



DIGITAL POLAND
REPORT OF THE GLOBALIZATION INSTITUTE FOUNDATION







INSTYTUT GLOBALIZACJI
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Tomasz Teluk

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REPORT OF THE GLOBALIZATION INSTITUTE FOUNDATION



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GLOSSARY OF MOST IMPORTANT TERMS

Bandwidth - the width of the range (or band) of frequencies that an electronic signal uses on a given transmission medium.

Bit rate – speed of the digital transmission, expressed in Mb/s (megabits per second).

DTH – (Direct-To-Home) transmission of individual satellite broadcast to households.

DTT – (Digital Terrestrial Television) digital transmission from terrestrial transmitters using the DVB-T or DVB-T2 standard.

DVB-C – digital transmission of cable TV.

DVB-H – digital transmission system of mobile equipment (PDA), also cellular telephony.

DVB-S – digital satellite TV transmission system.

DVR – (Digital Video Recorder) - digital receivers with recordable disk.

EBU – European Broadcasting Union.

ETS – European Telecommunication Standard.

FTA – (Free-to-air) - decoded (free) access to digital satellite TV.

HDTV – High Definition Television in 16:9 format.

MCPC – (Multi Carrier Per Chanel) – a method of digital transmission (multiplexing) where several channels are transmitted at one frequency with the same parameters, and high transmission speed.

MHP – (Multimedia Home Platform) - an open TV standard with a possibility to allocate various facilities on the common platform.

MPEG – (Moving Picture Experts Group) a working group for the video and audio encoding standards for electronic media. For the purpose of HDTV the MPEG-4 compression format replaces the less efficient MPEG-2. However, the future belongs to multimedia MPEG-7.

Multiplex – a bundle of data carrying one or more services along one channel; most often used for DVB-T terrestrial transmissions and DVB-S and DVB-S2 satellite transmissions.

Pay-TV – encrypted programs available upon payment.

PPV – (Pay Per View) – a system of paid access to specified programs.

PPC – (Pay Per Chanel)- a system of paid access to a specified channel.

PVR – (Personal Video Recorder) – a digital receiver with a possibility of

recording in its internal memory.

Transponder – a part of a satellite responsible for communication with terrestrial receivers of specified reception and transmission frequency parameters.

Uplink – way of a signal from the terrestrial to the satellite or specification of transmission to a satellite.

VOD – (Video On Demand) – a system of delivering video content as requested by a user who pays only for what he orders.

KEY CONCLUSIONS OF THE REPORT:

- An increased number of households receiving digital programs is directly associated with the increasing offer of digital channels. Poland is and will be one of the countries with the lowest digital reception, irrespective of enormous demand for modern TV sets.
- An increased number of households receiving digital programs is directly associated with the growing offer of digital channels. Poland is and will be one of the countries with the lowest rate of digital reception, regardless of enormous demand for modern TV sets.
- During the last two years, the average price of TV sets with digital receipt was reduced three times in Europe. In 2007, more than 1.5 million digital TV sets were sold in Poland. We purchase more HDTV than the average European country (89% in Poland, 77% in Europe). In the Polish market it is characteristic that analog programs are watched on the most modern TV sets.
- During the last two years, the average price of TV sets with digital reception was reduced three times in Europe. In 2007, more than 1.5 million digital TV sets were sold in Poland. We purchase more HDTV than the average European country (89% in Poland, 77% in Europe). In the Polish market it is characteristic that analog programs are being watched on the most modern TV sets.
- Costs of satellite broadcasting may be even ten times lower than the costs of terrestrial transmission. With the present digitalization strategy, Poland will be one of the most delayed countries in Europe. According to the European Broadcasting Union, the digital signal will reach only $\frac{1}{4}$ of the households, and the analog signal will be switched off not earlier than in 2015.
- Presently, almost 99% of all digital TV channels in Europe is transmitted via satellite (exclusively or parallel to other terrestrial transmission methods). In most European countries the digital satellite transmission covers from 70% to 85% of digital households, and almost 90% in countries such as Portugal, Italy, Greece, or Norway.
- While digitalizing the country the following factors should be taken into consideration: economic calculations, full and fast covering of the country by digital signal, and technological capabilities related to an individual transmission method. The largest possible number of mul-

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tipleres should be made available, allowing for both compression of MPEG-4 in DVB-T2 format, and transmission of the largest possible number of programs in the approaching HDTV standard.

- The following factors should be taken into consideration upon the digitalization of the country: economic calculations, full and fast covering of the country by digital signal, and technological capabilities related to an individual transmission method. The largest possible number of multiplexes should be made available, allowing for both compression of MPEG-4 in DVB-T2 format, and transmission of the largest possible number of programs in the approaching HDTV standard.
 - According to the polls, 78% of Poles is convinced that the public TV should provide users with access to digital TV. 87% of Poles thinks that access to digital TV should be free of charge for those viewers who pay a TV subscription.
- | | —

INTRODUCTION

In 2002, when I was finishing my first book on new technologies, the world was recovering after the failure of the so called “dot-com boom”, i.e. too large expectations towards the information technology. Two years later, while I was preparing the next publication, information technologies constituted the core of the modern business, although digital cameras, MP3 players, and HD technology were probably not as popular as today. Currently we have no problem with either evaluation of high-tech enterprises or access to new technologies. Moreover, we cannot imagine the present life without digital technology. If we can say that the beginning of the millennium was the world of the Internet, then the present times belong to dynamic development of digital multimedia.

Development of digital technologies allowing for transmission of large quantities of video and audio streams is closely related to the number of satellites surrounding the Earth. Only recently, at the end of 2007, the number of satellites orbiting around the Earth was augmented by 30 new ones. Therefore, the number of satellites (commercial, military, civil, government) increased to 873¹. Apart from emission of digital TV and radio signal, satellite communication allows for two-way Internet access and mass distribution of multimedia content.

The year 2004 proved to be crucial for the development of digital technologies. It was then that the HD digital signal was widely introduced, replacing the SD standard. A digital picture received new quality awaited by hundreds of users. Two years later the MPEG-2 encoding standard started to be replaced by MPEG-4. Once again technological development has provided new opportunities for multimedia service providers who may meet demands of customers with more and more expectations.

The enclosed report is focused on the very important problem of the country digitalization: changing to the digital technology with simultaneous cease of analog transmission. There is a huge demand for digital multimedia in Poland. What should we do to meet it? I hope that this study will give you at least a partial answer to this question.

Tomasz Teluk, March 2008

¹Union of Concerned Scientists, status as per December 31st, 2007

CHAPTER 1.

New Digital Technologies

1.1. Supply creates the market

The dynamic increase in demand for digital multimedia services (HDTV, digital radio, video-on-demand, Internet telephony) would not be possible without rapid progress in the technological world. In other words, supply of new products created demand for innovative digital services.

The famous 18th century French economist Jean Baptiste Say noticed that supply created demand. The issue in the new technology market is the practical implementation of the Say's law stating that supply creates the market.

While analyzing the market of digital TV one may notice that a number of customers of such services is proportional to a number of digital channels. In other words, an increase in the number of households receiving digital programs is directly related to the increasing offer of digital channels.

Production of the so called thematic channels specializing in the specified reality area (e.g. information, weather, sports, music, film, history) is a good example.

While broadcasters introduce more and more thematic channels, viewers are provided with a more attractive programming offer. This is profitable for both parties. Users watch only selected content while advertisers may be more precise in reaching the specified consumer target.

1.2. Satellite transmission vs. terrestrial transmission

When regarding the various ways to distribute content, satellite technology has all the advantages. It appears that there is only one factor that decides about the advantage of the transmission via satellite: the opportunity to deliver the digital signal to each part of the world. In times of globalization,

enormous mobility of individuals, urbanization (but also migration from towns to villages), declining resources and absence of spatial limits make satellite transmission much better than terrestrial transmission.

According to the opinion of the Globalization Institute Foundation, this factor should be taken into consideration in the country digitalization strategy. Digitalization should be a common process, i.e. accessible to all citizens, without regard to their place of residence or social status. If the postulate of common digitalization is abandoned, and the digitalization is limited, e.g. to the municipal areas, the areas beyond the terrestrial transmission range will be excluded from the modernization process, and their population will be condemned to the exclusion of technological progress.

Satellite transmission provides full technical coverage and an almost 100% reception footprint all over Poland. Also, the economic benefits of digital satellite transmission are important. The cost of digital signal transmission lowers proportionally to a growing number of recipients. Therefore, the final satellite transmission cost per household will become less expensive. Therefore, the discussed technology has the potential to be significantly cheaper than digital and analog terrestrial transmission.

Costs calculation becomes particularly important in the case of public TV, financed by taxpayers. From a taxpayer's point of view digital satellite transmission is less expensive thus allows for savings in public expenditures, and provides common access to such type of services.

Other technologies, e.g. DTT or cable TV, will not ensure full coverage. Moreover, they require much larger investments. From a technological point of view they have fewer possibilities, e.g. much lower number of TV channels that can be broadcasted.

According to distributors of digital signal, after switching off the analog transmission in Spain, the average cost of program transmission in DTT technology amounts to EUR 3.2 to 5 million, and in case of satellite DTH technology it remains at the level of about EUR 0.5 million. Therefore, in extreme cases, the cost may be even 10 times higher.

