbH's interrelationships with SME's can be found in Section 4.5, starting on page 51. The illustration does not include the companies from the Microsoft for Partners program, as their available sales figures are not detailed enough to allow the enterprises to be reliably assigned to individual sales categories. However, it can be assumed that companies in the Microsoft for Partners program may be found with greater frequency in the lower sales categories, which would increase the percentage of partner companies in the lower sales categories.

**Illustration 24: Number of Total Companies and Certified Partners by Sales Category**



Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data and the authors' own calculations based on a company profiling survey.

**Illustration 25: Number of Employees Total and Employees at Certified Partners by Sales Category**



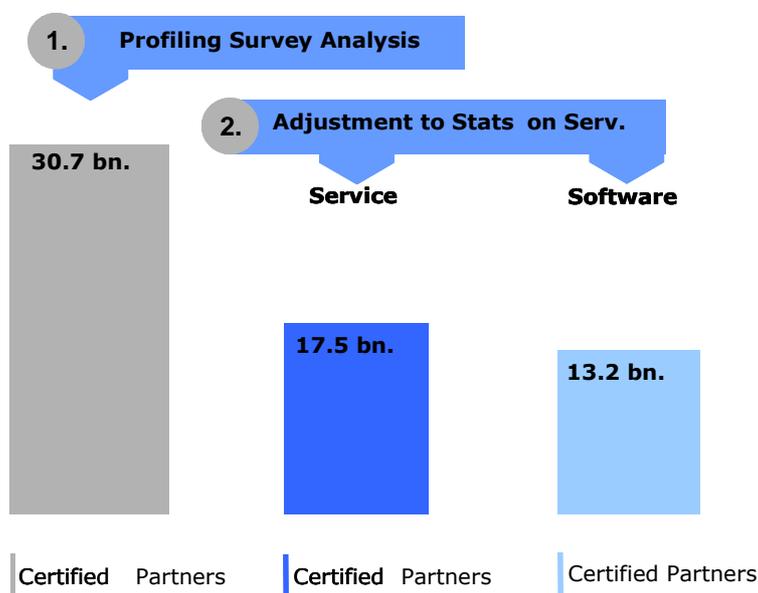
Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data and the authors' own calculations based on a company profiling survey.

Illustration 25, using the same type of presentation as the previous illustration, displays the number of employees in the software and IT-services market as a whole, and the number working at Certified Partners. As the number of Certified Partners in the upper sales categories increases, so does the number of employees

working at the Certified Partners. It should also be noted that the final sales category provides a key contribution to overall employment. As presented in Illustration 16 on page 30, around 40 percent of all workers are employed in this sales category.

As shown in Illustration 22, the percentage of companies in the Certified program increases as the size of the company increases. Because of the surfeit of microbusinesses, it is advisable to exclude all companies below a certain sales category when calculating what percentage of total companies are Certified Partners. Of all companies with over 2 million euros in sales, 43 percent are Certified Partners.

**Illustration 26: Breakdown of Sales Proportions**



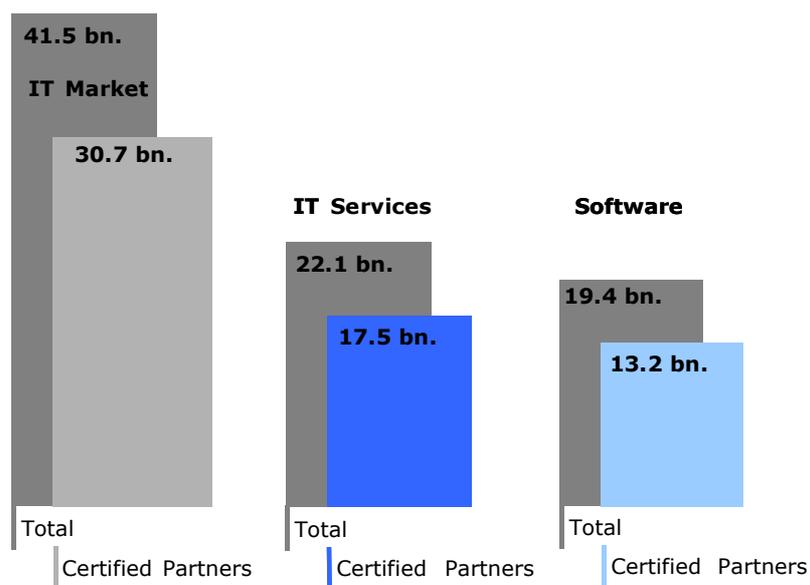
Source: Authors' calculations based on a company profiling survey.

