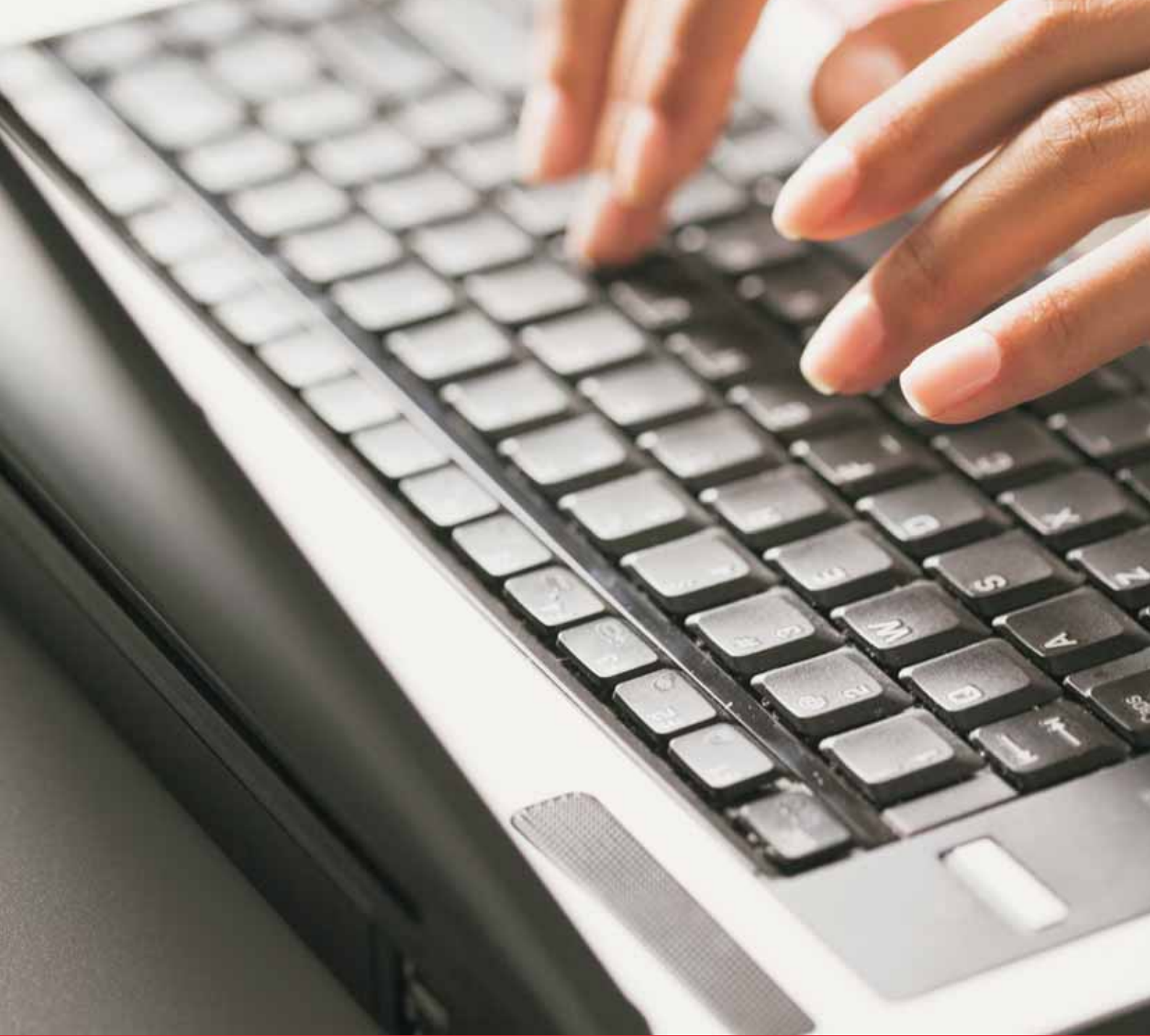


# INDEX

*IT Source of Turkey*



İNDEKS BİLGİSAYAR SİSTEMLERİ MÜHENDİSLİK SANAYİ VE TİCARET A.Ş. ANNUAL REPORT 2009

## 1. SECTOR OF OPERATION

# 1. Sector of Operation

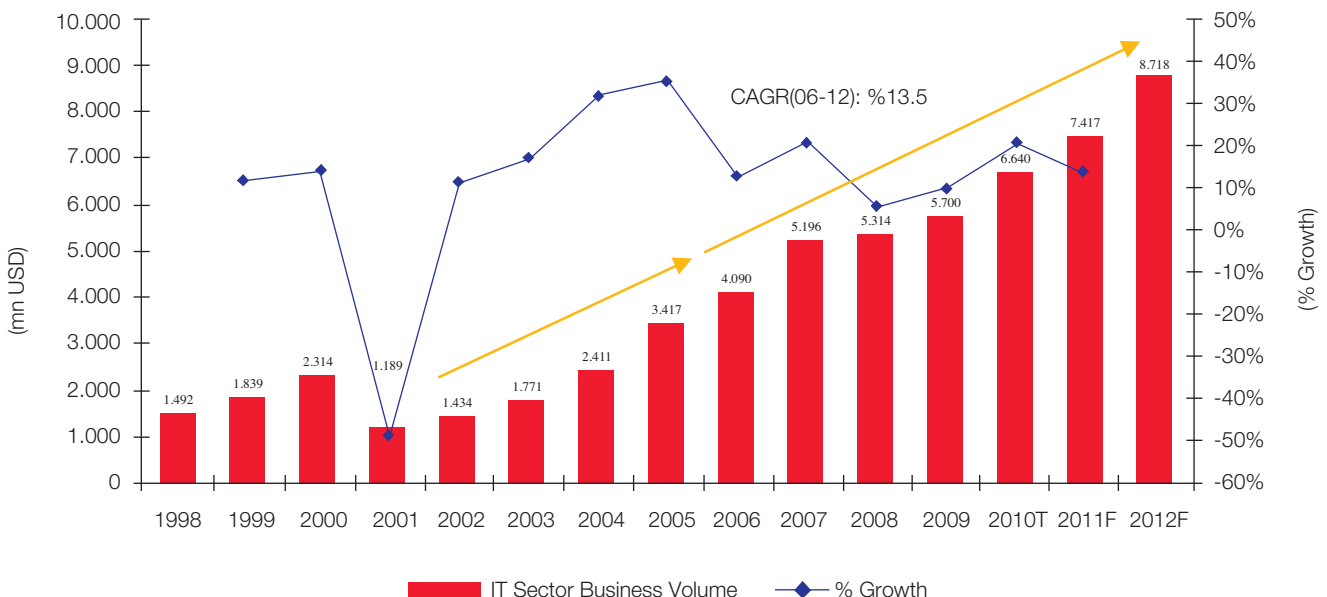
## 1.1 IT Sector

### 1.1.1 Turkish IT Sector

The usage of computers in Turkey started in the end of the 1980's. Although there was a very rapid development in the sector between the years of 1990 and 1995, usage of computers were limited to mostly financial sector, governmental units, big businesses and universities. In the second half of the 1990's, the increase in the usage of computers made the IT sector one of the most rapidly growing sectors in Turkey. According to the data issued by International Data Corporation ("IDC"), the Turkish Information and Communication Technologies ("IT") sector achieved a compound annual growth rate ("CAGR") of 20% between 1997 and 2000. In 2000, the Turkish IT sector has reached its greatest business volume thus far with 2.3 billion USD, whereas that figure reduced to 1.2 billion USD with 49% recession in 2001 because of the economical crisis that was encountered in the end of 2000 and the postponement of the demand of IT investments by public and private sectors. The figures achieved in 2000 were again caught only in 2004, with a business volume of 2.4 million USD. In other words, it took 4 years to eliminate the effects of the crises. However, one should also consider that one of the causes of the shrinkage of the business volume was the continuously price reduction of products, which is the structural feature of the IT Industry.

As a consequence of the realization of the postponed IT investments especially in the private sector in parallel with the improvement in the macroeconomic indicators after 2001, the IT sector continued its growth with a compound annual growth rate ("CAGR") of 27.9% between 2001 and 2007, which is higher than the growth rates in the period before the crisis. Particularly the increasing usage of internet in the recent years has made a great contribution to this development. With the contribution of the increasing interest and the continuing investments in the market for notebooks, Turkish IT Sector reached the value of 5.2 billion USD in 2007. However, in spite of the negative pressure of the global economic shrinkage on the consumption tendency and the appreciation of USD against TRY, contrary to the previous crisis periods, the Turkish IT Sector did not shrink, but has grown by 2%, reaching 5.3 billion USD. In 2009 the Turkish IT sector has grown by 7.2% comparing to the previous year, reaching 5.7 billion USD although tax stimulus packages of the government supported the sector only for 6 months. In spite of the effects of the crisis, the compound annual growth rate of the Turkish IT Market realized as 21.6% in the period between 2001 and 2009.

