# POLAND'S TELECOMMUNICATION

**INDUSTRY** 









### KEY ELEMENTS OF THE POLISH ECON-OMY AND THE TELECOMMUNICA-TIONS SECTOR<sup>1</sup>

- EU accession on 1 May 2004
- GDP growth rate [2006-2007] = 6.2-6.5% (vs. 1.6% in EU 25),
- GDP growth recovery forecast for 2008 = 5.4% (vs. 2.3% in EU 25), the European Commission (EC) sees Poland's GDP growth rate at 5.4% in 2008 and at 3.8% in 2009, according to the EC's "Economic Forecast Autumn 2008
- Inflation 4.5% in September 2008, The EC sees Poland's HICP inflation at 4.3% this year and at 3.5% in 2009
- Unemployment rate 8.8% in October 2008, The EC expects Poland's unemployment rate to stabilise at 7.3% in 2008 and 2009, but sees it growing to 7.8% in 2010
- 51% of the population of new EU members
- 47% of Polish society is under 34 years of age
- the largest market in Central Europe, the 8th largest in Europe and the 30th in the world
- high growth potential in telecommunications sector (especially in mobile and broadband segments):
- ongoing dynamic growth in number of mobile SIM cards and broadband users (and visible decrease in fixed lines market)

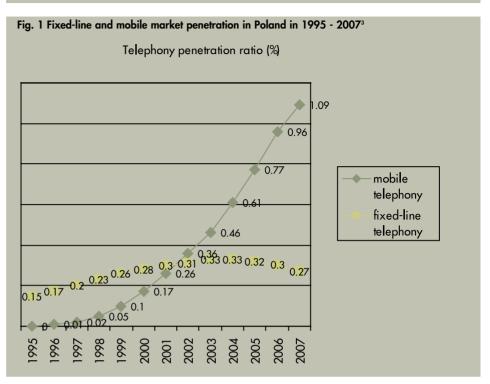
### POLISH TELECOMMUNICATIONS MAR-KET IN 2007

According to forecasts by PMR analytical company, the value of the Polish telecommunications market in 2007 was going to amount to 38.8 billion PLN and according to various estimates, the value of telecom services market measured by the telecom firms' revenues amounted to PLN 39.9bn (EUR 10.8bn) in 2007. However, according to the PMR forecasts, the value of the Polish telecommunications market will increase by 4.2% in 2008 compared to 2007 and will reach the level of to PLN 40.1billion.

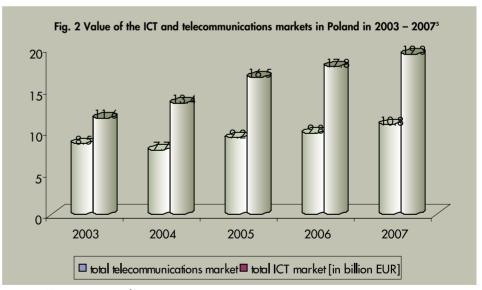
According to EITO (European Information Technology Observatory) telecommunications is one of the most rapidly developing as well as most promising sectors of Polish industry.

The Information and Communication Technology (ICT) market contains six major segments: IT equipment, soft-

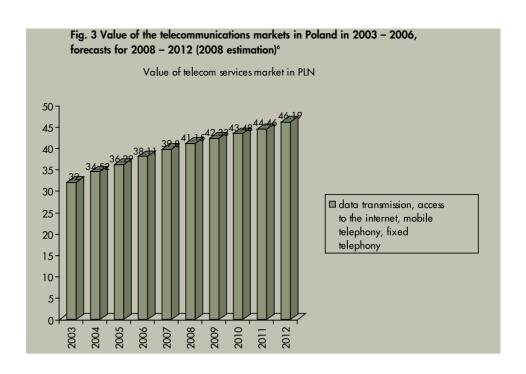
Leverage on Polish market potential <sup>2</sup>						
Poland 2007 Poland 2006 EU-27 2007 EU-27 2006						
Mobile penetration	108.6%	96.3%	111.8%	106%		
PC access by household	41%	36%	54%	49%		
Broadband access by household	30%	22%	42%	30%		



2006	
5 2006	2007
9.8	10.8
17.8	19.3
5	9.8 



ware, IT services telecommunications equipment, and carrier services. The IT market is the sum of IT equipment, software, and IT services. The telecom market is the sum of telecom end-user equipment, network equipment, and carrier services.



### COMPARISON OF THE TELECOMMUNI-CATIONS MARKET IN POLAND AND SELECTED EU COUNTRIES

In 2007 the Polish telecommunications market (EUR 10.8bn) accounted for 1.6% of the total EU 25, ICT market value of EUR 662,5 billion (EUR 640,8 billion in 2006). According to the European Commission, ICT sector is itself worth 6-8% of the EU's GDP in 2007.

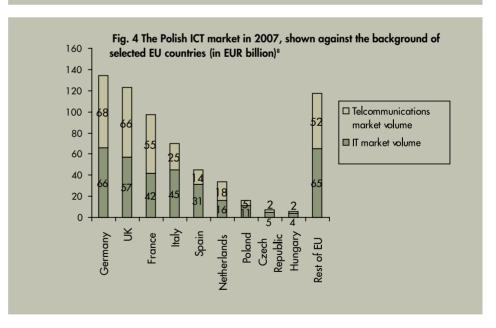
The Polish telecommunications market is by far the largest among the telecommunications markets of the EU's new member countries. It accounts for over 66% of the market share of the telecommunications markets of these countries (EUR 18 billion) in 2007.