1.3. High definition digital reality

Almost 100% of programs transmitted in Europe are done so via satellite, parallel to the terrestrial analog or digital transmissions. This is due to the advantage of satellite's larger coverage area and lower costs. Broadca-

sters are offering more and more programs in the innovative HD technology. However, users will be able to enjoy high definition picture quality only with HD reception. The HD standard is also profitable for programming producers. It is estimated that production costs of HD programs are at least 10% lower than the cost of production of standard programs.

Technological aspects are also important for the popularization of the HD standard. MPEG-4 compression has allowed for reduction of the digital transmission speed from 15-18 Mbit/s (necessary in case of HD with MPEG-2 compression) to 6-8 Mbit/s. The lowest speed of transmission, the lower distribution costs.

In addition, the issues of the digital signal reception have become important. Broadcasters recommended that manufacturers of digital TV sets should ensure relevant quality of program display created in this format. Presently it is recommended that the HD Ready label will refer to TV sets with the minimal resolution of 1024x768 pixels.

Digitalization does not only mean the TV and radio. Digitalization can also provide users with numerous additional digital services, such as video-on-demand, broadband Internet, or the more and more popular Internet telephony. In Poland, in the 3rd quarter of 2006 there were 2.25 million broadband lines allowing for speed exceeding 144 Kbit/s². At that time slightly more than 4.5% of Poles used those lines. When compared to the European and global statistics, this is very poor; however the potential of development in this market is enormous.

It should be noted, however, that several millions of Poles reside beyond the range of terrestrial broadband, thus with no possibility to access the computerization process. Therefore, satellite digitalization allowing for country wide coverage with access to broadband Internet would allow all citizens to use the global network.

²Data as per October 2006 according to UKE.

CHAPTER 2.

Development of digital technologies – role of the user

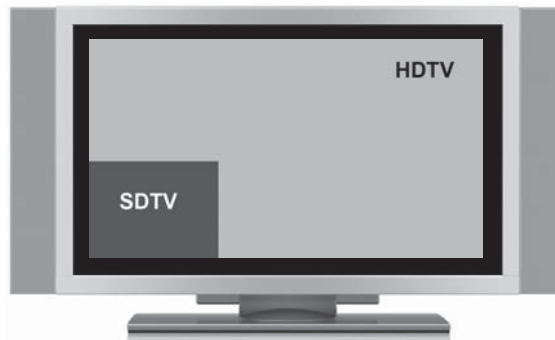
2.1. Price reduction of digital TV sets

To recognize the mechanism behind growing popularity of digital television, one should state that digitalization is forced by the market, or more precisely, by the customer. The larger number of customers generates larger demand for digital services which – consequently – creates larger competition in the market of digital services in respect of their quantities, types, and prices.

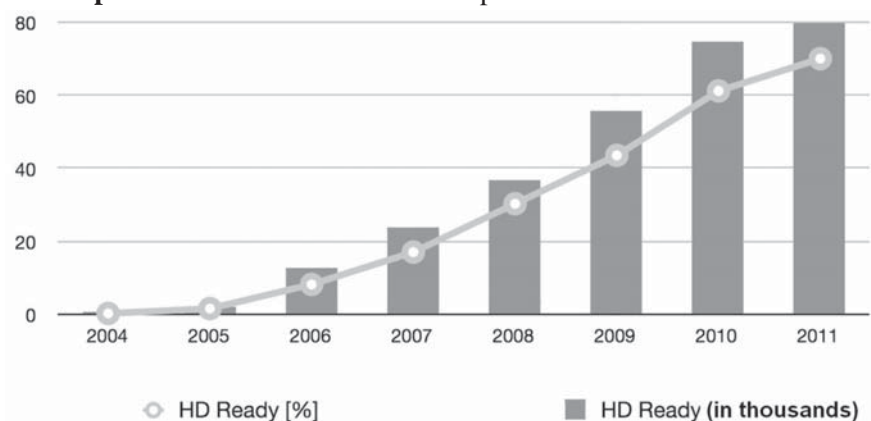
The growing number of users of digital signal would not be possible without the dropping price of digital TV sets. In 2005 production costs of an inch of HD digital display fell below \$ 2.00. At the same time, a variety

of equipment appeared in the market, e.g.: digital cameras, gaming consoles, DVD players, or home cinema. They also allow for benefiting from the said technology.

From February 2005 until August 2007, 27.6 million HD Ready TV sets were sold in Europe, and the largest dynamic of the phenomenon was seen between August 2006 and August 2007³. Most of the TV sets sold in Europe are ready for HDTV reception.



³ Source: GfK Retail and Technology, October 2007

Graph 1. Sale of HDTV sets in Europe in %/thousand

Source: GfK Retail and Technology, October 2007

Between 2005 and the mid 2007 the average price fell from EUR 4,500 to EUR 1,400 for plasma TV compatible with HD technology, and from EUR 4,200 to EUR 900 for LCD TV. This equates to a more than three-fold reduction in price within 2.5 years. Such drastic price reduction resulted from large competition in the market and reduction of component prices. This made HD Ready TV sets more easily available for an average user.

Poland is an important player in the market of TV set manufacturing, as Asian producers invest in factories producing flat LCD panels in the areas of special economic zones. Unfortunately, the production of LCD TV sets in Poland is to a large extent subsidized by the domestic taxpayers. Among 140 thousand companies, which collect the taxpayers' money on annual basis, the Korean LG is the leader. Its daughter companies, manufacturing mainly TV and radio sets and household appliances, received the total of PLN 441.2 of public aid in 2006⁴.

According to the data of the Ministry of Economy, production of flat TV sets, ready to receive digital programs, will increase to 35 million annually in 2010.

⁴Report of the Office for Competition and Consumer Protection on public aid in 2007

2.2. Digitalization as the factor increasing the market competition

According to the recommendations of the European Commission, the member countries will be obliged to change to digital broadcasting before the end of 2012⁵. The Commission proposal is related to the initial parallel operation of two transmission systems: analog and digital, to use the digital one exclusively afterwards.

The technological factor is given as the argument for the change. In particular, the HDTV transmission, interactivity and the increased number of available TV and radio channels are taken into consideration. Digital TV offers a larger number of applications allowing for interaction between a viewer and a broadcaster.

As far as a method of shifting to digital is concerned, the European Commission left freedom of choice to national broadcasters. However, Austria, Germany, and Sweden decided to cease the analog broadcasting in 2010. Great Britain and Belgium announced that they would be ready before 2012.

European Commission provides numerous factors that will increase TV market competition which consequently will bring benefits for consumers and broadcasters.

As per consumers, the factors include:

- access to a larger number of programs from a larger number of broadcasters;
- increased flexibility of services adjusted to user's needs;
- improved quality of services due to better computerization;
- better meeting of the consumer needs, also those disabled;
- lower prices of programs and services.

As per broadcasters, the factors include:

- lower costs of transmission and production of programs;
- release of additional frequencies;
- opportunity to implement new products and services.

⁵Legal terrestrials: Communication from the European Commission to the Council, European Parliament, European Economic and Social Committee and the Committee of the Regions of May 24th, 2005, COM(2005)204.



From the point of view of the market, a very important element of the European Union digitalization strategy is its request to ensure the competition in the digital market, primarily by preventing the situation in which one company obtains a dominant position in this market⁶.

In other words, digitalization, in a natural way, increases competition in the media market. New, better quality and less expensive consumer services are launched. Consumers have larger choice of service providers while broadcasters gain access to new frequencies. They are provided with new technology opportunities and save on production and transmission costs.

⁶Legal terrestrials: Framework Directive of March 2002 on framework regulations regarding services in electronic communication and network.

CHAPTER 3.

Perspectives of the digital technology market in times of globalization

For several years, the experts from A.T. Kearney along with “Foreign Policy” magazine have published the so called Globalization Index, illustrating integration of a given country with the rest of the world. One of the most important factors confirming the advancement in globalization is the technological factor. Phone use, access to free electronic media or broadband Internet are the contemporary determinants of success in the international competition.

Globalization takes place mainly thanks to modern communication technologies in which digital plays the most important role. Such countries as the United States, Ireland, or Estonia are globalization leaders in their regions, mainly because they have concentrated on development of new technologies. Unfortunately Poland uses the advantages of globalization to a lesser extent, taking 41st place in the recent globalization ranking. This low level of technological advancement prevents our country from larger integration with other world economies⁷.

Table 1. Globalization Index 2007

1.	Singapore
2.	Hong Kong
3.	The Netherlands
4.	Switzerland
5.	Ireland
6.	Denmark
7.	United States
8.	Canada
9.	Jordan
10.	Estonia
41.	Poland

Source: “Foreign Policy” 2007.

⁷Globalization Index 2007, “Foreign Policy Magazine”.



Table 2. Technological globalization of the Central Europe 2007

	Place in the ranking		
	Poland	Czech Rep	Estonia
Telephone usage	45	35	29
Internet users	33	32	14
Internet publishers	39	24	21
Secure Internet servers	36	30	20

Source: "Foreign Policy".