Turkish IT Market Business Volume (Mio \$)



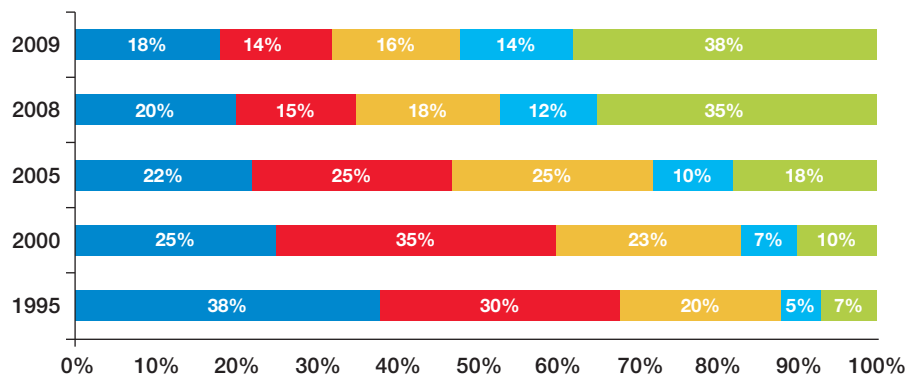
Source: IDC 2010

According to the 2010 Turkey IT Expenditures Research conducted by IDC, the Turkish IT market is expected to have a 13.5% compound annual growth rate (CAGR) in the period between 2006 and 2012, reaching 8.7 billion USD in 2012. IT investment demands deferred in the 2001 crisis period have been started to be realized with the appearance of the increasing stable outlook of the economy and these investment expenditures have been one of the most powerful dynamics of the market in the first 5 years following 2001. New investments that increased after merger and acquisition operations in all sectors, beginning in the finance and telecommunication sectors and spread to other sectors from 2005 on, technology replacement investments, increased IT investment made by the government as part of e-government projects, increase in the internet usage rates and finally, in the number of the users who follow up the rapidly developing technology became the driving forces of the market between 2005 and 2008. Although the first quarter of 2008 started very favourably, the sector started to lose its strength due to the suit brought to close AKP, a slowdown was experienced in the third quarter when not so many negative results were observed. However, with the last quarter, the sector was affected by the global financial crisis that started at the beginning of October, and thus, the quarter was closed with a double-digit shrinkage. 2009 was experienced as a year when the wounds of the crisis were bandaged; the effects of the crisis in the first quarter diminished with the effect of the VAT cut applied for 6 months, including the second and third quarters, and positive growth was recorded in the fourth quarter. In 2009, hardware segments that represents 74% of the sector shrunk by 9.8%, service 1.6% and software by 0.8%.

Turkey has been one of the major developing countries due to the improving general economic conditions, increased per capita income and steps taken for globalization. In addition to highly qualified and cost effective human resources, majority of the young population is contributing to the attractiveness of our country. When the pressure of the diminished consumption tendency on the IT Market due to the crisis in 2008-2009 decreased, it is estimated that the IT sector will grow by 16.5 comparing to the previous year and with such growth, the sector will reach 6.6 billion USD by the end of 2010.

On the other hand, if the share of the end-users in the market is monitored in the period between 1995 and 2009, it would be clearly seen that the market structure has changed considerably. Accordingly, the IT market comprised governmental and public bodies (38%), finance sector companies (30%), private sector companies (20%), individual users (7%) and SMEs (5%) in 1995. However, the shares of government and public sector companies, finance sector companies and private sector companies in the market decreased while those of individual users and SMEs increased in the period between 1995 and 2009. As a result, as of 2009, the Turkish IT market comprises 38% individual users, 18% government and public sector companies, 16% private sector companies, 14% finance sector companies and 14% SMEs.

Changes in the Market Share of End Users



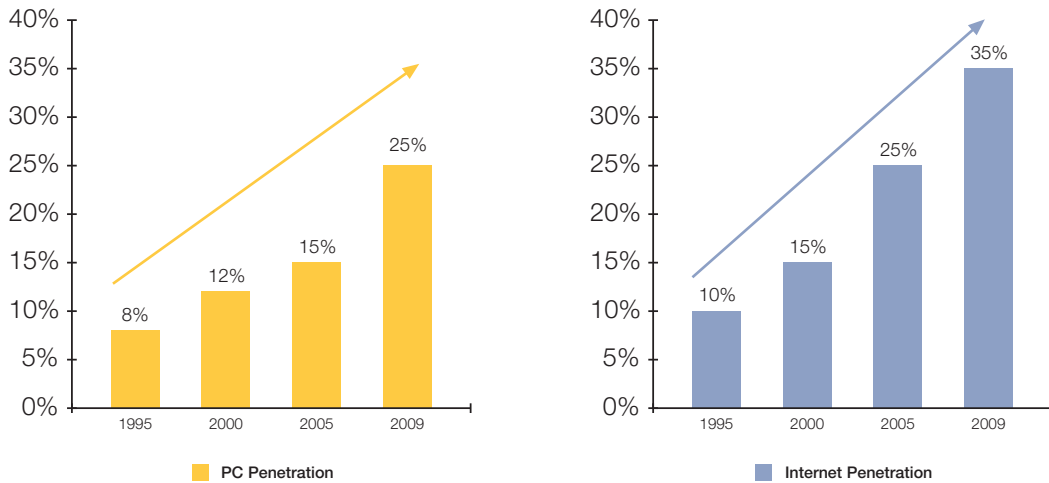
	1995	2000	2005	2008	2009
Public Institutions	38%	25%	22%	20%	18%
Finance Sector	30%	35%	25%	15%	14%
Private Sector (Corporate)	20%	23%	25%	18%	16%
SME	5%	7%	10%	12%	14%
Individual Users	7%	10%	18%	35%	38%

Source: IDC 2010

According to the 2009 report of ITU (International Telecommunication Union) on the basis of 2007 data, the rate of PC ownership per household is 70% in the USA, 75% in England, 79% in Germany, 40% in Greece, 53% in Italy, 21% in Brazil and 29% in Turkey. The rate of internet users is 62% in the USA, 67% in England, 71% in Germany, 25% in Greece, 43% in Italy, 15% in Brazil and 19% in Turkey.

It is estimated that the rate of the number of PC in operating status to the total population has increased from 8% to 25% in the period between 1995 and end of 2009, and that the rate of the internet users to the total population has increased from 10% to 35% in the same period. This indicates that PC ownership and internet usage rates increased over 3 times in the last 15 years. PC ownership and internet usage rates have increased by 67% and 40%, respectively in the last 5 years. Comparing to the country data published by ITU above, it is clear that Turkey is far below the developed countries with respect to the PC ownership and internet users rate and that there is a long distance to be covered in this field. The PC and internet penetration in Turkey between 1995 and 2009 has developed as shown in the following graphics.

Trends in Internet & PC Penetrations



Source: Indeks Computer

According to the results of "Households IT Usage Research" published by the Turkish Statistical Institute (TÜİK) in April 2009, the PC and internet usage rates of individuals are 40.1% and 38.1%, respectively. The survey indicates that computer and internet usage rates of people between 16 and 74 ages are 50.5% and 48.6% for men and 30.0% and 28.0% for women, respectively.

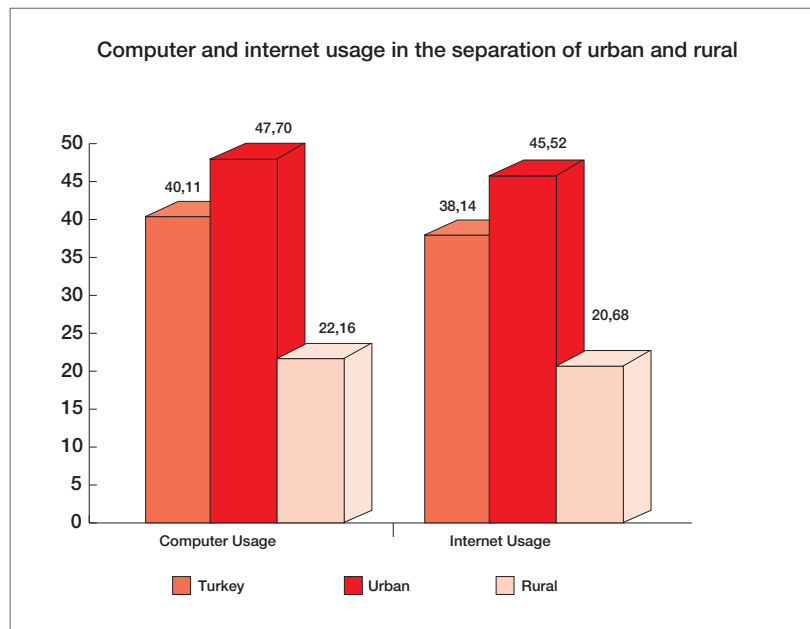
The age group in which the rate of computer and internet usage is highest is 16-24. These rates are higher in men than women in all age groups. By educational level, the population who use the computer and internet most are graduates of first degree and higher education levels. 11.8% of people place order for or purchase goods or service for personal use via internet.

According to the report results, PC and internet usage rates have increased by 75% and 117%, respectively in the period between 2005 and 2009. Another interesting feature of the report is that although the computer and internet usage rate of the rural population is lower than the urban population, the computer and internet usage rates increased by 90% and 153%, respectively, in the rural areas. Although the increasing rate is pleasing, it is clear that the computer and internet usage rate in the urban areas is over 2 times higher than the rural areas.

## Comparison of computer and internet usage on area based (rural &amp; urban) (%) (2005-2009)

		Computer usage rate		Change	Computer usage rate		Change
		2005	2009	%	2005	2009	%
Computer and internet users	Turkey	22,94	40,11	75%	17,55	38,14	117%
	Urban	29,58	47,70	61%	23,07	45,52	97%
	Rural	11,65	22,16	90%	8,19	20,68	153%
In the last three months	Turkey	17,65	35,60	102%	13,93	33,97	144%
	Urban	23,16	42,60	84%	18,57	40,87	120%
	Rural	8,28	19,02	130%	6,05	17,64	192%
Between three months and one year	Turkey	1,88	2,29	22%	1,52	2,43	59%
	Urban	2,44	2,77	14%	1,96	2,78	42%
	Rural	0,92	1,14	24%	0,78	1,59	103%
Over one year	Turkey	3,42	2,23	-35%	2,10	1,75	-17%
	Urban	3,98	2,33	-42%	2,54	1,87	-26%
	Rural	2,45	2,00	-18%	1,36	1,46	7%
Never used	Turkey	77,06	59,89	-22%	82,45	61,86	-25%
	Urban	70,41	52,30	-26%	76,94	54,48	-29%
	Rural	88,35	77,84	-12%	91,81	79,32	-14%

Source : TUIK 2005, 2009



Source: TUIK 2009

Public investment in IT sector increasingly grows year by year with the contribution of the “e-Transformation Turkey Project” in accordance with the Information Society Strategy adopted by the Prime Ministry. Accordingly, the share of IT investments out of the total public investments increased to 159 million USD in 2002, 389 million USD in 2005, 555 million USD in 2007 and 590 million USD in 2009.