According to PMR Company, The telecommunications services market in Poland has entered the maturity phase in 2007. The increases in value noted in the previous three years were only minimal, 2-5% annually(in 2005 was a growth rate of 8.1%). Despite a forecast increased dynamic in 2008 compared with 2007, a reverse of this trend and even higher growth should not be expected in the next years. The dominating trends lead to the sector more closely resembling the mature markets of Western Europe.

### PROFILE OF THE POLISH TELECOMMUNICATIONS MARKET

- The value of the total Polish ICT market in 2007 was EUR 19.39 billion.
   The market is divided into 4 segments:
- the fixed voice telephone services seg-

ICT market	Market volume (in billion Euro) Growth rates								
European Union	2005	2006	2007	2008*	2009*	06/05	07/06	08/07	09/08
Total ICT + digital CE	667.7	695.0	723.8	745.4	761.9	4.1%	4.1%	3.0%	2.2%
Digital CE	45.6	54.3	61.2	62.7	60.7	19.1%	12.8%	2.5%	-3.2%
Total ICT	622.1	640.8	662.5	682.6	701.2	3%	3.4%	3.0%	2.7%
Total IT	274.6	284.5	298.5	311.1	324.1	3.6%	4.9%	4.2%	4.2%
IT equipment	90.3	89.9	91.1	92.1	92.4	-0.5%	1.4%	1.1%	0.3%
Software	49.6	52.6	55.7	58.6	61.7	5.9%	5.9%	5.3%	5.3%
IT services	134.6	142.1	151.7	160.4	170.1	5.6%	6.7%	5.8%	6.0%
Total Telecom	347.6	356.2	364.1	371.5	377.1	2.5%	2.2%	2.0%	1.5%
Telecom end-user equipment	28.6	29.4	30.2	30.5	30.8	2.7%	2.6%	1.1%	1.1%
Network equipment	32.3	33.4	34.6	35.4	36.3	3.4%	3.8%	2.3%	2.5%
Carrier services	288.6	293.5	299.3	305.6	310.0	2.4%	2.0%	2.1%	1.4%



ment (estimated on Fig.5 without data transmission and Internet access);

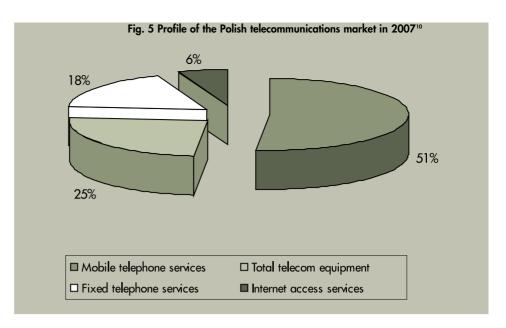
- the mobile telephone services segment (estimated on Fig.5 without data transmission and Internet access);
- the data transmission and Internet access services segment;
- the telecom equipment and devices segment.
- The mobile telephone services segment with its 51% of market share (EUR 6.1 billion) created the biggest part of the domestic telecommunications market. The telecom equipment and devices segment was slightly smaller (25% of market share) in 2007 at EUR 2.9 billion. The value of the fixed-line market fell by 11%

to just over EUR 2.1 billion after falling by 18% in 2006, according to UKE. The current year should bring another decline in the fixed-line telecom market value. According to various estimates the fall should amount to 3-5%. As to other segments of the telecom market, the internet access market amounted to EUR 0.7 billion, according to UKE.

- The leader of the Polish telecommunications market in 2007 remained Telekomunikacja Polska GK. with total revenues = EUR 4.8 billion;
- the second one was Polkomtel S.A. (total revenues = EUR 2.06 billion) and the next –
- PTK Centertel S.A. (total revenues = EUR 1.97 billion) and Polska Telefonia Cyfrowa Sp. z o.o. (total revenues = EUR 1.96 billion).

### MANUFACTURERS OF TELECOMMUNI-CATIONS EQUIPMENT IN POLAND

- In 2007 the Polish telecommunications equipment and devices market was dominated by foreign companies: Siemens, Ericsson, Alcatel-Lucent Polska and Motorola.
- In 2007 the largest domestic manufacturers of the telecommunications equipment and devices were Zakład Produkcji Automatyki Sieciowej, Radmor, VECTOR, Alcatel-Lucent Polska, DGT, FCA, Optomer, Platan and Slican (PBX manufacturers).
- According to PMR Company, the telecommunications and network equipment market in Poland has been increasing in recent years. The market value is expected to grow steadily in 2008-2009. The structure of the telecoms equipment spending is changing due to expansion of mobile telephony and broadband. In 2007 the Polish market for telecommunications equipment and devices was worth approx. EUR 2,88 billion, which means a growth of around 4% in comparison with 2006. The Polish market for telecommunications equipment is characterised by steady growth. In the years 2001-2004 the growth rate was rather slow, at just over 2% per year on average. An acceleration took place in 2005-2007, fuelled by rapid expansion of mobile telephony and broadband internet access. Telecom equipment currently accounts for about 20% of the Polish telecommunications market as a whole. The main customer for telecom and network equipment in Poland are telecom operators and ICT service providers.