As far as digital satellite television is concerned, the United States and Japan are the leaders. Low prices of electronic equipment, including TV sets, plasma or LCD displays, together with consumers' attraction to technical news, and a wealthy society caused extremely dynamic development of HDTV.

In the USA, the biggest broadcasting networks, such as ABC, CBS, NBC, and PBS applied the HD format in production of programs shown during peak time. Not only movies, but also the 24 hour information channels are broadcasted in HD format. During the initial period, over 4 million HDTV sets were sold.

Japan was equally dynamic in its development, where over 3.5 million HDTV sets were sold. 7 out of 10 channels of the digital BS system are broadcasted in highest definition (BS Ippon, BS Asowi, BS-i, BS Japa, BS Fuji, Wowow, NHK-hi).

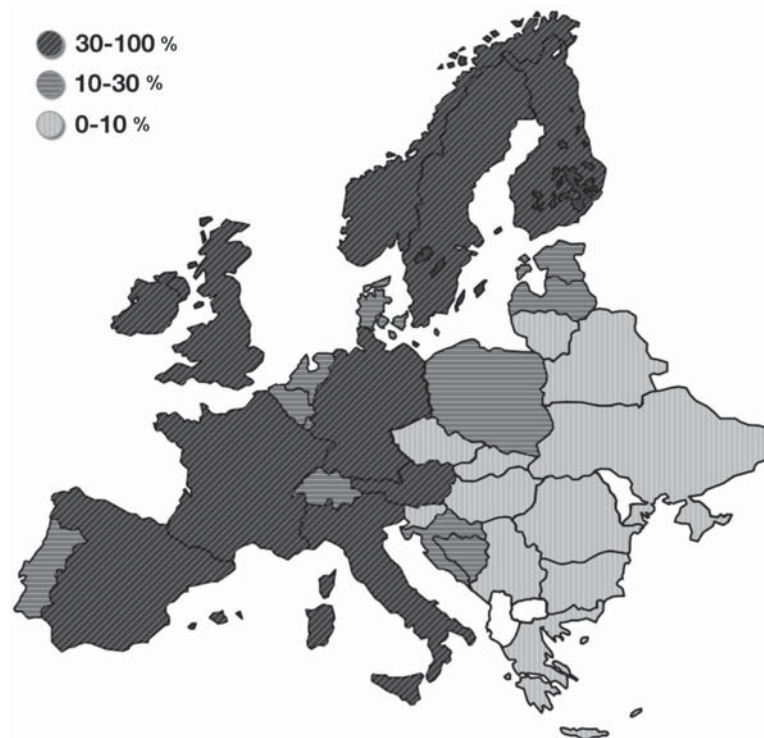
Therefore, it is obvious that the technology has become so important in Europe.

CHAPTER 4.

Digital technologies in Europe

Similarly to USA or Japan, also European broadcasters produce high definition programs. British public broadcaster BBC made numerous scientific, historic, and nature programs.

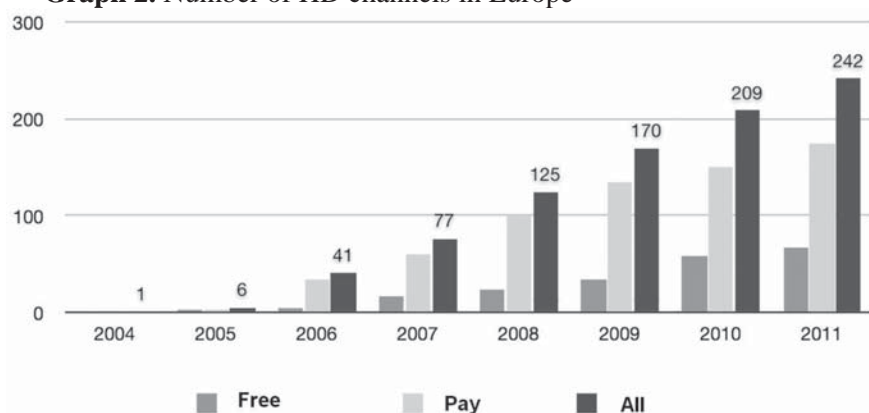
Fig. 1. Digitalization of Europe (coverage in %)



Source: Own study.

While in 2004 there was only 1 HD program, there were already 77 last year and 125 are expected this year. In 2011 there will be 242 channels, paid and free⁸. Other sources, even more optimistic, foresee about 900 channels to be transmitted in 2012, making HDTV a dominant transmission format in Europe before 2015⁹.

Graph 2. Number of HD channels in Europe

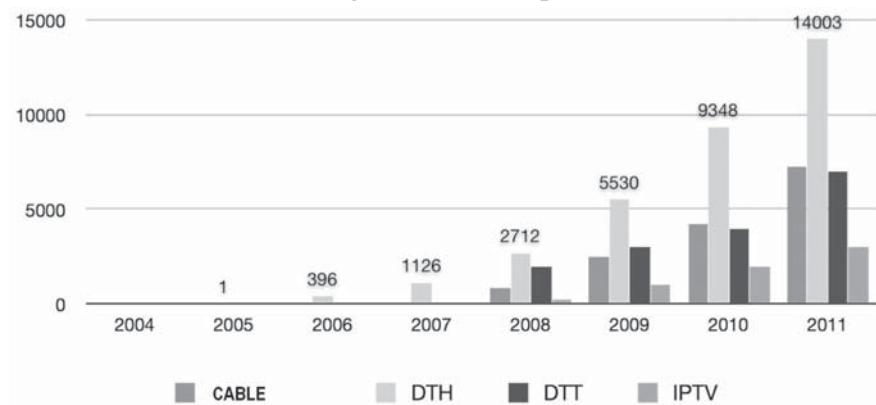


Source: M2 Communication, January 2008

As the most important of the digital content distribution methods, Europe selected satellite TV. According to the estimates of the Globalization Institute, the number of households in Europe with access to digital TV via satellite ranges from 30 million with access to FTA channels only to over 50 million with access to FTA and pay TV. This is much more than provided by other methods of digital TV reception: terrestrial transmissions DTT, internet TV IPTV, or cable TV.

⁸“Screen Digest”, October 2007

⁹M2 Communication, January 2008

Graph 3. Users of free digital TV in Europe in thousand of households

Source: "Screen Digest", October 2007

According to the forecasts, the HD format will already dominate the market by next year. It should be noted that while in 2006 only 10% Europeans had HDTV sets, in 2009 the number HD appliances in households will exceed 55%. In 2011 80% of users will own HD TV sets¹⁰.

Similar results are illustrated in the Euroconsult research. If the years between 1950-1980 are considered to bring the largest development, popularity, and dawn of the black-and-white TV, and years between 1965-and 2015 as the time of color analog TV, then the third generation, with its beginning around 2004, needs to be regarded as the generation of HDTV and plasma/LCD TV sets.

According to Euroconsult, the popularity peak of the color analog TV was at the turn of 21st century (more or less from 1995 to 2005) where the penetration reached 100%. In case of HDTV, 80% penetration will be achieved in 2020, however, this may be a very pessimistic forecast¹¹.

Euroconsult experts estimate that Germany, Great Britain, France, Italy, and Spain will be the largest markets. There is a common agreement that DTH will be the most popular form of accessing the digital content, followed by DTT and cable TV.

¹⁰ Ibidem.

¹¹ Euroconsult prognosis was prepared in 2005, when HDTV was still in its primary state – author's comment.

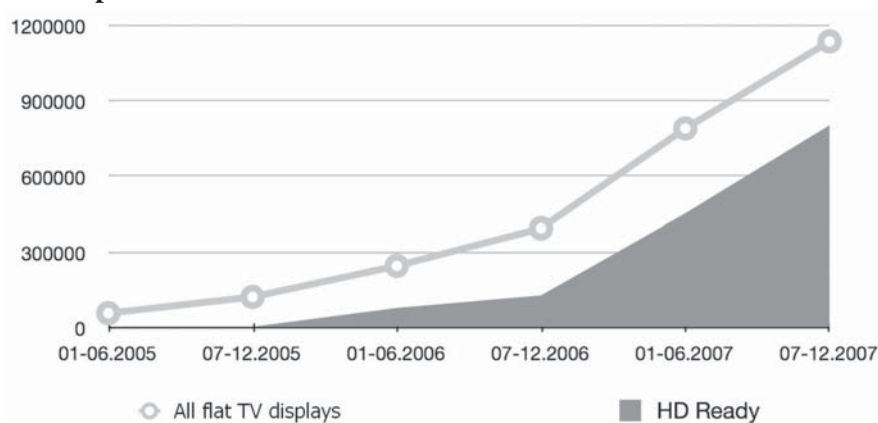
CHAPTER 5.

Challenge: digitalization of Poland

5.1. Potential of the Polish market

As compared to the other European countries, Poland has shown poor progress in the digitalization process. According to the operators' data, digital platforms have 3.5 million users and they expect to double that number before 2012. This means that only several percent of Poles have direct access to digital TV, which is a low indicator as compared to the majority of EU countries. About 6 million households have analog TV today. There is no doubt that also in Poland, the future belongs to the digital TV. This is illustrated by the vigorous sales of LCD or plasma TV sets, which reached at least 1.5 million units last year.