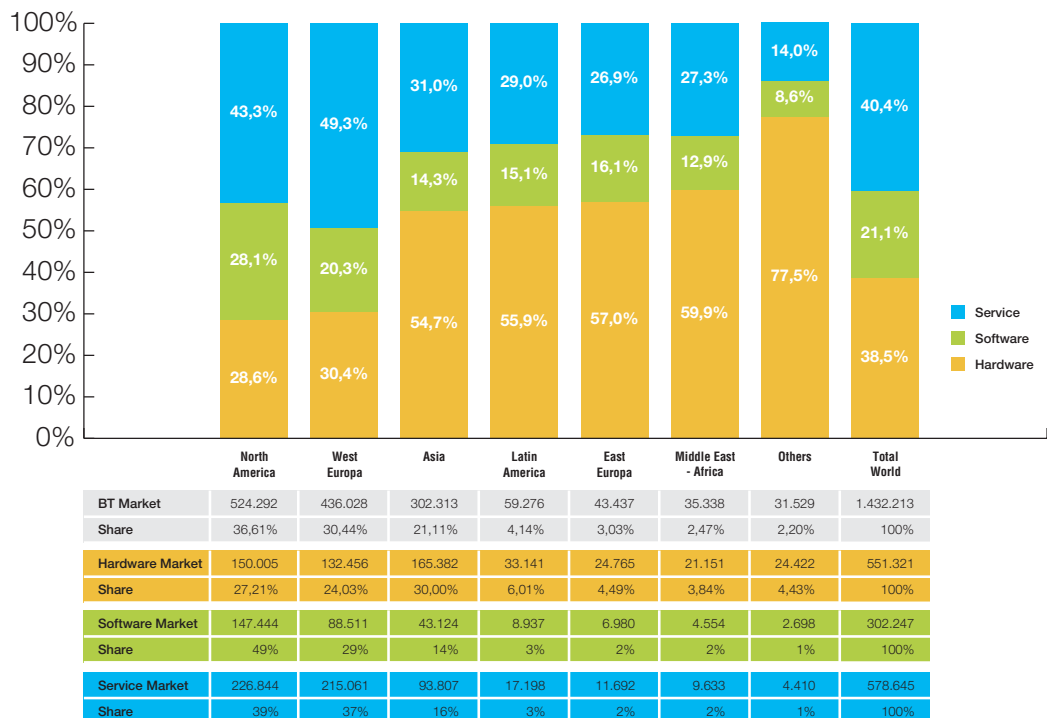
Year	Number of Project	Amount of Total Payment (Current Prices)		Amount of Total Payment (2009 Prices)	
		(000) TRL	(000) \$ US	(000) TRL	(000) \$ US
2002	203	286.013	158.808	502.511	313.620
2003	204	369.321	208.656	563.900	337.409
2004	211	451.181	281.285	615.726	400.357
2005	200	626.253	388.494	848.747	566.747
2006	203	791.065	557.716	943.036	728.312
2007	237	816.753	555.463	966.681	695.968
2008	271	814.890	591.529	877.940	637.668
2009	244	847.663	590.418	847.663	590.418

Source: State Planning Agency 2009, Public Information & Communication Technology Investments

### 1.1.2. IT Market in the World and Comparison with Turkey

According to the 2009 report of IDC published in 2010, the total business volume of the Global IT Market is 1.4 trillion USD. 88.2% of the total market volume comprises the Northern America, Western Europe and Asian countries. The shares of the Northern America, Western Europe and Asian region are 36.6%, 30.4% and 21.1%, respectively. The share of the Middle East-Africa region, including Turkey, in the total volume is 2.5%. Regarding the sub-segments of the IT market, the share of the Northern America, Western Europe and Asian region in the total volume is 81.2% in hardware, 92% in software and 93% in IT services.

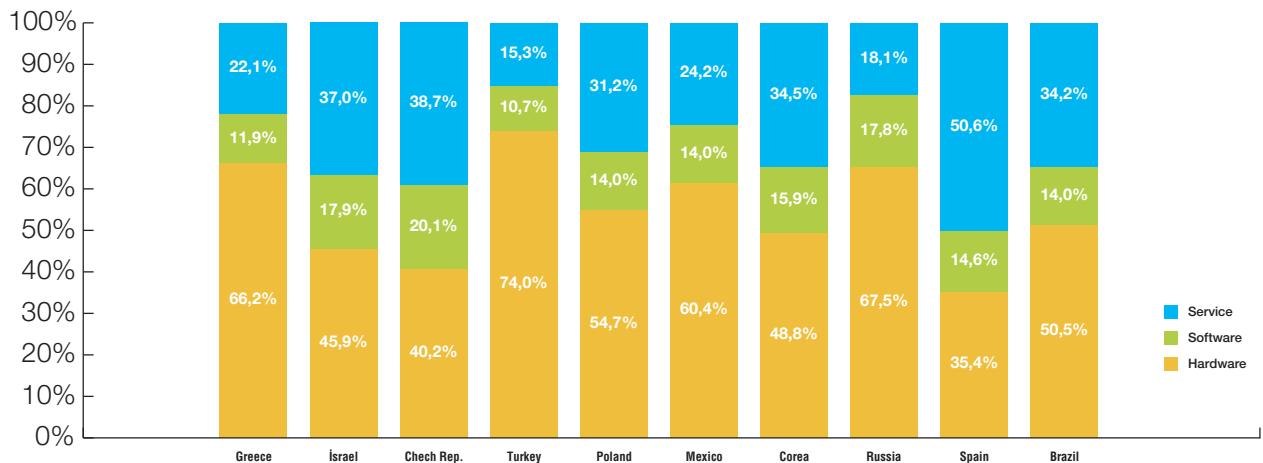
Regional Based IT Market Analysis in the World (mio USS)



Source: IDC 2010

According to the 2010 results of the IDC report, the volume of the Turkish IT market is higher than Greece, Israel and Czech Republic, but only 1/5 of Spain and Brazil. Such difference is higher in the per capita spending on IT. The shares of hardware, software and IT services are 74%, 11% and 15%, respectively, in Turkey and 35%, 15% and 51%, respectively, in Spain. Share of hardware in the total is less in the developed countries than Turkey.

Country Based IT Market Analysis in the World (mio USS)



BT Market	3.244	5.207	5.345	5.699	10.335	13.684	16.403	18.082	28.948	30.902
Share	0,23%	0,36%	0,37%	0,40%	0,72%	0,96%	1,15%	1,26%	2,02%	2,16%
Hardware Market	2.146	2.392	2.147	4.218	5.651	8.264	8.002	12.201	10.240	15.615
Share	0,39%	0,43%	0,39%	0,77%	1,03%	1,50%	1,45%	2,21%	1,86%	2,83%
Software Market	386	933	1.073	609	1.449	1.918	2.605	3.225	4.236	4.337
Share	0,13%	0,31%	0,35%	0,20%	0,48%	0,63%	0,88%	1,07%	1,40%	1,44%
Service Market	716	1.927	2.067	872	3.223	3.314	5.655	3.281	14.644	10.569
Share	0,12%	0,33%	0,36%	0,15%	0,56%	0,57%	0,98%	0,57%	2,53%	1,83%

Source: IDC 2010

According to the "Readiness Structure of Countries for being Information Society Index" published by the World Economic Forum in 2009, Turkey ranked 52nd among 104 countries evaluated in the 2004-2005 report, 55th among 127 countries in the 2007-2008 report and 61st among 134 countries in the 2008-2009 report. In this ranking, many criteria such as the situation of the countries in the presentation and development of the services, their capability to produce technology, human capital and legal arrangements as well as technical infrastructure are taken into account.



**Networked Readiness of Countries**

2007-2008			2008-2009		
No	Country	Grade	No	Country	Grade
1	Denmark	5,78	1	Denmark	5,85
2	Sweden	5,72	2	Sweden	5,84
3	Switzerland	5,53	3	USA	5,68
4	USA	5,49	4	Singapore	5,67
5	Singapore	5,49	5	Switzerland	5,58
6	Finland	5,47	6	Finland	5,53
7	Holland	5,44	7	Iceland	5,50
8	Iceland	5,44	8	Norway	5,49
9	South Korea	5,43	9	Holland	5,48
10	Norway	5,38	10	Canada	5,41
...	...		...	...	
55	<b>TURKEY</b>	<b>3,96</b>	61	<b>TURKEY</b>	<b>3,91</b>
<b>Total 127 countries</b>			<b>Total 134 countries</b>		

Resources: World Economic Forum

**Readiness of Turkey Information Society (Networked Readiness)**

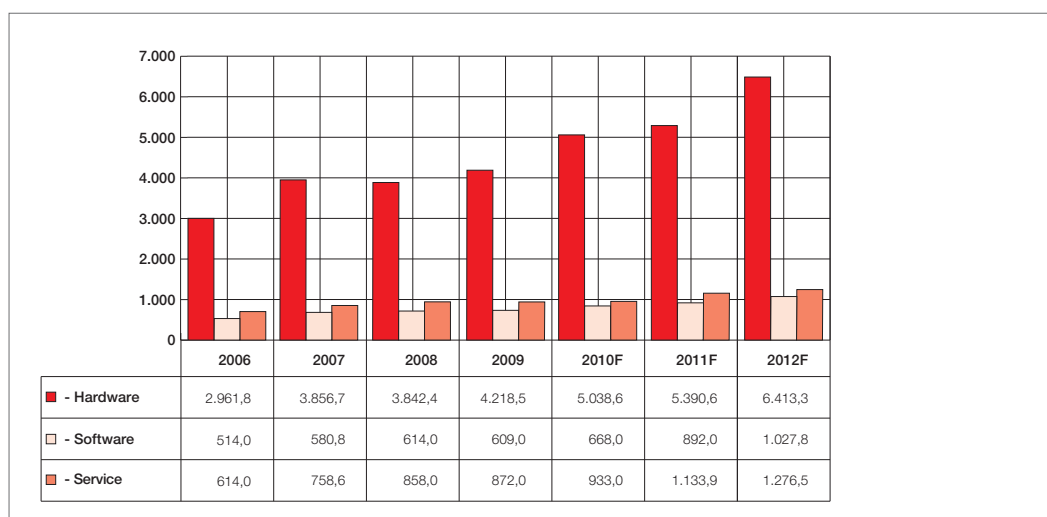
	2003	2004	2005	2006	2007	2008	2009
Number of Countries Evaluated	80	102	104	115	122	127	134
e-Readiness Order - Turkey	50	56	52	48	52	55	61

Resources: World Economic Forum

**1.2 Sub-segments of the IT Sector**

Turkish IT sector is essentially separated into three main groups, namely hardware, software and IT services.