A two-tiered method, as shown in Illustration 26, was followed in order to calculate what proportion of sales in the software and IT-services market Certified Partners contributed. First, the data on the Certified Partners were analyzed. As mentioned above, only those 1,750 companies were included whose sales data were collected in the profiling survey. This added up to 30.7 billion euros in aggregate sales generated by the Certified Partners with software and IT services. Next, these sales were broken down into IT services and software, based on the information provided in the profiling survey. However, the data had to be comparable with the statistics on services. So the breakdown into IT services and software was adjusted

to correspond to the methodology underlying the statistics on services.<sup>35</sup> Also, the data on sales from IT services gathered in the profiling survey go into even more detail, with additional subgroups (e.g., consulting, helpdesk, training, etc.). These detailed data are used in allocating employee figures as well. However, the matching sales figures are not listed separately. Using the aforementioned techniques revealed that the Certified Partners generated a total of 17.5 billion euros in sales with IT services. Sales with software, on the other hand, stood at 13.2 billion euros. Software sales encompass all product sales generated by the Certified Partners, including their own software development (custom and packaged software).

Illustration 27 shows the aggregate sales generated by Certified Partners, as calculated using the above methods, and the overall market data from the statistics on services.

**Illustration 27: Sales of Certified Partners in Relation to Overall Market**



Source: Authors' calculations based on a company profiling survey.

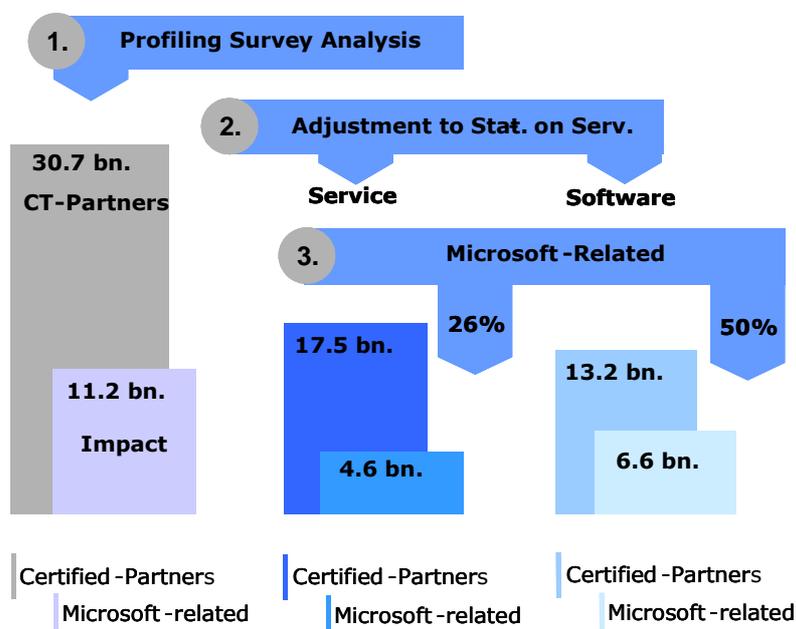
The Certified Partners account for 74 percent of all sales of IT services and software. In the IT-services market, the Certified Partners have a market share of 79.2 percent, whereas in the software market, they generate 68 percent of aggregate sales.