Graph 4. Sale of TV sets in Poland



Source: Own study.

The forecasts are optimistic. The experts expect a programming offer to increase although, as compared to Western Europe, it will still be much poorer.

Forecasts regarding increasing sales of HDTV ready plasma and LCD TV sets are equally optimistic. Today the sale of HDTV sets in Poland significantly exceeds the European average (89% and 77% respectively)¹².

According to estimates of the Globalization Institute, Poles will chiefly use digital satellite TV, which will be received by up to 5 million households in 2011, of which the majority will use pay TV. However, experts of the Globalization Institute claim that it is too early for such prognoses, since the number of individual types of access depends on the accepted digitalization strategy. Also a factor will be the construction of the public digital platform, which cannot be included into the pay satellite platforms, such as Polsat Cyfrowy, Cyfra+ and “n” platform.

According to the opinion of the Globalization Institute, the low level of digitalization in Poland results from the lack of a digitalization strategy. Other negative factors include: indolence of decision-makers, dispersed decisive structure, lack of clear competence of decisive centers, negligence of the technological aspect within TVP.

While the public TV has become the constant object of political battle, and its “mission” is focused on production of entertainment programs of doubtful quality, the technology issue, thus high expectations of users are continuously neglected.

The problems faced by Poland in respect of the growing expectations of users and EU recommendations regarding switchover to the digital signal in 2012 are the following:

- distribution of new frequencies released after switching off the analog TV in Poland, i.e. the so called digital dividend;
- specification of the signal compression format; in present reality this should be MPEG-4 in DVB-T or DVB-T2 standard, allowing for distribution a larger number of programs and having better technological parameters;
- specification of the number of digital multiplexes containing individual programs;

¹²Ibidem.



- ensuring the largest coverage by digital signal, which should be considered to be the most important determinant of the digitalization success;
- providing the best possible offer for users together with the lowest financial cost for a taxpayer.

5.2. Government digitalization project

The presented “Plan of implementation of terrestrial digital television in DVB-T standard” describes the most important elements of the digitalization strategy in Poland¹³. The fact that the document is created so late, 4 years before the date of final termination of the analog transmission as recommended by the European Commission, should be evaluated negatively. Authors of the project admit that switching off the analog signal will not be possible at the beginning or even on December 31st, 2012. Therefore, according to the negotiated GE-06 Agreement, the latest date has been defined as June 17th, 2015,¹⁴.

MPEG-4 is defined as the compression standard. Launch of the first multiplex is planned for January 1st, 2009. The first rights will be granted to the broadcasters of Poland wide channels, i.e. TVP1, TVP2, TVP Info, Polsat, TVN, TV4, and TV Puls¹⁵.

The Interdepartmental Team for Digital TV and Radio will be responsible for the strategy.

The multiplex content will be neither encoded nor pay.

The government is planning the social assistance program for an individual recipient. However, it is not specified, what this assistance should look like. From the point of view of the market and interest of a taxpayer (also the one who is not interested in the access to the digital offer), the best assistance should provide an opportunity to deduct the cost of a digital set top box from the tax (so called digitalization relief). In other cases, in which, for example, production of set top boxes is subsidized, or they are provided free of charge by the state, the market balance may face an impediment. In case of digitalization relief, the consumer will be able to select his product. In case of subsidizing the production of set top boxes, costs of

¹³ Document published by the Ministry of Infrastructure, draft of January 14th, 2008

¹⁴ Ibidem, p. 4.

¹⁵ Ibidem, p. 5.

decoders will increase and the corruption temptations will be also bigger. The worst possible idea would be to grant monopolistic rights to only one producer and to charge all taxpayers (also those not interested in the digital offer) with the costs of such monopoly. Additionally, such public assistance is contradictory to the European law.

Globalization Institute has received the project of creating only terrestrial digital TV very negatively. Such a solution will not provide full digital coverage of the Polish territory, preventing numerous households from participating in the digitalization process.

Additionally, the foreseen DTT system will not allow for launching numerous additional services, characteristic for the new generation digital TV. The government strategy may be characterized in one sentence: “We are building low quality digital TV for the poor”.

Evaluation of the Poland digitalization strategy which is limited to terrestrial television only is also negative. This is due to gigantic costs that will have to be incurred for such type of digitalization. Globalization Institute estimates that the costs of digital broadcasting in this form may even be 10 times higher than the analog broadcasting. In the case of TVP this may amount to PLN 2 billion. It is not clear how this project will be financed, but it may be expected that the funds come mainly from the taxpayer’s pocket.

The last frustrating issue is the fact of a very long implementation time of such projects. The European Broadcasting Union estimates that at such a pace the digitalization in Poland will cover only ¼ of the country before 2012. The Austrian government encountered similar problems: after reaching 1/5 of the terrestrial coverage by enormous efforts and outlays, the further development of terrestrial TV was limited in favor of the ORS digital platform, broadcasted by the Austrian public TV ORF. It is worthwhile to take advantage of the above experience, so that similar errors are not made and paid for by the Polish society, significantly poorer than the Austrians.



Table 3. Digitalization in East Central Europe. Recipients: households in thousand

Country	2008	2010	2012	2012 (coverage)
Czech Republic	790	1770	2300	62%
Estonia	60	150	300	50%
Lithuania	90	220	440	34%
Latvia	60	140	270	34%
Slovakia	98	230	550	29%
Poland	635	1430	3200	25%
Bulgaria	0	162	370	14%
Romania	0	396	890	13%

Source: European Broadcasting Union, 2008

If decision makers wish to focus on one type of technology, in view of the technological, economic, and social aspects contained herein, DTH should be the preferred technology, i.e. transmission of individual satellite signal to households, irrespective of the existing pay TV platforms. Only satellite transmission will allow for full Poland coverage, with reasonable investment costs (significantly below the suggested DTT system), incomparably better technologic features (HD, broadband Internet, VoIP telephony, video-on-demand) and much shorter project implementation time.

According to experts of the Globalization Institute, choosing satellite transmission as the base for the country digitalization would allow for meeting all recommendations of the European Union and switching off the analog signal before 2012. In case of the terrestrial TV, meeting of the requirements before 2015 will be difficult. The examples of other countries show that public TVs are building digital platforms using satellite technology. Such the solution will bring best results.

Obviously there are no obstacles (and at least there are no existing obstacles that are commonly known or available for the purpose of this report) preventing the digitalization strategy from taking into consideration of both broadcasting technologies and treating them as complementary. It is possible that the application of many technologies would be even more effective. DTT technology proves successful in municipal areas and DTH in the remaining areas. However, we are surprised of witnessing the public debate

in which both technologies are treated as alternatives excluding each other. With present knowledge and technological possibilities, such an approach has no grounds. It is also contradictory to the implementation of similar projects in other countries.

There are many other doubts regarding the project of national digitalization presented by the government. In case of the technologic issues it may prove that in view of dynamically developing digital technologies, the present DVB-T/MPEG-4 standard may be poorly efficient at the project completion. Therefore it would be worthwhile to take into consideration a more modern system, e.g. DVB-T2/MPEG-4. The most advanced European countries are already discussing this. As a paradox, the acceptance of DVB-T2 would be a kind of a bonus for Poland being delayed in its terrestrial digitalization.

Additionally, it is not clear why only one multiplex will be activated. The increased number of multiplexes would contribute to the development of the programming offerings. If not, viewers will get the same programs only in a new package, and the social reception of the digitalization process may prove to be a big disappointment. The only remaining feeling will not relate to visible improvement of the service quality, but sense of participation in the process that was enforced by the state. This would be most unfortunate.

5.3. Digital dividend

According to the work schedule, the Office of Electronic Communications should establish the plan of ensuring frequencies for the needs of the first digital multiplex before April 30th, 2008. The debate about the frequency has much wider context, because it refers to distribution of bands freed after termination of the analog TV. Unfortunately, the discussion between decision makers and the interested parties confirms the intention to build television that soon may prove to be archaic, television, in which HDTV is not a standard but a curiosity. This comes together with the plans of building of the DVB-T system, which is satisfied by the standard quality of SD, approved by the government. The opening to the DVB-T2 system in HD standard would be a much more modern and long lasting solution.

Consent of the key market players, who are obviously satisfied with their market position, is also surprising: they do not plan to compete for the

customer e.g. with a higher quality of services. It should also be emphasized that the present quality of digital services in Poland is not only quite poor, but in many cases violates interest of the customer (e.g. manipulation of the offer by enforcing additional fees for thematic channels, low quality of maintenance services). There are also numerous suggestions of alleged cooperation between service providers in order to preserve the market *status quo*.

And so, in debates over the digital dividend, representatives of Polsat Cyfrowy, the largest market player, opted for the DVB-T standard in SD, with an option of migration to HD. TVP S.A. presented a similar option. Only TVN requested using all multiplexes for HDTV.

It should be mentioned here that the largest player in the digital TV market wants the multiplex to transmit in SD, and therefore to make users with HD TV sets subscribe to pay HD channels. Since the public TV does not function in market conditions, it has no motivation to use quality with which to compete. The state owned company does not care about reduction of production costs, because it is not subject to market competition, and its functioning (together with its ineffectiveness, waste, and losses) is financed by a taxpayer.