Tab. 4 The main telecommunications companies operating in Poland in 2007<sup>11</sup>

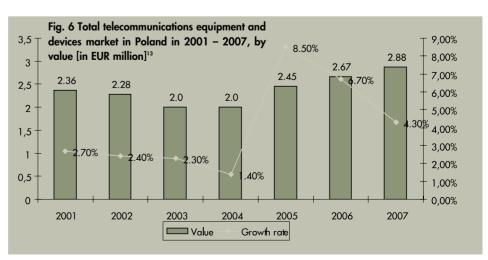
	Company	Total Revenues [in EUR million]
1.	Siemens Sp. z o.o.	678.6
2.	Ericsson Sp. z o.o.	171.5
3.	Alcatel Lucent Polska	134.3
4.	Liberty Poland	122.7
5.	mPunkt Polska	128.3

Tab. 5 The largest domestic manufacturers of the telecommunications equipment and devices in Poland in 2007<sup>12</sup>

	Company	Revenues [in EUR million] from production of telecommunication equipment
1.	Zakład Produkcji Automatyki Sieciowej	19.9
2.	Radmor	19.3
3.	DGT	14.4
4.	VECTOR	13.7
5.	Lucent Technologies Poland Sp. z o.o.	13.4

The figure includes both end-user equipment as well as network and data transmission equipment.

TOTAL TELECOMMUNICATIONS EQUIP-MENT AND DEVICES MARKET IN POLAND IN 2001 - 2007



### IMPORTS AND EXPORTS OF TELECOM-MUNICATIONS EQUIPMENT AND DEVICES - POLAND 2005-2007

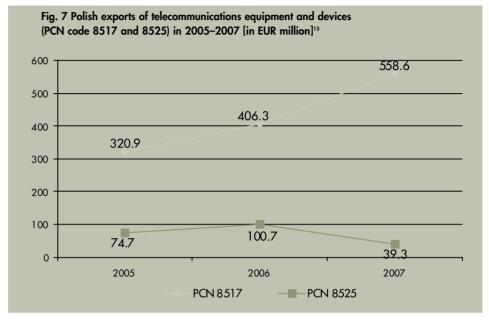
• Poland is one of the major European importers of the telecommunications equipment and devices. In 2007 Polish imports of telecommunications equipment and devices reached EUR 2.5 billion. In the same period, Polish exports were estimated at EUR 597.9 million.

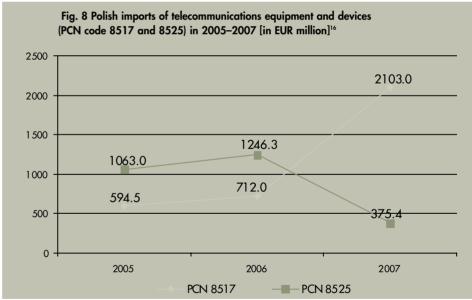
Main sources of telecommunications equipment and devices imports (PCN 8517 and 8525):

- China.
- Finland,
- and Japan.

Tab. 6 Imports / exports of telecommunications equipment and devices – Poland 2005–2007 [in EUR million], according to Polish Combined Nomenclature (PCN )<sup>14</sup>

	<exports></exports>			<>		
	2005	2006	2007	2005	2006	2007
<b>8517 -</b> Electrical apparatus for line telephony or line telegraphy	320.9	406.3	558.6	594.5	712.0	2103.0
<b>8525 -</b> Transmission apparatus for radio-telephony, radio-telegraphy, radio-phony and television	74.7	100.7	39.3	1063.0	1246.3	375.4
Total	395.6	507.0	597.9	1657.5	1958.3	2478.4

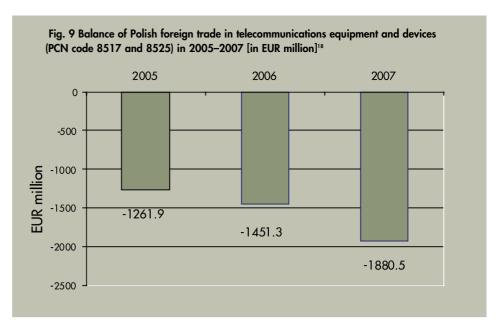




Tab. 7 Balance of telecommunications equipment and devices – Poland 2005–2007 [in EUR million], according to Polish Combined Nomenclature (PCN )<sup>17</sup>

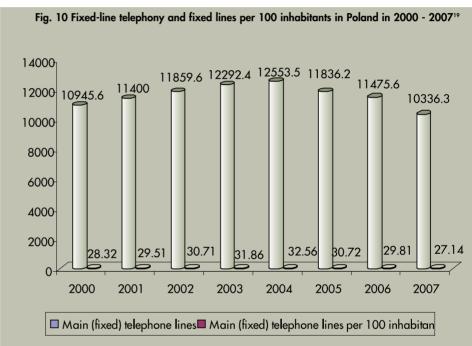
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	2005	2006	2007
<b>8517 -</b> Electrical apparatus for line telephony or line telegraphy	-273.6	-305.7	-1544.4
<b>8525 -</b> Transmission apparatus for radio-telephony, radio-telegraphy, radio-phony and television	-988.3	-1145.6	-336.1
Total	-1261.9	-1451.3	-188.5