<sup>35</sup> This had an impact on the allocation of sales from IT services and software, among other things.

### 4.3 Impact on Partners' Sales

The next step taken in calculating economic impact was to determine how much of IT-services sales and software sales were induced by Microsoft. Illustration 28 describes the approach taken to derive the amount of sales induced by Microsoft. According to the data provided by the company profiling survey, the German partner companies in the entire Certified Partner program directly attribute 26 percent of their sales from services to their partnership with Microsoft and to their IT service offering for Microsoft products. Or, in euro terms, the companies generate 4.6 billion euros in sales from Microsoft-related IT services.

**Illustration 28: Calculation of Microsoft-Induced Sales**

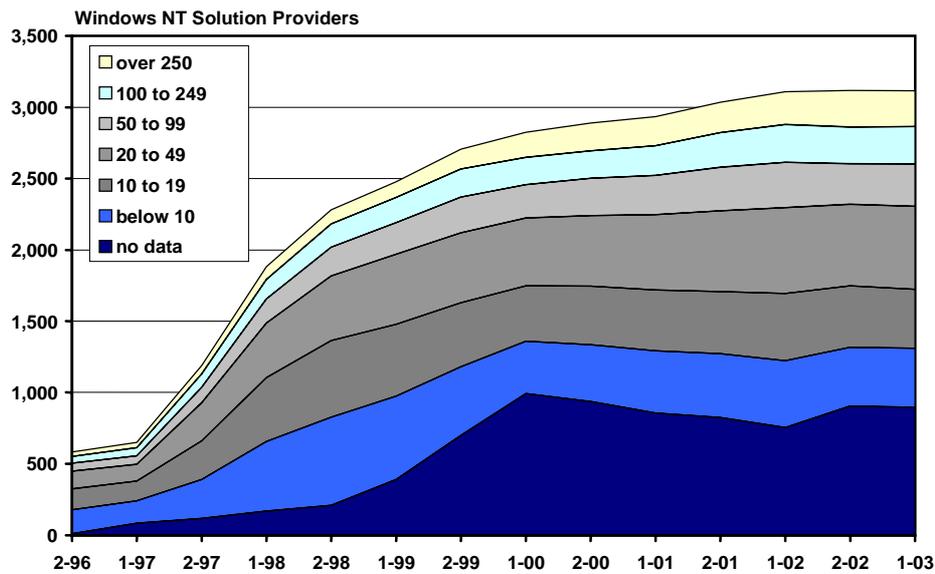


Source: Authors' calculations based on a company profiling survey.

Since the profiling survey does not contain any equivalent data on software sales, secondary data were used. One good place to start is an evaluation of software companies that offer products for a Windows platform, or who have experience in this area. Illustration 29, drawn up by the market-research institute Nomina, shows Windows NT solution providers over time. All told, more than 3,000 providers with Windows NT skills were found. The different shades in the illustration reflect the number of employees the providers have. These providers are only Windows NT solution providers; most of them are probably solution providers for other Windows platforms as well. All told, around half of all providers have products for a Windows platform or have experience with these platforms.

There are also data on Microsoft-related software sales for 164 specially surveyed Certified Partners in which the partners provide separate information on product-development sales for Windows platforms. The partners stated that they generate 50 to 60 percent of their sales from developing software for a Microsoft platform.<sup>36</sup>

**Illustration 29: Windows NT Solution Providers Over Time**



Source: NOMINA (no year given).

From these data it follows that, on average, 50 percent of aggregate development sales can be ascribed to the development of products for Microsoft platforms within the partner program. However, this value is a cautious assessment of a possible minimum. In euro terms, this means 6.6 billion euros in sales are generated from Microsoft-related development. Thus, 11.2 billion euros of the partner companies' overall sales stem directly from their partnership with Microsoft.