The process of consulting will most likely end with technologic and quality compromise. The user will not notice any change of image quality when analog signal is switched to SD. Potential benefits of the flat screens, he has invested in, will not be fully used.

CHAPTER 6.

Model solutions of digitalization in Europe

6.1. Great Britain

The British solution is the model example of successful digitalization. Begun in 1994 by News Corporation it today creates the largest satellite pay TV platform in Europe (Sky Digital). The number of users of this platform is estimated at several million households.

Apart from the above, in 1998 the British government commenced terrestrial digitalization, which almost ended in financial disaster. Today, after investments of millions of euro, the terrestrial platform FreeView reaches millions of British citizens.

Following a request of International Olympics Committee to enable TV viewers to watch the 2008 Beijing Olympic Games in HD, the public TV BBC in 2007 launched the free satellite digital platform FreeSat.

The British example is a typical mixture of terrestrial and satellite technologies to cover the largest possible area of the country. Consequently, today almost 95% of the British households have access to free digital TV.

What may be surprising for a Polish reader, is that the key issue was the interest of a consumer and not of the government, party, civil servants, or industry. Therefore, the imperative aim was to provide the largest possible number of citizens with free access to highest quality TV.

The project was not based on particular interests of various groups, but on economic calculation. Government experts estimated the immediate profits from the switchover to digital broadcasting at GBP 1.1 – 2.2 billion, and the total profit from switching off of the analog signal – at GBP 10 billion.

All of this was not only preceded by a public debate, which has been absent in Poland, (the government presented the ready strategy project, pla-

cing consumers against the wall), but primarily was comprised of a successful information campaign with large engagement of non-profit organizations. The campaign focused on benefits from the digitalization process and included manuals illustrating methods of switching over from the analog to digital TV.

Switching over from analog to terrestrial digital TV is taking place in stages, region by region. 15 regions of Great Britain will be transferred to digital reality between 2008 and 2012, starting from the smallest territories of the west coast and ending in London.

The public satellite platform FreeSat – made available by BBC and ITV – offers 40 free channels, including 9 channels of BBC. A FreeSat user will pay only for additional services, e.g. video-on-demand or access to the Internet. In this way the additional 25% of citizens who had had no access to terrestrial or cable TV in strongly urbanized Great Britain was covered by digitalization.

6.2. Experiences of other countries

In Spain, the government noticed the advantages of satellite digitalization when it became obvious that the plans of switching off the analog broadcasting before April 2010 may prove unattainable. The financial result of the digitalization was also important. While the digitalization expenditures in the current year are estimated at EUR 14.5 million yearly with 90% coverage of the country, reaching 96% by 2010 increases these expenditures to EUR 25 million¹⁶. Such a drastic leap results from the need to build infrastructure in the challenging regions (mountains, islands, rural areas).

The French, who will switch off the analog broadcasting at the end of November 2011, foresee that they will achieve 95% coverage of the country as compared to 89% at the end of this year¹⁷. According to the law adopted in March 2007, all unscrambled programs available in the terrestrial multiplexes must also be available free of charge from satellite for all French households. Therefore, the satellite platform TNTSAT, launched last June, offered access to 18 basic French TV programs broadcasted terrestrially plus to 12 satellite French speaking channels (from TV5 to Euronews), 150 international channels and 160 radio stations, all free. Satellite transmission

¹⁶ Source: Upside Analysis, 2007

¹⁷ Source: Conseil Supérieur de l'Audiovisuel, 2008

improved the quality of many programs and ensured that all citizens have access to digital TV under non-discriminating conditions.

For many years the very technologically advanced Germans have been using mainly the satellite transmission, complemented by the cable network of Deutsche Telekom. A similar, hybrid (combining satellite, terrestrial, cable, and IPTV) digitalization model is implemented by all European Union member countries. The only exceptions are: Poland, Bulgaria, and Romania, where there are no digital terrestrial TV systems, and the alternative solutions begin to reach the awareness of decision-makers responsible for digitalization programs.

CHAPTER 7.

Summing up and conclusions for Poland

Summing up the conclusions hereof, the following reasonable theses can be made:

- Quick digitalization of Poland requires use of many digital technologies, in particular coexistence of the terrestrial and satellite systems. The latter allow for full country coverage in a short time.
- In Poland there is unsatisfied demand for digital channels in the highest HD quality. In the case of terrestrial digitalization, the technologic decisions should be based on market needs. The DVB-T2 system with MPEG-4 should be preferred as it will allow for significant savings in the future.
- In the case of satellite digitalization, Poland should define who is to be responsible for building public satellite and terrestrial platforms.
- While implementing of the digitalization project the calculation of costs and expenditures should be taken into account. This particularly concerns the cost of reaching an individual household with digital signal, assuming that the largest possible number of citizens is reached with the transmission.



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Globalization Institute is a private, free market institute of public affairs, established in 2005. The organization conducts research in competitiveness, environment protection, health protection, and globalization. The Institute Council is composed of the scientists from the renowned centers, e.g. Heritage Foundation, CATO Institute, Institute of World Politics, or Centre for the New Europe. **In 2007 the Globalization Institute was nominated to the European award for the best institute of public affairs.**



RESULTS OF PUBLIC OPINION POLL BY TNS OBOP.



O1. Do you receive digital tv channels?

	number of persons	% Yes - via cable networks	% Yes - via satellite	% Yes - via terrestrial television	% I do not have any access to digital channels	% Other
<i>Base: all respondents</i>						
Total	1002	21	23	5	50	0
Sex						
man	479	19	24	6	51	0
female	523	23	23	5	50	0
Age						
15 - 19	86	15	29	0	56	0
20 - 29	199	21	25	7	46	0
30 - 39	166	23	34*	6	36*	0
40 - 49	163	22	26	3	49	1
50 - 59	177	27	16*	8*	49	0
60 +	212	17	14*	4	65*	0
Civil status						
unmarried	280	19	24	7	50	0
married/concubine	590	23	25	4	48	0
divorced/ separated	51	17	18	10	54	0
widow/widower	80	20	12*	3	65*	0
Education						
primary school	246	13*	22	2*	63*	1
secondary technical school	245	20	19	6	55	0
college and post-secondary school	368	23	28*	6	43*	0
licenciate and university degree	141	35*	21	6	38*	0
Occupational activity						
I'm professionally engaged	437	26*	23	6	44*	0
I'm not professionally engaged	565	18*	23	4	55*	0
Social and professional group						
managers/specialists	74	39*	23	5	33*	0
private entrepreneurs	37	38*	36	0	26*	0
administration&services employeess	170	26	30*	9*	36*	0
workers	104	25	12*	6	56	2
farmers	51	0	15	5	80*	0
housekeeper / I'm not professionally engaged, I keep house	38	16	17	11	55	0
pensioners	279	20	18*	3	58*	0
pupils and students	148	18	32*	3	47	0
unemployeed	100	11*	26	6	58	0
Material status estimation						
good	238	28*	32*	4	35*	1
average	612	20	22	6	52	0
bad	151	16	15*	3	66*	0
Household's income						
below 1250 PLN	112	12*	11*	6	71*	0
1250-1999 PLN	167	18	20	5	55	1
2000+ PLN	287	29*	27	5	39*	0
answer refused	435	20	25	5	50	0
Household's size						
1 - 2 persons	276	27*	10*	5	58*	0
3 persons	219	24	26	2*	48	0
4 persons	256	20	26	7	48	0
5 + persons	250	13*	32*	6	47	1
Children in household						
1 child	251	17*	32*	5	46	0
2 children	173	18	25	5	52	0
3 + children	58	20	29	8	39	3
no children	519	25*	18*	5	53	0
Major input in the household's budget						
respondent	404	24	20	5	51	1
someone else	596	20	25	5	50	0
Purchase decisions						
respondent	200	23	15*	4	57*	0
mainly respondent, sometimes someone else	143	22	26	9*	44	0
equally: respondent and someone else	253	23	24	6	48	0
mainly someone else, sometimes respondent	243	21	27	4	47	1
someone else	162	17	24	3	56	0

O1. Do you receive digital tv channels?