According to the Turkey results published by IDC in 2010, the business volume of the Turkish Information and Communication Technologies (IT) market reached 5.2 billion USD in 2007, 5.3 billion USD in 2008 and 5.7 billion USD in 2009. The same report shows that the share of the "Hardware", "Software" and "IT Services" sub-segments in the total market are 74%, 10.7% and 15.3%, respectively. This indicates that the Turkish IT sector has got a structure where "hardware" is predominant with respect to income created.

**IT Sector Expenditures, 2006-2012 (mio US\$)**

Source: IDC 2010



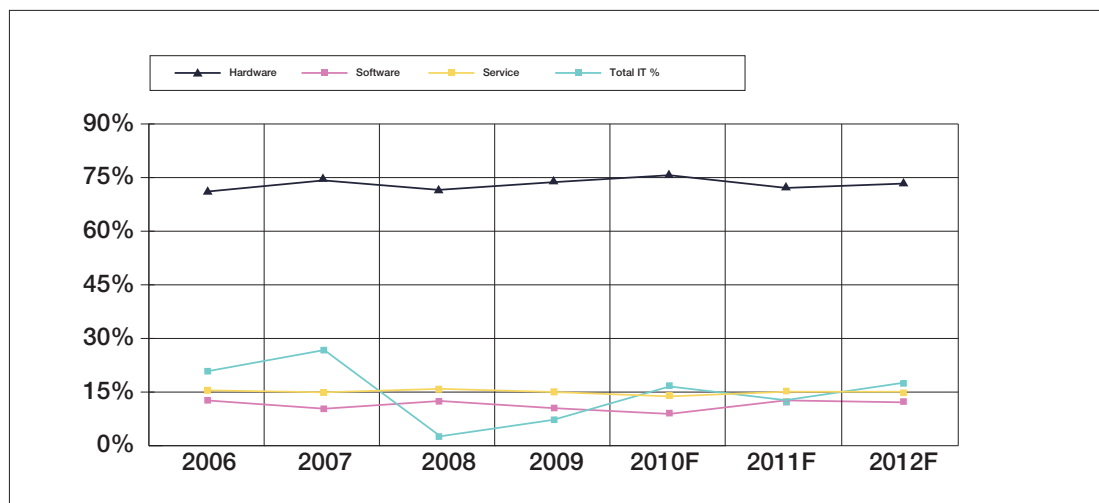
## Turkish IT Sector 2006-2012 (Mio \$)

IT Sector Distribution (\$)	2006	2007	2008	2009	2010 F	2011 F	2012 F
Hardware	2.961,8	3.856,7	3.842,4	4.218,5	5.038,6	5.390,6	6.413,3
Software	514,0	580,8	614,0	609,0	668,0	892,0	1.027,8
Service	614,0	758,6	858,0	872,0	933,0	1.133,9	1.276,5
Total IT	4.089,8	5.196,1	5.314,4	5.699,5	6.639,6	7.416,5	8.717,7
Growth (%)		27,1%	2,3%	7,2%	16,5%	11,7%	17,5%
Growth on Segments	2006	2007	2008	2009	2010 F	2011 F	2012 F
Hardware		30,2%	-0,4%	9,8%	19,4%	7,0%	19,0%
Software		13,0%	5,7%	-0,8%	9,7%	33,5%	15,2%
Service		23,6%	13,1%	1,6%	7,0%	21,5%	12,6%
IT		27%	2%	7%	16%	12%	18%
Distribution on Segments	2006	2007	2008	2009	2010 F	2011 F	2012 F
Hardware	72,4%	74,2%	72,3%	74,0%	75,9%	72,7%	73,6%
Software	12,6%	11,2%	11,6%	10,7%	10,1%	12,0%	11,8%
Service	15,0%	14,6%	16,1%	15,3%	14,1%	15,3%	14,6%
IT	100%	100%	100%	100%	100%	100%	100%

Source: IDC 2010, (Telecom, Network tools are not included for the calculation)

According to the 2010 Turkey IT Expenditures Survey conducted by IDC, the Turkish IT market is expected to have a 13.5% compound annual growth rate (CAGR) in the period between 2006 and 2012, reaching 8.7 billion USD in 2012. These estimates are based on the anticipated growth rates, investments anticipated to be made by companies rapidly as they were deferred due to the crises of 2001 and 2008, effects of IT expenditures incurred by the public sector for e-transformation projects on IT consumption, increased use of IT in education, anticipated increased rate of the use of internet and mobile technologies and replacement investments to be caused by new technologies.

## Growth Rates in Turkish IT Market Between 2006-2012 (%) on Sub-Group Based



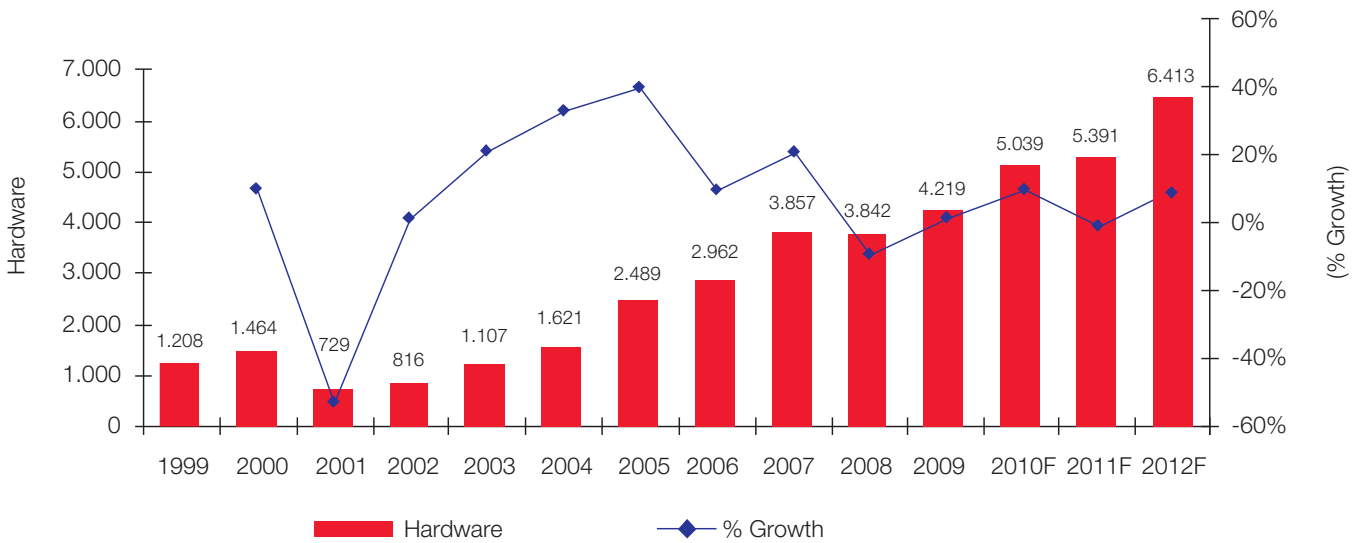
Source: IDC 2010

### 1.2.1 Hardware Market

Hardware market in Turkish IT sector is the sub-segment having the biggest share regarding the sales amounts of 1999 – 2009, with the ratios changing between 57% and 74%. The sales of hardware products were realised as 3.857 million USD in 2007, with an increase of 30.2% comparing to the previous year, but diminished to 3.842 million USD in 2008 with a decrease of 0.4% comparing to the previous year, due to the pressure of the global crisis that started in October 2008 on the consumption tendencies. In 2009 the Turkish Hardware Market has grown by 9.8% comparing to the previous year, reaching 4.219 billion USD with tax stimulus packages of the government supported the sector only for 6 months.

According to the 2010 Turkey IT Expenditures Survey conducted by IDC, the Turkish Hardware Market is expected to have a 13.74% compound annual growth rate (CAGR) in the period between 2006 and 2012, reaching 6.413 billion USD in 2012.

Growth Rates & Targets of Hardware Expenditures in IT Sector, 1999-2012 (Mio USD,%)



Source: IDC 2010

#### 1.2.1.1 PC Market:

The hardware sub-group consisting of Desktop PCs, portable PCs ("Laptop PCs", "Notebooks"), Servers and Peripherals is monitored via the sales data in PC market which represent a very significant portion of the total sales. Accordingly, total sales of the PC market were realized as 2.691.519 in 2008, whereas such total number (both notebook and desktop) rose to 3.210.386 units with an increase of 19.3% in 2009. However, when the sales in the PC market are considered by quantity excluding the server market, it is noticed that portable PCs have gained majority in this market for the first time in 2009. Beginning from the year 2004, supplying portable PCs with high performance, increased mobility possibility with their lighter structure and affordable prices to the consumers has enabled significant increases in their sales, and finally, sales of portable PCs have surpassed those of desktop PCs in 2009. 2004 yılında taşınabilir PC ürünleri satışlarının toplam pazardan (sunucu hariç) aldığı pay %23.8 iken bu oran 2009 yılı sonunda %63'e yükselmiştir. As a result of the development of the mobile technology, the share of the desktop PCs in the total PC market was 76.2% in 2004 and decreased year by year and finally down to 37% in 2009.