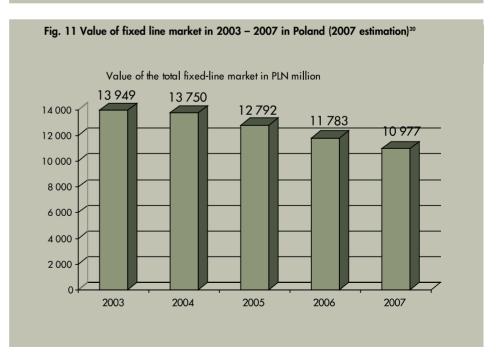
Top 10 telecoms (operators offering telecommunications services) in Poland in 2007, ranked according to revenues (in EUR million)

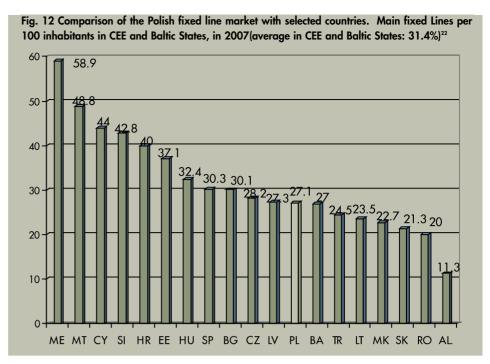


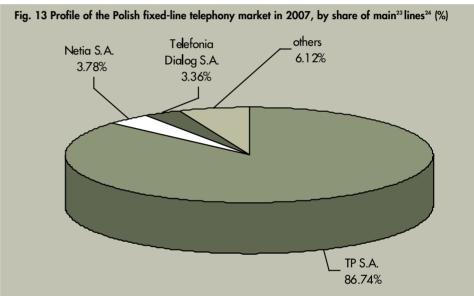
#### **FIXED-LINE TELEPHONY**

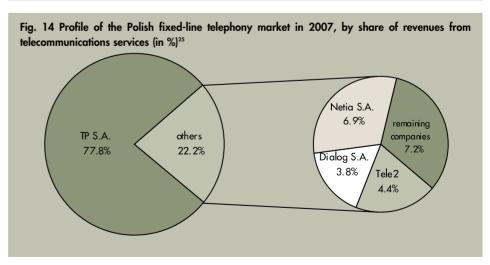
- According to the report published by the market regulator UKE, fixed-line telephony is more and more often replaced by the mobile segment. The mobile market's share in total revenues grew from 36% in 2000 to about 60% in 2007. The value of the fixed-line market fell by 11% to just over PLN 8bn after falling by 18% in 2006, according to UKE, while the value of the mobile telephony segment grew by 7% to PLN 23.1bn in 2007. 2008 should bring another decline in the fixed-line telecom market According also to Company report, this segment noted an almost 10% decrease in value, primarily due to fixed-to-mobile substitution. Moreover, nothing demonstrates the possibility to reverse this trend in the next 2-3 years.
- In terms of sales revenues as well as subscribers, main lines and fixed voice traffic, Telekomunikacja Polska S.A. still remains the leader of this sector. However, In 2003 TPSA's market share totaled 87%, dropping to 71% in 2007.
- The operator TPSA registered PLN 18.2bn revenues in 2007, by 2% lower than in the previous year. The TPSA's revenues are expected to continue their falling trend in 2008. From the fixed line services, the group expects to generate PLN 9.9bn in 2008, which would mean a 4% fall from 2007.<sup>21</sup>