	number of persons	% Yes - via cable networks	% Yes - via satellite	% Yes - via terrestrial television	% I do not have any access to digital channels	% Other
<i>Base: all respondents</i>						
Total	1002	21	23	5	50	0
Buying						
respondent	197	22	17*	4	57*	0
mainly respondent, sometimes someone else	164	25	22	5	48	0
equally: respondent and someone else	240	22	25	8*	46	0
mainly someone else, sometimes respondent	246	22	28	4	45	1
someone else	153	15*	23	3	59*	0
Residence						
country	377	3*	34*	6	57*	0
up to 20 000	130	32*	22	3	42*	0
20 – 100 000	196	24	24	3	49	0
100 – 500 000	178	37*	13*	2	47	1
500 000 +	121	40*	6*	9*	45	0
Region						
Northern	95	22	24	4	49	0
Eastern	174	16	24	5	54	0
Western	174	30*	23	11*	35*	1
Central	241	17	17*	4	62*	0
Southern	318	22	27*	2*	48	0
M20_ 5. How important is high income?						
completely unimportant	8	30	29	12	29	0
rather unimportant	28	21	17	30	36	0
neither important, nor unimportant	161	18	17*	1*	64*	0
rather important	390	20	26	6	49	0
very important	413	24	24	4	48	0
M20_ 6. How important is a good job?						
completely unimportant	73	19	23	13	48	0
rather unimportant	41	21	7*	1	71*	0
neither important, nor unimportant	80	24	19	6	52	0
rather important	284	21	28*	3	48	0
very important	523	22	23	5	50	0
M20_ 8. How important is a professional career?						
completely unimportant	102	17	16	2	64*	0
rather unimportant	96	21	20	5	55	0
neither important, nor unimportant	263	19	23	6	53	0
rather important	309	24	26	6	43*	1
very important	232	23	24	4	49	0
M20_ 9. How important is a competence development?						
completely unimportant	93	16	16	3	66*	0
rather unimportant	96	21	18	4	58	0
neither important, nor unimportant	202	18	20	6	56	0
rather important	309	22	26	4	48	0
very important	302	24	27	7	42*	1
M20_ 10. How important are luxury articles in surrounding?						
completely unimportant	92	12*	20	2	63*	2
rather unimportant	239	18	21	3	58*	0
neither important, nor unimportant	359	25*	19*	5	52	0
rather important	172	21	38*	3	38*	0
very important	137	25	21	12*	42*	0
M20_ 11. How important is a prestige in one's environment?						
completely unimportant	47	6*	23	0	71*	0
rather unimportant	131	21	15*	6	56	2
neither important, nor unimportant	284	23	24	4	49	0
rather important	352	20	28*	4	49	0
very important	187	26	20	10*	44	0
M20_ 12. How important are authority, political functions?						
completely unimportant	413	17*	19*	5	59*	0
rather unimportant	262	24	22	3*	52	0
neither important, nor unimportant	180	21	32*	6	42*	0
rather important	97	27	32*	8	33*	0
very important	50	36*	19	12	33*	0

O1. Do you receive digital tv channels?

	number of persons	% Yes - via cable networks	% Yes - via satellite	% Yes - via terrestrial television	% I do not have any access to digital channels	% Other
<i>Base: all respondents</i>						
Total	1002	21	23	5	50	0
M20_13. How important are independence, self-dependence?						
completely unimportant	10	15	0	8	76	0
rather unimportant	36	23	15	21	43	0
neither important, nor unimportant	108	21	21	6	53	0
rather important	324	22	25	3*	50	0
very important	521	21	24	5	50	0
M20_14. How important is a realization of one's interests?						
completely unimportant	11	24	7	5	64	0
rather unimportant	53	21	9*	14	58	0
neither important, nor unimportant	201	17	16*	3	64*	0
rather important	336	21	29*	5	46*	0
very important	402	24	25	5	46*	1

* The section distinctive (statistical importance 0.05)

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O2. Should a free of charge access to the basic tv channels, like: TVP1, TVP2, TVP3, Polsat, TV4, Puls, with no additional fees (except public radio&tv access monthly fee) be available?

	number of persons	% yes	% no	% no matter	% I don't know, hard to say
<i>Base: all respondents</i>					
Total	1002	87	4	7	2
Sex					
man	479	86	5	6	3
female	523	87	4	7	2
Age					
15 – 19	86	88	6	3	3
20 – 29	199	94*	2*	4	0
30 – 39	166	88	2	7	3
40 – 49	163	86	3	8	3
50 – 59	177	85	5	7	3
60 +	212	80*	7*	10*	3
Civil status					
unmarried	280	91*	3	5	1
married/concubine	590	85	4	7	3
divorced/ separated	51	88	2	6	3
widow/widower	80	81	6	9	4
Education					
primary school	246	83*	5	9	3
secondary technical school	245	89	2	5	4*
college and post-secondary school	368	91*	4	4*	1
licenciate and university degree	141	79*	6	13*	1
Occupational activity					
I'm professionally engaged	437	88	3	7	2
I'm not professionally engaged	565	86	5	7	3
Social and professional group					
managers/specialists	74	85	5	9	2
private entrepreneurs	37	85	5	8	2
administration&services employes	170	86	3	10	2
workers	104	91	1	3	4
farmers	51	93	4	3	0
housekeeper / I'm not professionally engaged, I keep house	38	90	3	4	2
pensioners	279	81*	7*	9	3
pupils and students	148	91	4	3	2
unemployed	100	90	2	6	2
Material status estimation					
good	238	84	6	8	2
average	612	88	3	6*	3
bad	151	84	4	10	2
Household's income					
below 1250 PLN	112	87	4	6	3
1250-1999 PLN	167	84	3	10	3
2000+ PLN	287	91*	5	4*	1
answer refused	435	85	4	8	3
Household's size					
1 – 2 persons	276	82*	6	9	3
3 persons	219	88	3	6	3
4 persons	256	86	4	7	3
5 + persons	250	91*	3	6	1
Children in household					
1 child	251	86	4	6	4*
2 children	173	87	2	7	4
3 + children	58	92	3	5	0
no children	519	86	5	7	1*
Major input in the household's budget					
respondent	404	85	5	7	3
someone else	596	88	3	7	2
Purchase decisions					
respondent	200	86	5	7	3
mainly respondent, sometimes someone else	143	86	2	9	2
equally: respondent and someone else	253	86	6	6	2
mainly someone else, sometimes respondent	243	88	3	7	2
someone else	162	88	2	6	4

* The section distinctive (statistical importance 0.05)

O2. Should a free of charge access to the basic tv channels, like: TVP1, TVP2, TVP3, Polsat, TV4, Puls, with no additional fees (except public radio&tv access monthly fee) be available?

	number of persons	% yes	% no	% no matter	% I don't know, hard to say
<i>Base: all respondents</i>					
Total	1002	87	4	7	2
Buying					
respondent	197	85	5	7	3
mainly respondent, sometimes someone else	164	91	2	5	2
equally: respondent and someone else	240	84	5	9	2
mainly someone else, sometimes respondent	246	88	4	6	2
someone else	153	87	2	6	4
Residence					
country	377	87	2*	7	4*
up to 20 000	130	89	2	8	1
20 – 100 000	196	89	7*	4	1
100 – 500 000	178	91	4	5	0
500 000 +	121	73*	8	13*	6
Region					
Northern	95	80	5	13*	2
Eastern	174	89	2	6	2
Western	174	89	5	4	2
Central	241	82*	4	11*	3
Southern	318	89	5	4*	2
M20_5. How important is high income?					
completely unimportant	8	94	6	0	0
rather unimportant	28	56	5	33	6
neither important, nor unimportant	161	86	5	6	2
rather important	390	88	4	6	2
very important	413	88	3	6	3
M20_6. How important is a good job?					
completely unimportant	73	77*	9	13	1
rather unimportant	41	72*	8	11	10
neither important, nor unimportant	80	80	5	13*	2
rather important	284	88	4	6	2
very important	523	90*	3*	5*	2
M20_8. How important is a professional career?					
completely unimportant	102	80*	8	8	5
rather unimportant	96	86	3	8	3
neither important, nor unimportant	263	83*	5	11*	2
rather important	309	89	4	5	2
very important	232	92*	2	5	1
M20_9. How important is a competence development?					
completely unimportant	93	78*	8	9	5
rather unimportant	96	88	2	7	3
neither important, nor unimportant	202	81*	4	12*	3
rather important	309	88	4	6	3
very important	302	91*	4	4*	1*
M20_10. How important are luxury articles in surrounding?					
completely unimportant	92	76*	12	9	3
rather unimportant	239	91*	1*	5	3
neither important, nor unimportant	359	86	5	7	2
rather important	172	88	2	7	3
very important	137	86	3	7	3
M20_11. How important is a prestige in one's environment?					
completely unimportant	47	81	7	8	4
rather unimportant	131	87	3	9	2
neither important, nor unimportant	284	86	5	6	3
rather important	352	87	4	7	2
very important	187	90	3	6	2
M20_12. How important are authority, political functions?					
completely unimportant	413	86	5	6	3
rather unimportant	262	89	5	4	2
neither important, nor unimportant	180	85	2	12*	2
rather important	97	85	2	8	4
very important	50	90	2	8	0

* The section distinctive (statistical importance 0.05)

O2. Should a free of charge access to the basic tv channels, like: TVP1, TVP2, TVP3, Polsat, TV4, Puls, with no additional fees (except public radio&tv access monthly fee) be available?

	number of persons				
		% yes	% no	% no matter	% I don't know, hard to say
<i>Base: all respondents</i>					
Total	1002	87	4	7	2
M20_13. How important are independence, self-dependence?					
completely unimportant	10	71	3	8	18
rather unimportant	36	71	0	25	4
neither important, nor unimportant	108	85	4	6	5
rather important	324	89	3	6	3
very important	521	87	5	7	1*
M20_14. How important is a realization of one's interests?					
completely unimportant	11	86	0	14	0
rather unimportant	53	70*	4	20	6
neither important, nor unimportant	201	84	3	8	5
rather important	336	87	6*	5	2
very important	402	90*	3	6	1*

* The section distinctive (statistical importance 0.05)