If Microsoft's sales in Germany are compared to Microsoft-related sales, this results in a sales multiplier of 1:7.5. In other words, one euro of sales at Microsoft Deutschland GmbH will induce 7.5 euros of Microsoft-related sales at its Certified Partners.<sup>37</sup>

<sup>36</sup> Another starting point for determining what proportions of software sales are generated with Microsoft-related developments is to conduct a weighted assessment of market shares in the desktop and server market.

<sup>37</sup> Since Microsoft sales figures are not published by country, the sales multiplier was calculated based on the information given in the LÜNENDONK list of the top 25 packaged-software companies in Germany.

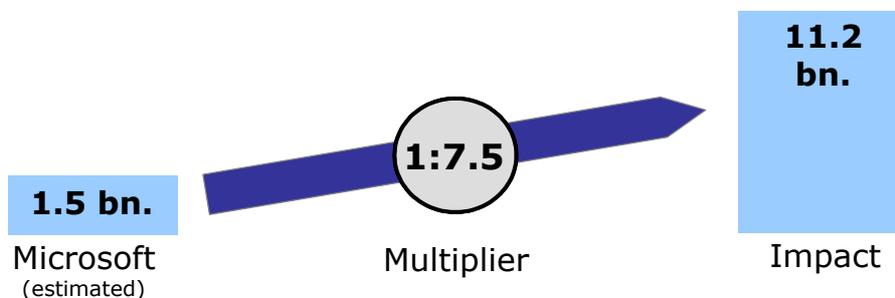
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**Illustration 30: Ratio of Microsoft's Sales to Microsoft-Related Sales Generated by Partner Companies**

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### Sales Multiplier

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Source: Microsoft sales figures provided in LÜNENDONK (2003).

These economic impact calculations refer solely to the Certified Partner program. As far as the Microsoft for Partners program is concerned, the data reveal that the average sales volume of a Microsoft for Partners company is roughly 30 percent of that of a Certified Partner. Provided that a given partner's Microsoft-related sales remain proportionate to the aggregate sales of that partner, it can be assumed that the Microsoft-related sales of all Microsoft for Partners companies amount to around one third of the respective sales volume generated by Certified Partners. That means that the entire economic impact, including that of the "Microsoft for Partners" program, is estimated to be roughly 30 percent higher than the impact determined for the Certified Partners alone.

## 4.4 Impact on Employment

The employment impact is calculated using data provided in the statistics on services. The information from the company profiling survey is not detailed enough to apply the sales figures to the employment figures. Illustration 31 shows this process and the results of the calculation. The employment impact is derived from the calculated sales impact and the data in the statistics on sales concerning sales per employee. The results are rounded to the nearest thousand.<sup>38</sup>

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The market-research institute IDC has come up with a similar figure for Microsoft's total sales. Its analysts calculate that profits from hardware, software and IT services based on Microsoft products stood at 200 billion US dollars in 2001. That means that each dollar in sales for Microsoft generates 8 dollars in sales for other companies providing hardware, software or services. Cf. MICROSOFT (2003), p. 13.

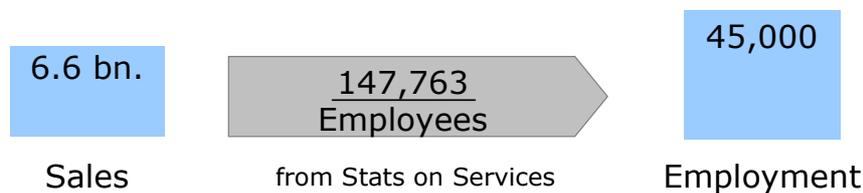
<sup>38</sup> The exact level of employment for IT services was calculated to be 31,454. For software development, employment stood at 44,666.