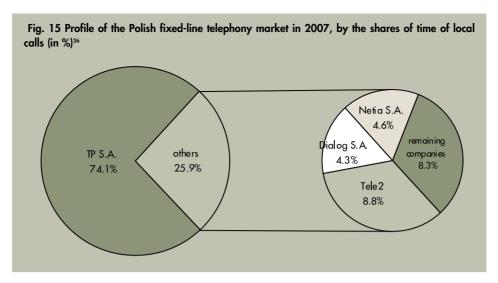


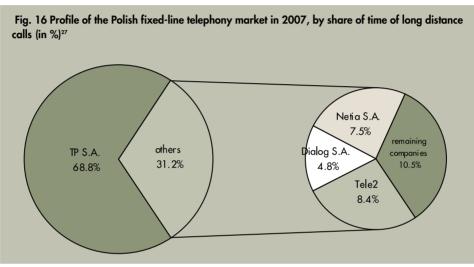


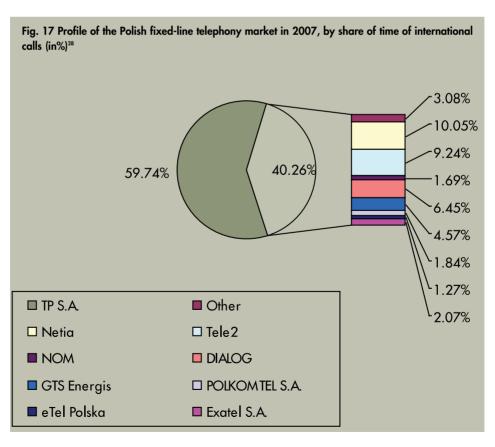












### RANKING OF THE MAIN TELECOMS OPERATING IN POLAND

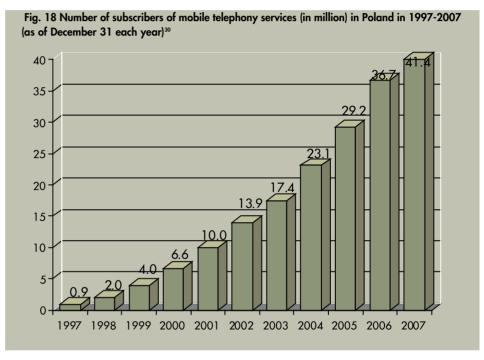
• In 2007, there were 40 operators with own telecommunication network on the Polish market of telecommunications services. Their annual turnovers differ significantly. The highest turnover was by Telekomunikacja Polska S.A. - more than EUR 4,8 billion in 2007. Telekomunikacja Polska S.A is followed by mobile operators: Polkomtel S.A., Polska Telefonia Komórkowa (PTK) Centertel Sp. z o.o. and Polska Telefonia Cyfrowa (PTC) Sp. z o.o.

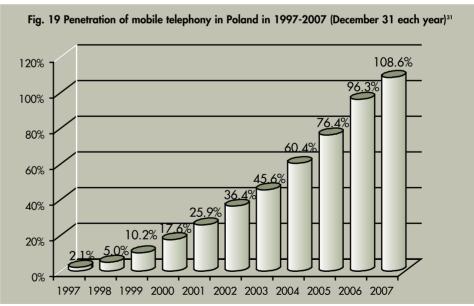
### **MOBILE TELEPHONY**

• The Polish mobile telephony market continues to grow. At the end of 2007 the total number of mobile phone subscribers in Poland reached the level of 41.39 million. In 2007, comparing with the situation in 2006, the number of subscribers grew by 5.69 million, or by 15.5%.

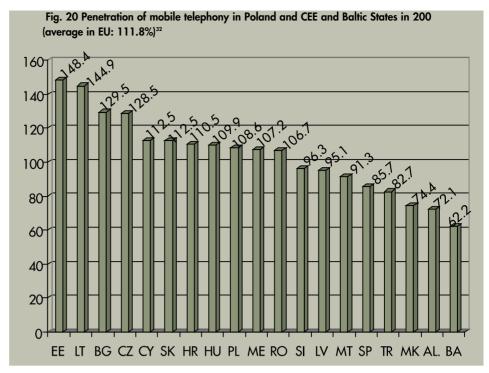
Tab. 8 Top 10 telecoms (operators offering telecommunications services) in Poland in 2007, ranked according to revenues (in EUR million)<sup>29</sup>

	Company	Turnover (in million EUR)
1.	Telekomunikacja Polska (capital group)	4822.755
2.	Telekomunikacja Polska (GK TP)	2728.065
3.	Polkomtel S.A.	2159.733
4.	Polska Telefonia Komórkowa (PTK)	1972.560
	Centertel	
5.	Polska Telefonia Cyfrowa (PTC) Sp. z o.o.	1963.044
6.	Netia S.A. (capital group)	221.529
7.	UPC Polska Sp. z o.o.	166.001
8.	Exatel S.A.	133.832
9.	Telefonia DIALOG S.A.	130.895
10.	Multimedia Polska SA GK	110.892

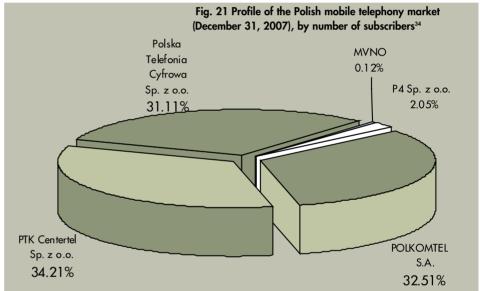




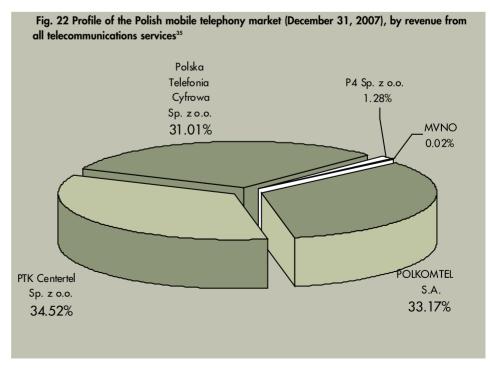
• In the end of 2007, the penetration rate of mobile telephony in Poland reached 108.6% meaning that almost all of Polish residents were users of mobile telephony. Based on the research carried out for the UKE by CBM Indicator as well as on PMR Company calculations, it estimates that at end of June 2008, approx. 77% of Poles used mobile services.<sup>33</sup>



 In terms of the number of subscribers Poland's largest mobile operator is Polska Telefonia Cyfrowa Sp. z o.o. (PTC) with almost 35% market share in this segment, which is about 10.2 million subscribers.