O3. Who should secure this free of charge access?

	number of persons	% public television	% private digital television broadcaster	% I don't know, hard to say
<i>Base: persons who think that they should have a free of charge access ensured</i>				
Total	869	78	16	9
Sex				
man	413	79	16	8
female	456	78	15	10
Age				
15 – 19	75	89*	8*	5
20 – 29	187	81	14	8
30 – 39	146	83	13	7
40 – 49	141	66*	26*	9
50 – 59	149	76	20	8
60 +	170	80	11	13
Civil status				
unmarried	254	83	14	6
married/concubine	504	78	16	9
divorced/ separated	45	75	19	7
widow/widower	65	70	17	19*
Education				
primary school	204	82	9*	11
secondary technical school	218	79	17	8
college and post-secondary school	334	75	18	9
licenciate and university degree	111	80	17	6
Occupational activity				
I'm professionally engaged	383	77	19*	7
I'm not professionally engaged	485	79	13*	10
Social and professional group				
managers/specialists	63	80	19	5
private entrepreneurs	31	72	15	13
administration&services employees	146	79	18	6
workers	95	71*	25*	5
farmers	48	86	10	10
housekeeper / I'm not professionally engaged, I keep house	34	68	17	15
pensioners	227	79	11*	13*
pupils and students	135	80	13	8
unemployeed	90	83	17	5
Material status estimation				
good	200	78	19	6
average	541	78	15	10
bad	127	81	14	8
Household's income				
below 1250 PLN	98	81	16	6
1250-1999 PLN	140	80	13	10
2000+ PLN	260	79	16	7
answer refused	370	77	16	10
Household's size				
1 – 2 persons	227	76	15	12
3 persons	194	74	18	11
4 persons	221	82	17	5*
5 + persons	227	81	12	8
Children in household				
1 child	215	73*	24*	7
2 children	151	82	11	9
3 + children	53	82	14	5
no children	449	79	13*	10
Major input in the household's budget				
respondent	342	74*	19*	10
someone else	525	81*	13*	8
Purchase decisions				
respondent	171	69*	22*	12
mainly respondent, sometimes someone else	123	85	8*	9
equally: respondent and someone else	218	76	17	10
mainly someone else, sometimes respondent	214	82	18	5*
someone else	143	84	7*	8

* The section distinctive (statistical importance 0.05)

O3. Who should secure this free of charge access?

	number of persons	% public television	% private digital television broadcaster	% I don't know, hard to say
<i>Base: persons who think that they should have a free of charge access ensured</i>				
Total	869	78	16	9
Buying				
respondent	168	70*	22*	12
mainly respondent, sometimes someone else	149	78	14	11
equally: respondent and someone else	202	78	16	10
mainly someone else, sometimes respondent	216	82	17	5*
someone else	134	86*	7*	7
Residence				
country	329	82*	12*	8
up to 20 000	115	74	21	14*
20 – 100 000	174	77	14	9
100 – 500 000	162	78	18	7
500 000 +	88	75	21	6
Region				
Northern	76	69*	23	8
Eastern	156	71*	17	16*
Western	156	85*	14	5
Central	197	82	15	7
Southern	284	79	15	8
M20_5. How important is high income?				
completely unimportant	7	44	32	30
rather unimportant	16	70	24	12
neither important, nor unimportant	140	80	12	10
rather important	344	81	11*	9
very important	362	77	20*	8
M20_6. How important is a good job?				
completely unimportant	56	79	12	13
rather unimportant	30	72	9	26
neither important, nor unimportant	64	76	20	8
rather important	249	79	12*	10
very important	468	79	18*	7*
M20_8. How important is a professional career?				
completely unimportant	81	82	9	13
rather unimportant	83	70	15	18*
neither important, nor unimportant	217	82	11*	9
rather important	274	76	17	8
very important	213	80	21*	5*
M20_9. How important is a competence development?				
completely unimportant	73	81	5*	17*
rather unimportant	84	72	17	15*
neither important, nor unimportant	164	82	15	6
rather important	272	77	14	10
very important	275	79	20*	6*
M20_10. How important are luxury articles in surrounding?				
completely unimportant	70	82	16	10
rather unimportant	218	81	11*	10
neither important, nor unimportant	309	76	15	10
rather important	151	72*	20	9
very important	118	85	20	3*
M20_11. How important is a prestige in one's environment?				
completely unimportant	38	89	4*	8
rather unimportant	114	80	11	12
neither important, nor unimportant	243	78	15	8
rather important	306	76	15	11
very important	168	80	22*	4*
M20_12. How important are authority, political functions?				
completely unimportant	355	80	14	10
rather unimportant	233	77	14	10
neither important, nor unimportant	153	76	19	6
rather important	83	79	12	9
very important	45	81	28*	6

O3. Who should secure this free of charge access?

	number of persons	public television	private digital television broadcaster	I don't know, hard to say
<i>Base: persons who think that they should have a free of charge access ensured</i>				
Total	869	78	16	9
M20_13. How important are independence, self-dependence?				
completely unimportant	7	91	12	9
rather unimportant	26	88	6	6
neither important, nor unimportant	93	82	10	12
rather important	288	77	15	10
very important	454	78	18*	8
M20_14. How important is a realization of one's interests?				
completely unimportant	9	91	6	4
rather unimportant	37	74	19	12
neither important, nor unimportant	168	77	10*	14*
rather important	293	80	14	8
very important	361	78	19*	7

* The section distinctive (statistical importance 0.05)

O4. If you had no possibility to receive digital tv channels, would you consider purchase a pay access?

	number of persons	Yes - if monthly fee up to 20 pln	Yes - if monthly fee from 20 pln to 50 pln	Yes - even if the price exceeds 50 pln	I do not take under consideration purchase of an access to digital tv channels	I don't know, hard to say
<i>Base: all respondents</i>						
Total	1002	40	16	1	43	0
Sex						
man	479	41	19*	2	38*	0
female	523	40	14*	0	46*	0
Age						
15 - 19	86	42	23	0	35	0
20 - 29	199	41	25*	0	34*	0
30 - 39	166	36	19	2	43	0
40 - 49	163	43	17	1	40	0
50 - 59	177	44	11	2	43	0
60 +	212	37	7*	1	56*	0
Civil status						
unmarried	280	41	22*	0	37*	0
married/concubine	590	42	15	1	42	0
divorced/ separated	51	40	19	1	40	0
widow/widower	80	27*	4*	1	68*	0
Education						
primary school	246	38	11*	0	52*	0
secondary technical school	245	40	10*	1	49*	0
college and post-secondary school	368	42	22*	2	34*	0
licenciate and university degree	141	40	22	1	38	0
Occupational activity						
I'm professionally engaged	437	38	20*	2	39	0
I'm not professionally engaged	565	42	13*	0	45	0
Social and professional group						
managers/specialists	74	30	32*	2	36	0
private entrepreneurs	37	52	11	8	29	0
administration&services employyes	170	34	22*	3	42	0
workers	104	38	17	0	44	0
farmers	51	55*	12	0	33	0
housekeeper / I'm not professionally engaged, I keep house	38	57*	7	0	36	0
pensioners	279	39	8*	0	53*	0
pupils and students	148	42	24*	0	34*	0
unemployeed	100	45	12	0	43	0
Material status estimation						
good	238	34*	27*	3	36*	0
average	612	45*	14*	0	41	0
bad	151	33*	7*	1	59*	0
Household's income						
below 1250 PLN	112	36	10	0	54*	0
1250-1999 PLN	167	40	12	0	49	0
2000+ PLN	287	41	18	1	39	0
answer refused	435	41	18	1	40	0
Household's size						
1 - 2 persons	276	38	12*	2	48*	0
3 persons	219	38	21*	0	40	0
4 persons	256	38	20	1	41	0
5 + persons	250	47*	13	0	41	0
Children in household						
1 child	251	42	16	1	42	0
2 children	173	37	21	1	42	0
3 + children	58	52	12	0	36	0
no children	519	39	15	1	44	0
Major input in the household's budget						
respondent	404	40	15	2	42	0
someone else	596	40	16	0	43	0
Purchase decisions						
respondent	200	41	10*	1	47	0
mainly respondent, sometimes someone else	143	38	13	1	49	0
equally: respondent and someone else	253	39	19	1	41	0
mainly someone else, sometimes respondent	243	42	20	1	37	0
someone else	162	39	17	1	43	0

O4. If you had no possibility to receive digital tv channels, would you consider purchase a pay access?