**Illustration 31: Calculation of the Employment Impact (Statistics on Services)**

**Services Market**



**Software Market**

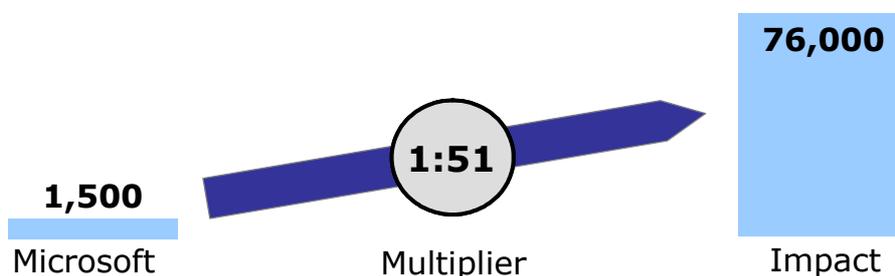


Source: GERMAN FEDERAL STATISTICAL OFFICE (2002a), supplemented by sector data and the authors' own calculations based on a company profiling survey (rounded to nearest thousand).

Certified Partners generate their Microsoft-induced services sales with 31,000 employees. When it comes to developing products for a Microsoft platform, the partner companies employ an additional 45,000 people. All told, this adds up to 76,000 Microsoft-related jobs at Certified Partners in Germany.

**Illustration 32: Ratio of Microsoft's Payrolls to Microsoft-Induced Payrolls at Partner Companies**

**Employment Impact**



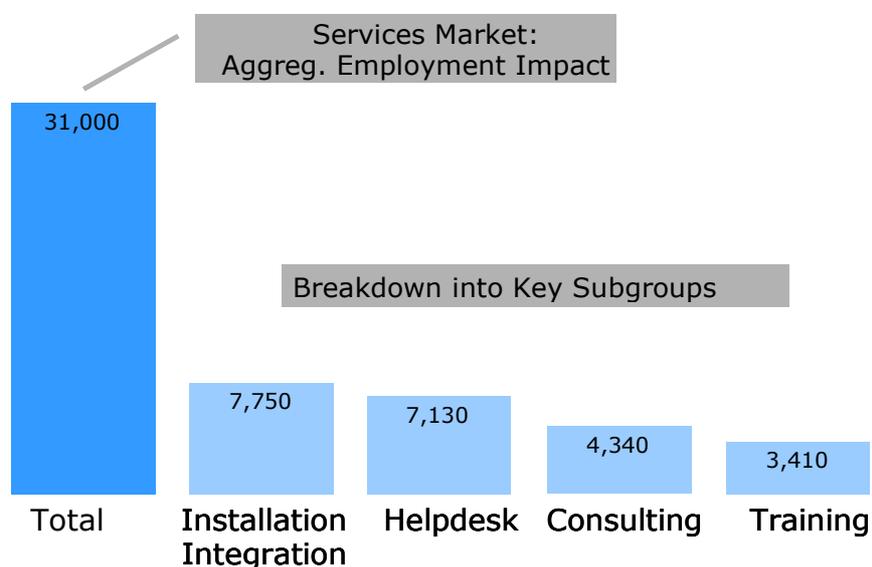
Source: Authors' calculations.

If the 76,000 Microsoft-induced jobs are compared to the 1,500 people (as of April 2003) directly employed by Microsoft Deutschland GmbH, it becomes clear that, for each job at Microsoft, there are 51 Microsoft-related jobs in the IT-services and software market (Illustration 32). If Microsoft, and not the partner companies, were

to provide these products and services, payrolls at Microsoft Deutschland GmbH would increase by these 76,000 jobs.

By consulting the companies' information on how much in sales is generated per service, we can break the aggregate employment impact down even further into service sub-areas. Illustration 33 shows the aggregate employment impact on the IT-services market and employment levels in key sub-groups. For example, 7,750 of the people employed in installation / integration and 3,410 of those employed in training are directly Microsoft-induced.<sup>39</sup>

**Illustration 33: Distribution of Aggregate Employment Impact Among Key Subgroups**



Source: Authors' calculations. We have offered only a selection of subgroups, which is why they do not add up to the aggregate employment impact.