In terms of revenues from all telecommunications services Poland's leading mobile operator is POLKOMTEL - EUR 2.06 billion, and third - PTK Centertel - EUR 1.97 billion and PTC - EUR 1.96 billion.



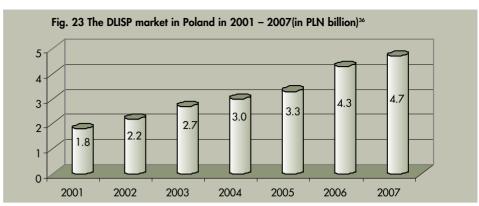
### Polish DLISP (Data Transmission, Line Rental, and Internet Services Provision) market

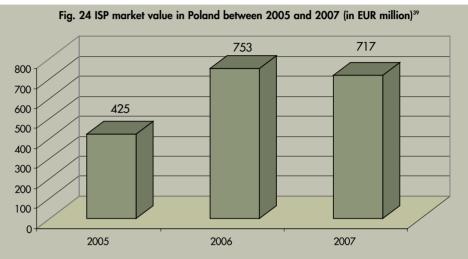
- According to research conducted by PMR Consulting the value of the Polish DLISP (Data Transmission, Line Rental, and Internet Services Provision) market in 2007 reached the level of 4.7 PLN billion (in 2006

   4.3 PLN billion). It means the growth rate of the domestic DLISP market value reached the level of 11% yearly.
- Such a high growth rate of the domestic DLISP market will be mainly due to the Broadband Data Transmission segment the most rapidly growing segment (growth rate = 27% per year) of the Polish DLISP market. In 2008 the Broadband Data Transmission segment will reach over 1/2 (PLN 2.3 billion) of the entire Polish DLISP market (comparing with 1/3 in 2005).
- The value of dial-up market in Poland in 2007 totalled about PLN 90.2 million, while in 2006 it totalled over PLN 176 million, which means a drop by about 49%.
- The value of the retail leased lines market at the end of 2007 totalled over PLN 370 million. In comparison with 2006, the revenues from retail leased lines rose by 6.8%. The growing revenues may be caused by the fact that the charges on the retail leased lines market are lower than the charges on the wholesale market.<sup>37</sup>

#### THE INTERNET SERVICES MARKET

- The value of the Internet services market in 2007 is estimated to be about EUR 717 million (PLN 2.71 bn). This is the amount of total revenues of companies that provided their reports in 2006 (over 2300 companies); compared to over 700 reports sent to UKE in 2007. In comparison with 2006 the value of the internet services market fell by 7% 38
- The number of Internet users (individuals aged over 15 regularly using the Internet) in Poland reached 16 million users (representing 41.6% of the population) in June 2008, according to Internet World Stats. There were 14 million Internet users in Poland (representing 36.6% of the population) in December 2007. This was up by 403% compared to 2000. 40

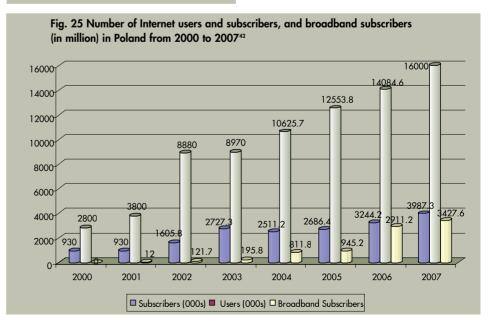




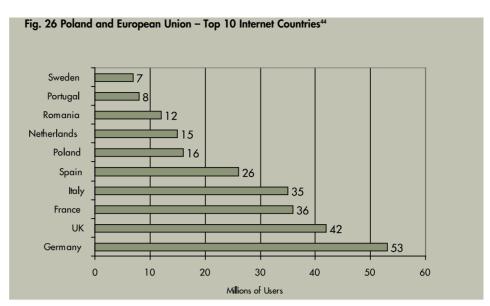
Tab. 9 Share of households having broadband connection to the Internet in the new EU countries in 2007<sup>41</sup>

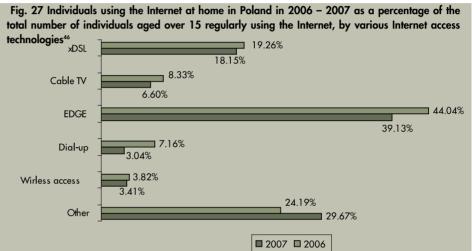
EU (27 countries)	42%
EU (25 countries)	43%
Czech Republic	28%
Estonia	48%
Cyprus	20%
Latvia	32%
Lithuania	34%
Hungary	33%
Poland	30%
Slovenia	44%
Slovakia	27%

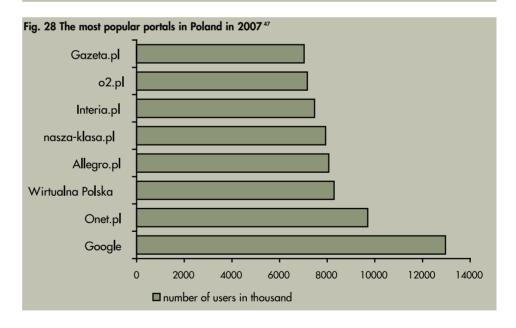
NOTE: The availability of broadband is measured by the percentage of households that are connectable to an exchange that has been converted to support xDSL-technology, to a cable network upgraded for Internet traffic, or to other broadband technologies. It covers all households having at least one member in the age group 16 to 74 years.