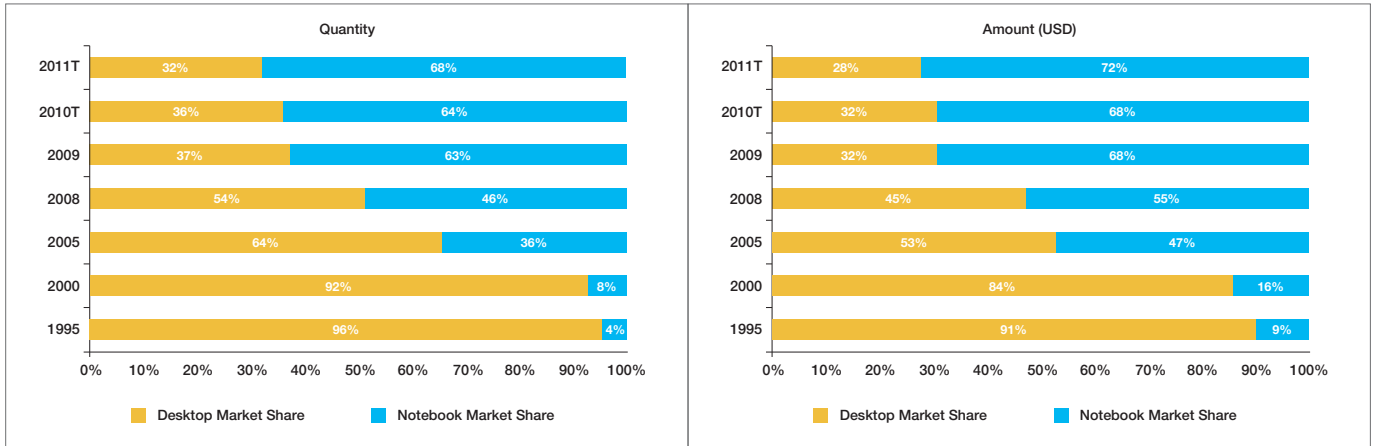
Estimations of Turkish PC Market on Type and Quantity based, 2004 - 2009

Biçim	2004	(%)	2005	(%)	2006	(%)	2007	(%)	2008	(%)	2009	(%)	CAGR(%)
Masaüstü	710.064	76,2	1.027.336	64,3	1.331.144	63,7	1.415.568	54,3	1.455.049	54,1	1.186.862	37,0	10,9%
Dizüstü	221.490	23,8	570.366	35,7	757.597	36,3	1.191.332	45,7	1.236.470	45,9	2.023.524	63,0	55,7%
<b>Toplam</b>	<b>931.554</b>	<b>100,0</b>	<b>1.597.702</b>	<b>100,0</b>	<b>2.088.741</b>	<b>100,0</b>	<b>2.606.900</b>	<b>100,0</b>	<b>2.691.519</b>	<b>100,0</b>	<b>3.210.386</b>	<b>100,0</b>	<b>28,1%</b>

#### Growth

2005	2006	2007	2008	2009
44,68%	29,57%	6,34%	2,79%	-18,43%
157,51%	32,83%	57,25%	3,79%	63,65%
<b>71,50%</b>	<b>30,70%</b>	<b>24,80%</b>	<b>3,25%</b>	<b>19,3%</b>

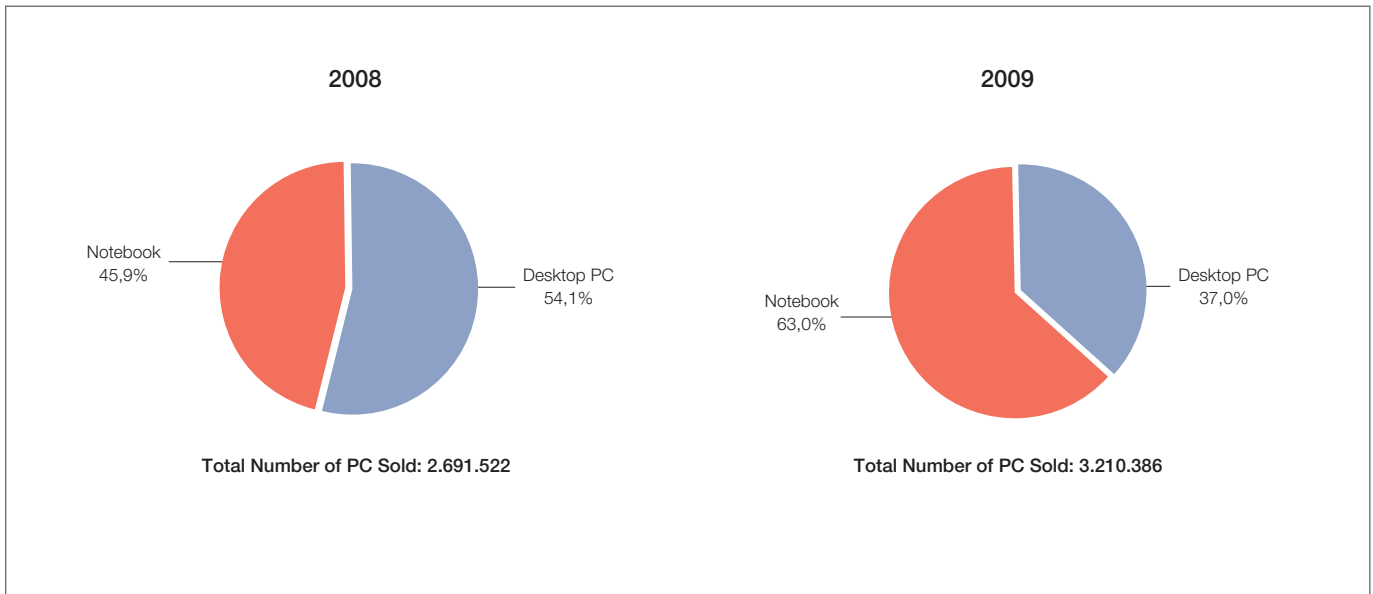
**Trends in Market Shares of Desktops & Notebooks**



Source: IDC 2010

The developments at PC market are closely related with the ongoing projects in public and educational sectors. The stable growth in demand of the consumers is also considered as another significant factor on this issue. The growing retail chains and financial opportunities offered to the consumers by these chains have been the most important driving forces for the PC sales. Besides, noticing the benefits of mobile computing systems by the corporate companies is seen as another important reason for the growth. At this point, one may clearly see from then market sales figures that the demand by the small and large enterprises seeking productivity for portable PCs as an important part of mobile data systems has increased.

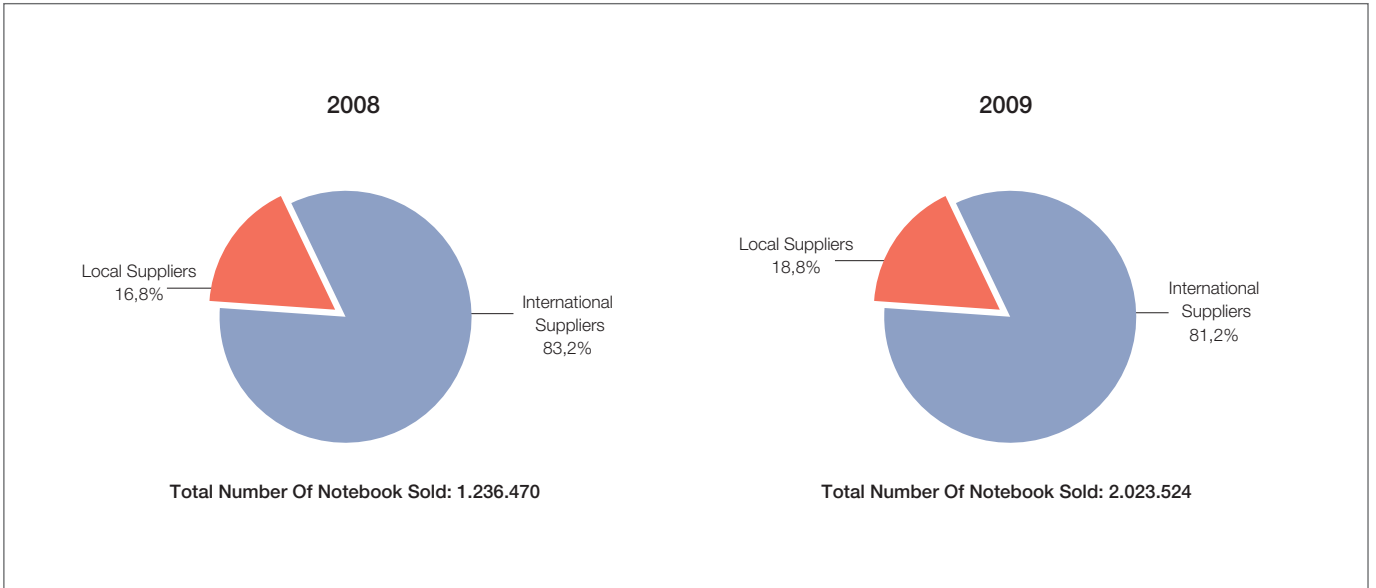
**Turkish IT Market on Main Form Based 2008 - 2009**



Source: IDC 2010

Besides the producers which have international brands, a considerable part of hardware production both inside and outside the country is performed with the main components that are obtained from the global computer parts suppliers by big and small-sized companies. Over time, these factors have transformed the hardware product market and the especially PC market into a low added value structure in which the competition is highly sensitive to the price.