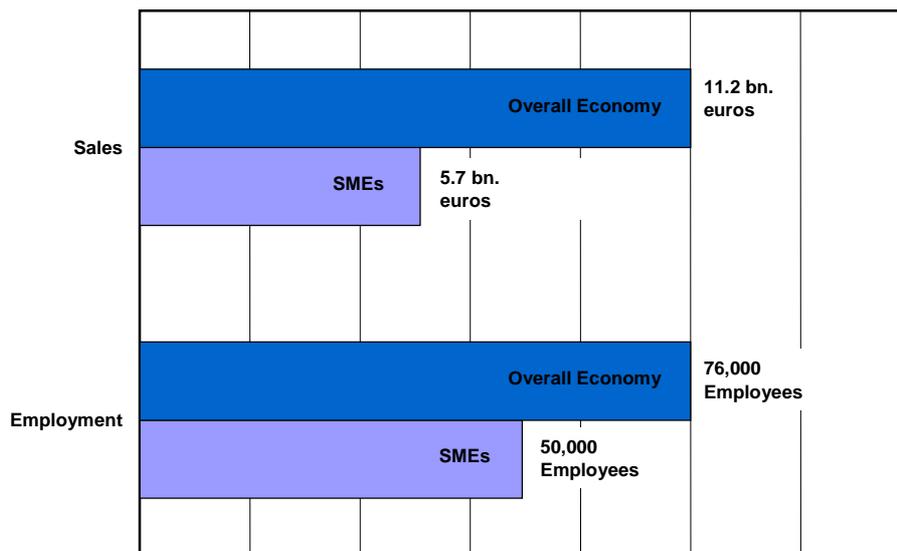
## 4.5 Impact for IT SME's

The Microsoft partner program plays a key role in the existence of IT SME's. All 20,000 IT companies in the "Microsoft for Partners" program are either microbusinesses or SME's. Of the Certified Partners, 94 percent are SME's: they either generate less than 50 million euros in sales or employ fewer than 500 people. After adding the Microsoft for Partners companies, it is seen that the percentage of SME's in the partner program is very similar to that in the overall market. Therefore, the

<sup>39</sup> These values should be viewed as points of reference; there is often a very fuzzy line separating different services areas. For example, consulting services may also be listed as installation / integration. In addition, the areas evince varying levels of employment intensity.

Microsoft partner program broadly covers the SME's in the IT sector and reflects the structure of the German IT market in its different program levels. Furthermore, the membership of partner companies in the sales categories corresponds to the distribution of companies in the overall market.

**Illustration 34: SME Portion of Economic Impact**



Source: Authors' calculations.

Illustration 34 shows the degree to which SME's benefit from the sales and employment impact. To make this comparison, structural data in the service statistics concerning the SME's' sales and employment levels were applied to the results of the economic-impact calculations. Since the distribution of partner companies among sales categories corresponds to the overall market structure, the structural data from the services statistics can be used as the basis of the calculations.

The structural data in the statistics on services indicate that SME's account for 50.6 percent, or 5.7 billion euros, of aggregate Microsoft-induced sales. The employment proportion for SME's is even higher because of the greater employment intensity.<sup>40</sup> Of the 76,000 Microsoft-induced jobs, some 50,000, or 65.9 percent, were induced at SME's. This clearly shows the profound impact of the partner program on sales and employment among SME's. Indeed, most of the jobs induced by the Microsoft partner model are at SME's. For companies participating in the Certi-

<sup>40</sup> See Illustration 18 on page 32 for more on structural data on SME's.

fied Partner program, participation directly affects sales and thus helps IT SME's to be successful: companies cooperating with Microsoft as a Certified Partner have a higher sales volume than the average company in the IT-services and software market.

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