- In May 6, 2008, there were one million domains registered in Poland 43 and by the end of 2007, the number of registered eu domain names in Poland had grown to 102, 138, a staggering rise of 48.64 percent compared to the year before, according to statistics from EURid.
- Poland has by far the largest number
   16 milion of Internet users among the new members of EU and that puts
   Poland into 6th place in UE-27.
- The main provider of Internet services is TP S.A. Its market share reached 58.6% in 2007. In 2006, there were 615 internet service providers in Poland. 45







### THE CABLE TELEVISION OPERATORS MARKET

- The cable television operators keep becoming major providers of the Internet in Poland. It is estimated that cable television subscribers account for 4.3 million people (3.7 million in 2006) and 3.4 million people have broadband access to the Internet in Poland in 2007.<sup>48</sup>
- Members (cable TV operators) of the Polish Chamber of Electronic Communication (PIKE) represent by 77% of the domestic cable TV market in Poland [access to TV program and broadcasting, Internet and digital telephony]. PIKE on basis of knowledge about the Polish cable branch, accumulated since many years, estimates total quantity of national cable operators subscribers on approx. 4,5 million in June 2008.<sup>49</sup>
- In 2006-2007 few cable TV operators started offering Triple Play service high-speed Internet, television (Video on Demand or regular broadcasts) and telephone service over a single broadband connection (VoIP). Triple Play services are offered by cable television operators as well as by telecommunication operators (Telekomunikacja Polska S.A.).

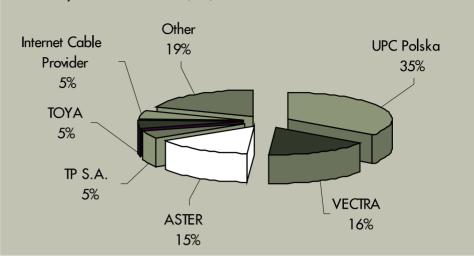
## FOREIGN INVESTMENT IN THE POLISH TELECOMMUNICATIONS SECTOR

- In 2007 the value of foreign direct investment (FDI) inflow to Poland was EUR 16,7 billion, up by EUR 1.5 billion, i.e. 10%, compared with EUR 15.1 billion in 2006. The amount of EUR 16.7 billion is composed of:
- buying/selling shares of Polish direct investment enterprises (EUR 5.5 billion),
- reinvested earnings, which equalled EUR 6.6 billion,
- and loans from direct investors (EUR 4.5 billion).

The table below outlines FDI flows in 2006 – 2007.

 The Polish telecommunications market is one of the sectors that have attracted the largest amounts of foreign capital in the form of direct investment (FDI) over the last 15 years. The largest foreign investor in Poland is still France Telecom.

Fig. 29 The market share of the internet access market in terms of the number of users in 2007, cable TV by TVK modems in Poland (in %)<sup>50</sup>



Tab. 10 The main cable TV operators in Poland in September 2008<sup>51</sup>

				Number of s	subscribers			
Cable TV operator	Market share	Number of subscribers	Cities	Analogue TV	Local househol ds	Internet	Telepho ne	Digital TV
UPC Telewizja Kablowa	22.22%	1.000.000	116	1.000.000	750.000	358.000	139.500	50.000
VECTRA	15.27%	687.000	137	542.000	500.000	175.000	37.000	145.000
Multimedia Polska	14.38%	647.000		600.000	450.000	260.000	191.500	55.000
Grupa ASTER	8.44%	380.000	3	380.000	34.000	152.000	61.000	63.000
TOYA	3.33%	150.000	4	150.000	175.000	58.000	12.000	17.000
INEA	2.69%	121.000	7	121.000	112.000	55.500	11.500	41.000
Stream Communications	1.36%	61.400	16	61.400	61.400	9.600	130	0
MTK S.TAR	1.33%	60.000	21	60.000	40.000	6.000	1.500	0
PROMAX	0.71%	32.000	18	32.000	32.000	12.000	0	4.000
Sat Film	0.56%	25.000	1	23.000	25.000	11.000	0	2.000
Other	29.70%							

Tab. 11 Inflow of foreign direct investment to Poland in 2006 & 2007 (EUR million)<sup>52</sup>

	COMPON	TOTAL		
	Equity		Other	
capital		profits	capital	
2006	5.632	4.359	5.071	15.061
2007	5.481	6.615	4.486	16.582

Tab. 12 The largest foreign investors in the Polish telecommunications sector as of the end of December 2007<sup>53</sup>