### Suppliers Based Distribution of Turkish Notebook Market, 2008 - 2009



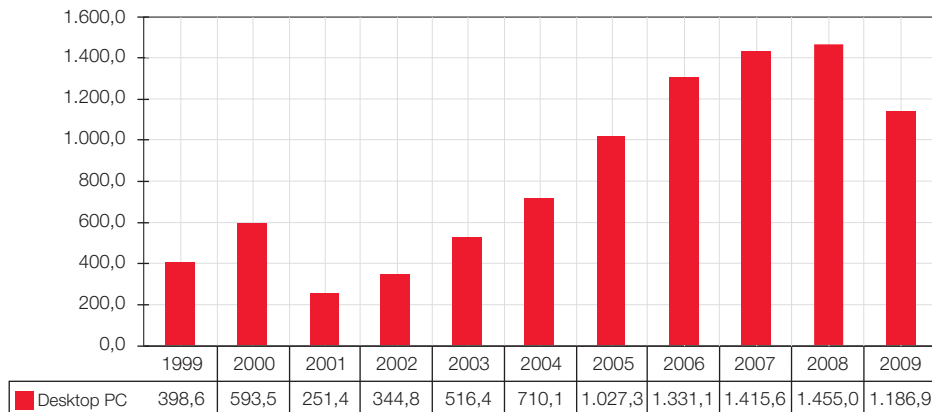
Source: IDC 2010

#### 1.2.1.1.1 Desktop PCs

PC Desktop products have represented the most important product category within the sub-group of hardware in terms of the unit and sale volumes until 2009. Total sales of Desktop PCs decreased from 594 thousand in 2000 to 251 thousand in 2001 due to the 2001 economic crisis. PC sales increased with the rate 41% CAGR between 2002 and 2005, well above the economical development, with the influence of the decrease in the year 2001 and reached 1 million units in 2005. Desktop PC sales rose to 1.33 million units and 1.4 million units with an increase of 30% and 6% in 2006 and 2007, respectively. Such sales again increased by 10-15% in the first three quarters of 2008 and by 2.8% in the last quarter due to the global crises, and closed the year with a sales quantity of 1.46 million units, which was the highest historical level. However, as a consequence of the development of the mobile technology, the share of the desktop PC sales in the total PC market decreased to 37%, and the sales quantity was realized as 1.19 million units with a decrease of 18.4% in 2009.

PC Desktop market exhibits much segmented structure where the domestic producers are dominated. While international producers get a market share of 18-20%, the remaining part of the market is under the control of the big or small sized domestic producers

### Quantity Based Distribution of Desktop Sales (000), 2009



Source: IDC 2010

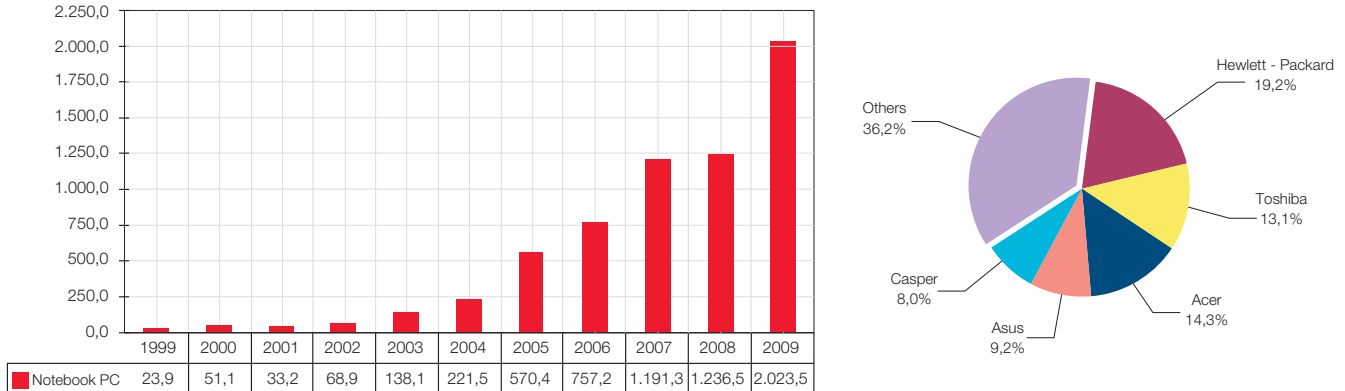
### 1.2.1.1.2 Notebooks

Since 2004, a significant consumption activity has started all over the world in Portable PCs (notebook, netbook) market when the international big producers decreased the prices with increasing competition in this market and the developing technology. As a consequence of affordable price policies of producers and retailers, notebook prices for end users decreased to 400 - 1000 USD on average in Turkey, which eventually made these products affordable for home users and increased the widespread usage of the notebooks in the offices. Accordingly, the share of Portable PCs (except for server) in the total PC sales by quantity has increased from 5% to 23.8% between 1998 and 2004 and then to 45.9% in 2008. Supplying portable PCs with high performance, increased mobility possibility with their lighter structure and affordable prices to the consumers has enabled significant increases in their sales, and finally, sales of portable PCs have reached 63.03%, well above those of desktop PCs in 2009.

Sales of Portable PCs increased from 51 thousand units to 221 thousand units between 2000 and 2004 and then rose to 1.236 thousand units in 2008 and to 2.023 thousand units in 2009, which indicates an increase of 50.5% (CAGR) in the period between 2000 and 2009. According to the 2010 results of the IDC report on Turkish IT Expenditures, the Turkish Portable PC Market is estimated to reach 2.4 million units in 2010 and 3 million units in 2011, and the share of the Portable PC shares in the total PC sales shall increase to 63.7 in 2010 and 67.9% in 2011.

It seems that international brands are more dominant in the Notebook PC market than the Desktop PC market. According to the 2009 data obtained from IDC, the most important leading brands in the Portable PC market, namely Hewlett Packard, Acer, Toshiba and Asus, control 55.8% of the market in terms of quantity. As a consequence of the fact that just like in the desktop products in previous periods, the structure of notebook products tends to be standardised, it is observed that some part of the market shares of international brands are left to the domestic producers. The market share of the domestic producers which was 10% at the end of the year 2003 increased to 16.8% in 2008 and 18.8% in 2009. According to the 2009 results, the shares of Casper and Exper, which are the two big domestic market of the Turkish market, were realized as 8% and 6.1%, respectively.

Desktop PC Sales (000) and Supplier Based Distribution of Sales, 2009



Source: IDC 2010

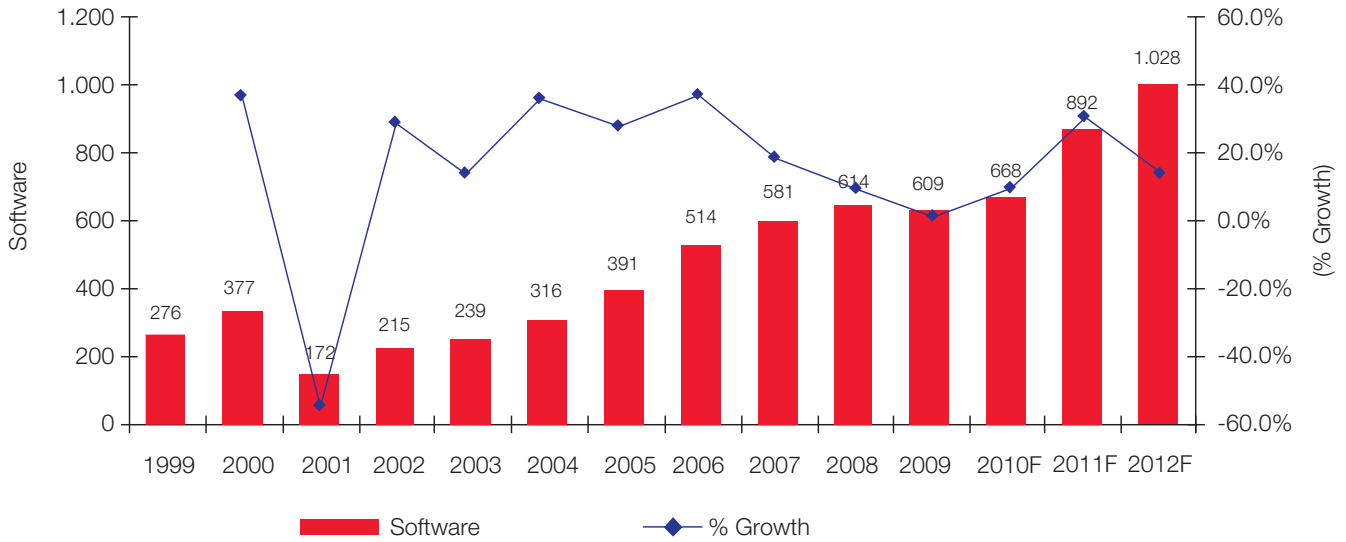
### 1.2.2 Software Market

The size of the software sub-group increased from USD 276 million in 1999 to USD 377.3 million in 2000. However, in the 2001 crisis, just like in hardware sector, software sector decreased to USD 172.3 million with shrinkage of about 54%. The Turkish Software Market increased from 215 million USD to 614 million USD with an increase of 19.1% CAGR between 2002 and 2008. However, due to the pressure of the crises that has deepened in the last quarter of 2008 on the consumption tendencies, the sales of the Turkish Software Market decreased to 609 million USD with minor shrinkage of 1% in 2009, contrary to the dramatic shrinkage of the 2001 crisis.

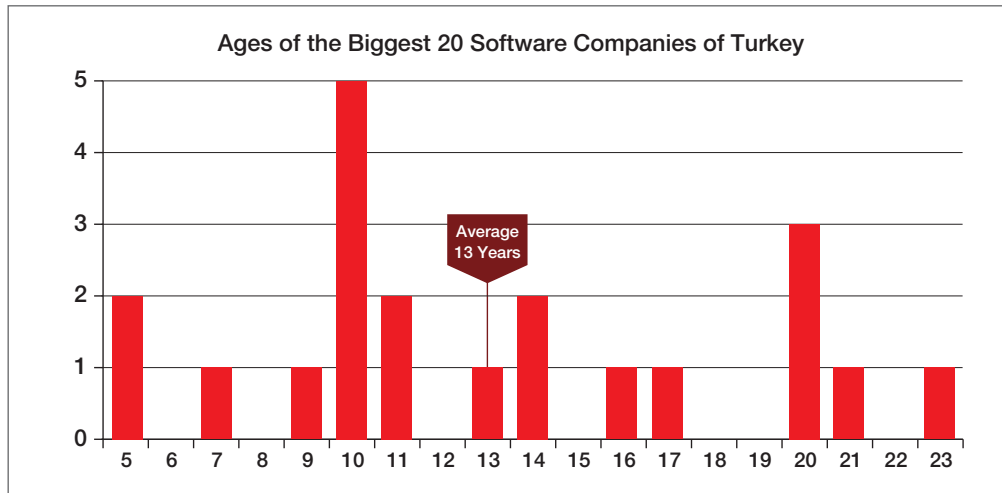
As of the end of 2009, the share of the software sub-group in the entire IT market in terms of the total turnover is at very low levels in comparison with Europe and America with 10.7% share, mainly because of pirated usages. Microsoft Office, being a commonly used program, is the most pirated program. The laws which were enacted by the Turkish Parliament in 1995 for purpose of ensuring the protection of the registration rights decreased the pirated usage rate. According to the estimations of our company, while 70% of the software is illegally used in Turkey, this rate is around 35% in the USA.

Because the operating system software is purchased as incorporated into the computer, its pirated usage is less than other software. The registration right laws had influence on the custom suppliers using pirated products most frequently. Most of the custom suppliers use the licensed operating system software at present.

**IT Sector Software Expenditures Growth Figures and Growth Targets, 1999-2012 (Mio USD,%)**



Source: IDC 2010



Source: State Planning Agency 2007, Information and Communication Technology Specialisation Commission

The average age of the top 20 software companies of Turkey is 13. While the imported products in the software sector have the most important share, there is also an increase in the Turkey-based software. Because the government keeps it compulsory to use the domestic software in some of the projects, it is expected that shares of the Turkey-origin software companies will continue to increase. A great part of the software produced in Turkey is used by the banking, accounting, human resources and textile sectors for production.

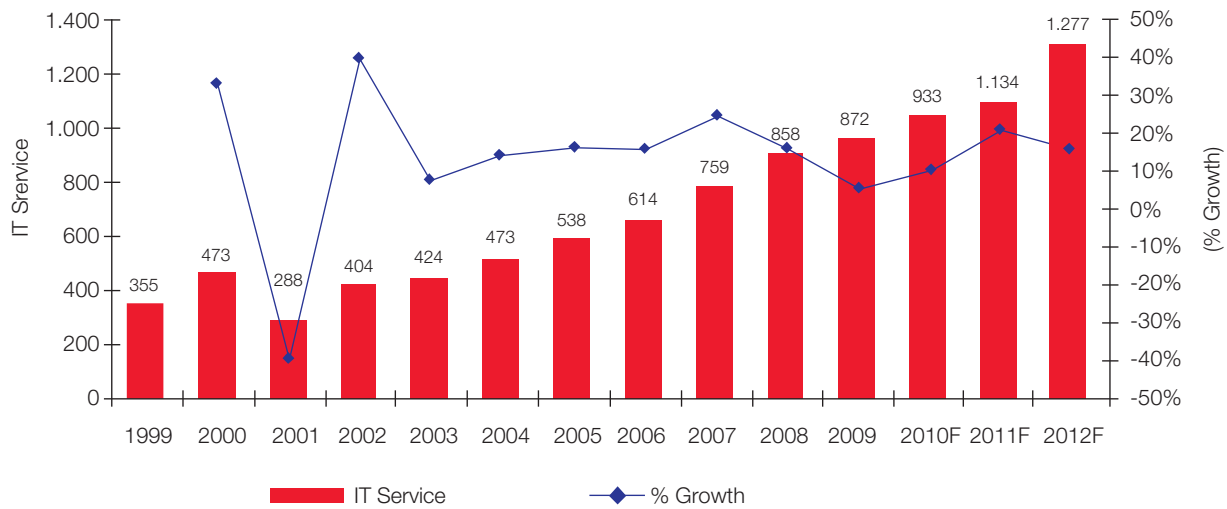
While some part of the software companies offers the ready-to-use packages, particularly the domestic companies in the sector offer software solutions tailored to specific requirements of their customers. Microsoft is the leader of the application software and IBM is leader of the system software. The other major companies in the software sub-group are SAP, Oracle, Havelsan, Logo Yazılım, Likom Yazılım and Link Bilgisayar.

### 1.2.3 IT Services Market

Contrary to the hardware and software sub-sectors, IT Services sub-sector s the constant and necessary services relating to the existing IT investments periodically and leasing services. In the 2001 crisis, the Turkish IT Services Market decreased to 288.2 million USD with a decrease of 39% comparing to the previous year. The volume of the Turkish IT Services Market grew faster than the total market in 2002, reaching 403.5 million USD, and the share of the IT Services in the total market increased to a record level of 28.1% in the same year. The market increased by 13.4% CAGR between 2002 and 2008, reaching 858 million USD as of the end of 2008. However, in spite of the pressure of the crisis that deepened in the last quarter of 2008 on the consumption tendencies, the market was realized at 872 million USD in 2009, with an increase of 2% comparing to the previous year.

The share of the IT Services in the total market was 16.1% in 2008, which decreased to 15.3 in 2009. However, it is expected that this share will increase due to the needs that may arise during the integration of newer technology systems on the existing systems and outsourcing of IT operations by big companies –banks in particular.

IT Sector IT Services Growth Figures and Growth Targets, 1999-2012 (Mio USD,%)



Source: IDC 2010

### İndeks Bilgisayar in the ICT Sector:

In Turkey, Top 500 ICT Companies Ranking performed every year by Interpro Medya A.Ş., our company ranked seventh in the general ranking based on turnover achieved in 2008 among the companies including telephone operators and mobile phone sellers. On the other hand, it ranked first, like the previous years, in the category of companies selling only computers. Further, it ranked first in six IT categories.

#### 2008 Top 10 ICT Companies Revenue Range (Sales Revenue)

2008 Range	Company	US \$ (mio)
1	Türk Telekom	7.909
2	Turkcell	6.861
3	Vodafone	2.100
4	Avea	1.639
5	KVK	1.592
6	Gen-pa	1.395
7	<b>İndeks Computer</b>	<b>720</b>
8	Hewlett-Packard	682
9	Teknosa	598
10	Digitürk	549



### Important Events in the IT Sector in 2009:

Important events that occurred in the Turkish IT Sector in 2009 are listed below:

1. Special Communication Tax imposed on internet services, which had been 15% for fixed services and 25%, for mobile services, was decreased to 5% by the Law no. 5838 dated 18.02.2009.
2. In line with the measures taken against the economic crisis, imposed 18% VAT rate on computers and some computer parts was decreased to 8 percent temporarily for the period between 1 April and 30 September.
3. In March 2009, Computer Supported Voter Registry System was introduced by the Supreme Election Board according to the Law Basic Provisions of Elections and Electoral Rolls no. 298. The Supreme Election Board has obtained the ID and address details of citizens in the 2009 local elections from the Identity Sharing System electronically and updated the electoral rolls automatically. This removed the necessity for citizens to apply for electoral rolls personally.
4. In June 2009, Ministry of National Education has electronically obtained the identity and address details of students who are new registered in schools, using ID, Address Sharing System and data sharing between MERNIS, Address Registration System and e-School databases and ensuring interchangeableness, and made their registration in the schools nearest to their home address automatically.
5. Authorization procedures for Third Generation Mobile Service (3G) were completed in April 2009, 3 Mobile Phone Operators in the Turkish Market were authorized to provide 3G services. It was started 3G service at the end of June 2009.

### 1.3 Growth of Turkish IT Sector:

Factors Inciting the Growth of the Turkish IT Sector:

- **Rapidly Increasing Usage of Technology:** All business and public companies recognise the value of the increasing control over sources, development of productivity, expanding the business volume and analysing the customer requirements by using the technological devices.
- **Economic Performance:** The development of the IT market was struck down by the economic crises of 2001 and 2008. After the economic crisis, Turkey entered a recovery period with strict economic policies. Economic stability makes a direct positive effect on IT investments.
- **Changing Economic Structure:** The importance of service sector increased, with a decrease of agriculture in the economy in Turkey in the last ten years. The increasing operations in the service sector instigate the IT investments especially in retail, wholesale, logistics, financial services, professional and personal services markets.
- **Developing Trade with European Union-27 and other EU countries:** Turkey made 40.2% of its importation from the European Union (EU)-27 countries in 2009, respectively. When including also the other European countries in the figures, 59% of the importation was made from the EU countries in 2009. On the other hand, 46% of the total export is made to the European Union (EU)-27 countries in 2009. When including also the other European countries in the figures, 57% of the exportation was made to the EU countries in 2009.

Development of the trade with the European Union and Direct Foreign Investments in Turkey will increase IT investments and competition in local industries, instigate the investments of European Union-originated companies in Turkey, which ultimately expedites the change of quality standards in data management and analysis systems.

**Direct Foreign Investment Inflow:** Direct foreign capital investments in developing countries such as Turkey, make important contribution to the development of the country economy. It makes direct contribution to the improvement of IT investments.