Investor	Country of registration	Country of origin	Comments
France Telecom	France	France	47.5% stake in Telekomunikacja Polska S.A., PTK Centertel (Orange – head office in Warsaw), DITEL S.A., ITI Lublin Sp. z o.o. (Lublin), TP Internet Sp. z o.o. (including Wirtualna Polska), TP Invest Sp. z o.o., TP MED Sp. z o.o.
Vivendi Universal	France	France	15.04% stake in Elektrim S.A. – office in Warsaw, 50% stake in Carcom Warsaw Sp. z o.o. – office in Warsaw
Telia AB	Sweden	Sweden	Telia S.A., Eniro Polska Sp. z o.o.
Bates Telecom Ltd.	U.K.	U.K.	Energis Polska Sp. z o.o., Cel Polska Sp. z o.o., Telrise Sp. z o.o.
Alcatel	France	France	Alcatel Polska S.A., Alcatel Business Systems Poland Sp. z o.o., Alcatel Setel Sp. z o.o. – Warsaw, Alcatel CIT Polska Sp. z o.o Poznań
Lucent Technologies Network Systems Netherlands B.V.	Netherlan ds	USA	Lucent Technologies Poland Sp. z o.o. – Warsaw and Bydgoszcz
Siemens A.G.	Germany	Germany	98.3% stake in Siemens Sp. z o.o.
Vodafone Americas Asia Inc.	USA	USA	Polkomtel S.A.
TDC Mobile International A/S	Denmark	Denmark	Polkomtel S.A.
D. Chase Enterprises	USA	USA	Polska Telewizja Kablowa S.A. – Warsaw, Katowice, Gdańsk, Cracow and Lublin

 Among the foreign concerns investing in the Polish telecommunications sector there are both companies that render services (such as France Telecom) and manufacturers of telecommunications equipment (such as Alcatel and Lucent Technologies).

#### **TELECOMMUNICATIONS** LAW **POLAND**

Telecommunications Law, Act of 16 July 2004

The Law specifies:

- principles for performing and monitoring business activity consisting involving provision of telecommunications services, provision of telecommunications networks or associated facilities (together referred to as "telecommunications activity"),
- rights and obligations of telecommunications enterprises,
- rights and obligations of telecommunications and radio equipment users,
- conditions for undertaking and pursutelecommunications activity, including radio and television program broadcasting, distribution networks and services,
- conditions for regulation of telecommunications markets,
- conditions for providing universal ser-
- conditions for service user protection,
- conditions for frequency, orbit resource and numbering management,

- conditions for processing telecommunications data and protection of telecommunications confidentiality,
- telecommunications aspects of national defence, state security and public order and safety,
- requirements for telecommunications equipment, radio equipment and telecommunications terminal equip-
- functioning of telecommunications administration, cooperation with other domestic bodies and European Union institutions involved in regulation of telecommunications.

The aim of the Law is to create the conditions for:

- support of equal and effective competition in telecommunications services.
- development and use of modern telecommunications infrastructure,
- ensuring order in the management of numbering, frequencies and orbit resources
- ensuring that users derive maximum benefit in terms of choice, price, and quality of telecommunications ser-
- ensuring technological neutrality.

1 Source: Central Statistical Office (GUS), EUROSTAT, Ministry of Finance Republic of Poland, OECD 2 Source: EUROSTAT 3 Source: Intellinews Telecom Sector Report, July 2008 4 Source: Compiled on basis of data from PMR Company 5 Source: Compiled on basis of data from PMR Company 6 Source: Audytel Company, 2008 7 Source: Éuropean Information Technology Observatory 2008 (EITO) 8 Source: European Information Technology Observatory 2006/2007 (EITO) 9 Source: PMR Company, 2008 10 Source: Compiled on basis of data from The Office of Electronic Communications (UKE) and PMR Company
11 Source: COMPUTERWORLD TOP 200, 2008 May 12 Source: COMPÚTERWORLD TOP 200, 2008 May 13 Source: PMR Company, 2008 14 Source: Central Statistical Office (GUS) 15 Source: Central Statistical Office (GUS)

16 Source: Central Statistical Office (GUS) 17 Source: Central Statistical Office (GUS) 18 Source: Central Statistical Office (GUS) 19 Source: International Telecommunication Union (ITU) 20 Source: Audytel Company -"Polish telecommunication market 2008" 21 Source: Intellnews Telcom Sector Report, July 2008 22 Source: ITU World Telecommunications/ICT Indicators Database 23 Main line means the telephone line connecting the subscriber's terminal equipment to the switched network and having a dedicated port in the telephone exchange equipment (without cellular mobile) 24 Source: Office of Electronic Communications (UKE) 25 Source: Office of Electronic Communications (UKE), according to data obtained up to 23.IV.2008 26 Source: Office of Electronic Communications (UKE), according to data obtained up to 23.IV.2008

27 Source: Office of Electronic Communications (UKE), according to data obtained up to 23.IV.2008 28 Source: Office of Electronic Communications (UKE), according to data obtained up to 23.IV.2008 29Source: COMPUTERWORLD TOP 200, 2008 June 30 Source: Office of Electronic Communications (UKE) 31 Source: Office of Electronic Communications (UKE) 32 Source: ITU World Telecommunications/ICT Indicators 34 Source: Office of Electronic

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39 Source: UKE - "Report on the telecommunications market in 2007"

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telecommunications market in 2007"

51 Source: Polish Chamber of Electronic Communication (PIKE), 30 September 2008 (except MTK S.Tar - 30.06.2008) 52 Source: Polish Information and

Foreign Investment Agency (PAliIZ) 53 Source: Polish Information and Foreign Investment Agency (PAIiIZ)



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