The economic reforms implemented by Turkey just after the 2001 crisis and the macroeconomic stability, together with the political stability, contributed to the improvement of the business and investment environment and broadened the horizon of the companies in their investment decisions. With the economic and political stability environment, Turkey utilized foreign resources in considerable amounts. The amount of the direct foreign investment flowed into Turkey was 1.8 bn USD in 2003, 2.9 bn USD in 2004, 10 bn USD in 2005, 20.2 bn USD in 2006, 22 bn USD in 2007 and 18 bn in 2008. With the effect of the global crisis towards the end of 2008, the foreign capital investments remained limited to 18%. However, the effects of the crisis have aggravated in 2009, which ultimately resulted in a decrease of 58% in such investments (7.6 bn USD).

**Privatization:** Income obtained from privatization has increased considerably in the last 5-6 years. According to the data obtained from the Turkish Privatization Administration, the income obtained from privatization was 187 million USD in 2003, 1.3 billion USD in 2004, 8.2 billion USD in 2005, 4.3 bn USD in 2007, 6.3 billion USD in 2008 and 2.3 billion USD in 2009. 1.225 million USD, 600 million USD and 440 million USD out of 2.3 bn USD obtained in 2009 was resulted from the privatization of Bařkent Elektrik, Sakarya Elektrik and Meram Elektrik, respectively.

Investments made following the privatizations by the new owners of the privatized companies in new infrastructure and technological optimization efforts supported the growth in the IT sector.

**Banking Sector:** The banking sector has undergone a structural change since 2001. Banks are under the pressure of the diminishing profitability due to the changing market conditions. Bank managements are trying to increase their profitability while protecting their market shares. To be marketing-oriented and address to the target customer segment more efficiently have been necessary for all banks. Most of banks have strong growing targets in all customer segments.

IT Managements in Turkish Banks replace the existing IT infrastructure in a certain schedule, instead of replacing all of them at once, in order to use them efficiently and respond to the requirements of the competition.

**Public Sector:** Information Society projects conducted in accordance with the Information Society Action Plan established by the Prime Ministry are defined one of the most important projects of the general policies of the Government. As part of such efforts, e-transformation Turkey Project aims to carry out the process of transformation into an information society in a harmonious and integrated structure under. The administration in charge of the project is the State Planning Organization attached to the Prime Ministry. The State Planning Organisation determines its public investment program by evaluating and selecting the proposals for projects submitted by public institutions and agencies with respect to the plan targets, public investment policies, national economy, the European Union process, sector-specific and intersector priorities and allocating resource to the selected projects.

It is estimated that the number and amount of the projects relating to the public information and communication technology will increase in the forthcoming period.

**Telecommunication Sector:** Turkey made major progress in the telecommunication sector with respect to the compliance with the EU and catching up with the global changes in the recent years. As part of the process of the accession of Turkey to the European Union, the chapter "Information Society and Media" was opened and the negotiations have started on 19 December 2008 because Turkey has met the criteria for the chapter to be opened. On the other hand, the chapter "Information Society and Media" in the Third National Program, which was adopted on 31 December 2008 to schedule the commitments of Turkey for harmonisation with the EU acquisition, commits to complete necessary arrangements in 2009 and 2010. This commitment aims at the liberalization of the electronic communication sector, creation of good working competition atmosphere, catching up with the development in information and communication fields and establishment of infrastructure and legal foundations for the related fields. Accordingly, it is estimated that a resource of about 8 million Euros will be needed for the institutional structuring for purpose of the harmonization with and implementation of the EU acquires.

The enforcement of the Electronic Communication Law, which had been on the agenda of the telecommunication sector for five years from 2003, on 10 November 2008 and the enforcement of the Authorisation Regulation on Electronic Communication on 28 May 2009 are some of the favourable events that occurred in the recent years. In addition to the foregoing, the enforcement of the Number Porting Regulation at the beginning of July may be considered one of the most important steps taken for introduction of the third generation electronic communication service.

Rapid progress of technological developments makes impact on every part of our lives and creates some concepts such as information economy and internet economy. Extraordinary developments in the IT sector go beyond the country borders of the goods and finance markets and take the world into an economic globalization. Besides such progress in the IT technology, telecommunication sector also experiences many developments. As a consequence, it is inevitable that the countries that cannot keep up with such developments will remain behind the technologically advanced countries.

**Logistics Sector:** Intensifying competition in the logistics sector entails to follow the business process via Supply Chain Management (SCM) to control the supply of materials and distribution costs. Big producers operating in consumables and household appliances feel this need considerably. Supply Chain Management solutions require making additional investments in web technologies and communication networks, etc.

**Retail Sector:** Competition in the Turkish retail sector is intensifying. Investments made by international actors in the Turkish market increasingly continue. Media Markt, Dixons, Darty, Electro World and Best Buy have also been included in the chain stores in Turkey in the recent years. Entrance of the international actors into the Turkish market has made a favourable effect on the growth rate of the sector. It is the first time Best Buy and Media Markt have met in the Turkish market in 2009.

**Growing Individual Consumer Market:** It is obvious that consumers use the IT more than before. Opportunity of payment by instalment with credit cards and growth of retail markets rapidly support the growth of the individual consumer market. PC usage of end users and their demand for peripherals have increased from 7% to 38% of the market between 1995 and 2009. Accordingly, the structure of the market has changed, and individual consumers have represented the biggest share in the end user market since 2007.

**Internet Technology and Portals:** Corporate usage of internet technology is still improving. Data portals become common via internet banking. The public sector is the main factor instigating the portal turnovers due to the e-government projects. Telecommunication, production, insurance and distribution sectors use portals for developing business with partners and suppliers, enhance communication and cooperation with customers and develop the management of the internal business processes.

According to the Information society strategy (2006-2010) report, priority subjects considered and hindrances that should be overcome for all actions taken towards an information society are concentrated on the following items:

- Increasing the sustainable growth and competitiveness,
- Enhancing the life quality,
- Prevention of numerical gap,
- Enhancing the competence of human resource and employment,
- Presentation of public services from multi-platforms in a citizen-oriented and efficient manner,
- Generalizing the e-trade,
- Ensuring standardization and security in information society applications,
- Develop R-D and innovativeness in tune with the market and creating value accordingly,
- Generalizing wide band communication infrastructure,
- Enriching the content and information society applications,
- Making use of the convergence potential of technologies,
- Making use of media channels for development of information society.

### Strategic Priorities of Turkey

According to the Information society strategy (2006 - 2010) report, the priorities of the Turkish Strategy are based on the following 7 foundations:

**1-Social Transformation:** "Opportunity for information and communication technologies for everybody". Economic and social benefit will be increased by efficient use of citizens in their daily and working lives.

**2-Penetration of Information and Communication Technologies into Business Life:** "Competition advantage of companies with information and communication technologies". SMEs will be encouraged to prefer e-trade by increasing their computer ownership and internet access rates; the need for information and communication technologies relating to the strategically important sectors and regions will be determined and to meet such need, sector-specific productivity programs will be implemented.

**3-Citizen-Oriented Service Transformation:** "Presentation of public service in high standards". Public services will be transferred to electronic environment starting from the frequently used and value added services via information and communication technologies, and at the same time, the business processes will be restructured in accordance with the user requirements, thereby making service presentation more efficient.

**4- Modernization in Public Management:** "Public management reform supported with IT". An e-government formation attaching priority to efficiency and citizens' satisfaction and having organization and process structures in tune with the country conditions will be realized by support of IT.

**5- Global Competitive Information Technologies Sector;** "Internationally acting IT Sector". Actions to be taken are project-oriented services, improvement of the capabilities and international expansion in IT services and more competitive sector-specific solutions in software.

**6-Competitive, Widespread and Cheap Communication Infrastructure and Services;** "Providing access to high quality and cheap wide band to every level of the society". For ensuring the improvement and widespread usage of the communicational infrastructure and services, an efficient competitive environment will be created in the field of the telecommunication infrastructure. By this way, fast, secure, continuous and quality communication services will be provided, and an environment suitable for the establishment of the telecommunication infrastructures based on new technologies will be created.

**7- Development of R-D and Innovativeness:** "New product and services suitable to the demand of the global market" Priority will be attached to R-D activities in the IT sector which is a highly demanded Innovative and highly value-added sector in the global markets. Development of new technologies and transformation of such technologies into production will be supported. In addition, for development and efficiency of R-D and innovativeness activities, ITs will be used to the maximum extent. The first four of the foregoing strategic priorities are for the change in the daily life of the citizens participating in the economic and social transformation, public sector and business life, and the other strategic priorities are for the IT infrastructure necessary for the realization of such transformation, strengthening the sector that will provide such infrastructure and development of the new product and services that will enhance the competitiveness of our country, being suitable to the demands of the market.

**According to the same report, the objectives of 2010 as follows:**

- Young generations will be prepared for the global information economy.
- Each student graduated from high school will be able to use the basic information and communication technologies.
- One-third of people will make use of e-government, e-trade or e-education services by efficient use of the internet.
- The internet will become an ordinary part of the daily life.
- In the public internet access centres, everybody will have opportunity to learn and use IT.
- Half of the population will use the internet.
- The internet will be made a secure environment for all parts of the society.
- Almost all SMEs, except for micro sized enterprises, will have minimum one computer in Turkey.
- 70 percent of SMEs defined above will have access to wide band internet.
- 15 percent of the total trade will be made via e-trade.
- Minimum 15% of the companies will use enterprise resource planning and 12 percent the modern business applications required by information age such as supply chain management.
- Citizens will access to the electronic public services 7 days x24 hrs via any channel they choose.
- By 2010, 70 percent of the public services will be provided by electronic means, and minimum 80 percent of citizen satisfaction will be obtained in the usage of electronic public services.
- By 2010, one-third of public transaction will be made via electronic means.
- Citizens and enterprises will access to the electronic public service via one single portal, i.e. e-government portal.
- Turkey will become the software and service centre in the region.
- Share of the IT market in the Gross Domestic Market will be increased from 0.8 percent to above 2 percent, which is the average level of OECD.