	number of persons	Yes - if monthly fee up to 20 pin	Yes - if monthly fee from 20 pin to 50 pin	Yes - even if the price exceeds 50 pin	I do not take under consideration purchase of an access to digital tv channels	I don't know, hard to say
<i>Base: all respondents</i>						
Total	1002	40	16	1	43	0
Buying						
respondent	197	41	9*	1	49*	0
mainly respondent, sometimes someone else	164	41	16	1	42	0
equally: respondent and someone else	240	39	20	2	40	0
mainly someone else, sometimes respondent	246	40	19	0	40	0
someone else	153	41	16	1	43	0
Residence						
country	377	43	11*	0	47*	0
up to 20 000	130	41	14	1	44	0
20 – 100 000	196	40	22*	2	36*	0
100 – 500 000	178	42	22*	1	36*	0
500 000 +	121	31*	17	3	49	0
Region						
Northern	95	47	17	1	35	0
Eastern	174	44	15	0	41	0
Western	174	37	13	1	49	0
Central	241	41	11*	1	47	0
Southern	318	37	22*	2	39	0
M20_5. How important is high income?						
completely unimportant	8	7	0	0	93	0
rather unimportant	28	26	1	0	73*	0
neither important, nor unimportant	161	35	13	1	51*	0
rather important	390	39	20*	1	40	0
very important	413	45*	15	1	39*	0
M20_6. How important is a good job?						
completely unimportant	73	37	4*	2	58*	0
rather unimportant	41	30	4*	0	65*	1
neither important, nor unimportant	80	44	11	0	45	0
rather important	284	36	21*	1	42	0
very important	523	43*	17	1	39*	0
M20_8. How important is a professional career?						
completely unimportant	102	38	4*	1	57*	0
rather unimportant	96	33	14	0	52	1
neither important, nor unimportant	263	40	16	1	43	0
rather important	309	38	21*	1	40	0
very important	232	48*	16	0	35*	0
M20_9. How important is a competence development?						
completely unimportant	93	35	5*	1	58*	1
rather unimportant	96	42	8*	0	50	0
neither important, nor unimportant	202	37	10*	1	53*	0
rather important	309	39	26*	1	33*	0
very important	302	44	17	1	38	0
M20_10. How important are luxury articles in surrounding?						
completely unimportant	92	33	13	3	51	0
rather unimportant	239	40	15	0	44	0
neither important, nor unimportant	359	39	16	1	44	0
rather important	172	43	22*	1	34*	0
very important	137	43	13	2	42	0
M20_11. How important is a prestige in one's environment?						
completely unimportant	47	34	13	0	53	0
rather unimportant	131	32*	11	0	57*	0
neither important, nor unimportant	284	36	19	1	44	0
rather important	352	46*	17	2	35*	0
very important	187	42	15	1	42	0
M20_12. How important are authority, political functions?						
completely unimportant	413	38	14	1	46*	0
rather unimportant	262	41	18	1	40	0
neither important, nor unimportant	180	38	20	1	40	0
rather important	97	47	14	0	39	0
very important	50	45	12	2	40	0

O4. If you had no possibility to receive digital tv channels, would you consider purchase a pay access?

	number of persons	Yes - if monthly fee up to 20 pin	Yes - if monthly fee from 20 pin to 50 pin	Yes - even if the price exceeds 50 pin	I do not take under consideration purchase of an access to digital tv channels	I don't know, hard to say
<i>Base: all respondents</i>						
Total	1002	40	16	1	43	0
M20_13. How important are independence, self-dependence?						
completely unimportant	10	24	0	0	76	0
rather unimportant	36	10*	0	0	90*	0
neither important, nor unimportant	108	41	8*	0	51	0
rather important	324	46*	17	1	36*	0
very important	521	39	19*	1	41	0
M20_14. How important is a realization of one's interests?						
completely unimportant	11	31	4	0	64	0
rather unimportant	53	18*	5*	5	72*	0
neither important, nor unimportant	201	39	7*	0	55*	0
rather important	336	41	22*	0	37*	0
very important	402	43	18	2	37*	0

O5. With regard to coming sport and cultural events (Olympics Games in Beijing, Euro 2008, movie premieres), would you like to have a possibility to receive digital HD channels, at no great expense (i.e. up to 20 PLN)?

	number of persons	Yes %	No %	I don't know, hard to say %
<i>Base: all respondents</i>				
Total	1002	44	42	14
Sex				
man	479	52*	34*	15
female	523	37*	50*	13
Age				
15 – 19	86	74*	17*	8
20 – 29	199	55*	30*	15
30 – 39	166	44	42	14
40 – 49	163	43	42	16
50 – 59	177	37	50*	13
60 +	212	28*	59*	13
Civil status				
unmarried	280	59*	30*	11
married/concubine	590	41*	44	15
divorced/ separated	51	39	45	17
widow/widower	80	14*	75*	11
Education				
primary school	246	41	46	13
secondary technical school	245	43	42	14
college and post-secondary school	368	48	38	14
licenciate and university degree	141	40	46	14
Occupational activity				
I'm professionally engaged	437	46	39	14
I'm not professionally engaged	565	42	45	13
Social and professional group				
managers/specialists	74	43	43	14
private entrepreneurs	37	36	48	16
administration&services employees	170	48	35*	17
workers	104	49	36	15
farmers	51	48	46	6
housekeeper / I'm not professionally engaged, I keep house	38	37	39	24*
pensioners	279	29*	55*	15
pupils and students	148	62*	30*	8*
unemployeed	100	49	40	11
Material status estimation				
good	238	52*	37	12
average	612	45	40*	15*
bad	151	28*	62*	9
Household's income				
below 1250 PLN	112	36	57*	7*
1250-1999 PLN	167	34*	58*	8*
2000+ PLN	287	46	42	12
answer refused	435	49*	33*	19*
Household's size				
1 – 2 persons	276	34*	53*	14
3 persons	219	47	39	14
4 persons	256	49	34*	17
5 + persons	250	48	43	9*
Children in household				
1 child	251	44	40	16
2 children	173	54*	30*	16
3 + children	58	41	53	7
no children	519	41	46*	12
Major input in the household's budget				
respondent	404	40*	44	16*
someone else	596	47*	41	12*
Purchase decisions				
respondent	200	32*	56*	12
mainly respondent, sometimes someone else	143	29*	53*	18
equally: respondent and someone else	253	50*	37*	13
mainly someone else, sometimes respondent	243	56*	34*	11
someone else	162	46	38	16

* The section distinctive (statistical importance 0.05)

05. With regard to coming sport and cultural events (Olympics Games in Beijing, Euro 2008, movie premieres), would you like to have a possibility to receive digital HD channels, at no great expense (i.e. up to 20 PLN)?

	number of persons	% Yes	% No	% I don't know, hard to say
<i>Base: all respondents</i>				
Total	1002	44	42	14
Buying				
respondent	197	33*	55*	13
mainly respondent, sometimes someone else	164	37	48	15
equally: respondent and someone else	240	45	39	16
mainly someone else, sometimes respondent	246	55*	36*	9*
someone else	153	46	36	18
Residence				
country	377	40*	45	15
up to 20 000	130	39	42	19
20 – 100 000	196	48	37	15
100 – 500 000	178	54*	39	7*
500 000 +	121	40	48	11
Region				
Northern	95	53	33*	14
Eastern	174	41	47	12
Western	174	38	53*	10
Central	241	46	43	11
Southern	318	45	37*	18*
M20_5. How important is high income?				
completely unimportant	8	0	93	7
rather unimportant	28	20*	69*	11
neither important, nor unimportant	161	29*	57*	14
rather important	390	42	42	16*
very important	413	55*	34*	11
M20_6. How important is a good job?				
completely unimportant	73	20*	68*	12
rather unimportant	41	16*	59*	25*
neither important, nor unimportant	80	31*	52	17
rather important	284	40	42	18*
very important	523	53*	36*	10*
M20_8. How important is a professional career?				
completely unimportant	102	19*	63*	18
rather unimportant	96	31*	59*	10
neither important, nor unimportant	263	42	43	14
rather important	309	45	39	17
very important	232	62*	30*	8*
M20_9. How important is a competence development?				
completely unimportant	93	19*	66*	15
rather unimportant	96	35	50	15
neither important, nor unimportant	202	37*	47	16
rather important	309	47	35*	17*
very important	302	56*	37*	8*
M20_10. How important are luxury articles in surrounding?				
completely unimportant	92	39	53*	9
rather unimportant	239	44	43	13
neither important, nor unimportant	359	39*	47*	14
rather important	172	53*	33*	14
very important	137	48	35	17
M20_11. How important is a prestige in one's environment?				
completely unimportant	47	34	52	14
rather unimportant	131	31*	53*	16
neither important, nor unimportant	284	39	45	16
rather important	352	53*	36*	11
very important	187	47	41	12
M20_12. How important are authority, political functions?				
completely unimportant	413	43	45	12
rather unimportant	262	42	43	14
neither important, nor unimportant	180	49	36	15
rather important	97	45	38	17
very important	50	41	49	10

O5. With regard to coming sport and cultural events (Olympics Games in Beijing, Euro 2008, movie premieres), would you like to have a possibility to receive digital HD channels, at no great expense (i.e. up to 20 PLN)?

	number of persons	%		
		Yes	No	I don't know, hard to say
<i>Base: all respondents</i>				
Total	1002	44	42	14
M20_13. How important are independence, self-dependence?				
completely unimportant	10	6	64	30
rather unimportant	36	12*	69*	19
neither important, nor unimportant	108	33*	42	25*
rather important	324	39*	44	17*
very important	521	52*	39*	9*
M20_14. How important is a realization of one's interests?				
completely unimportant	11	18	66	16
rather unimportant	53	20*	61*	19
neither important, nor unimportant	201	25*	56*	19*
rather important	336	43	42	15
very important	402	59*	33*	8*

* The section distinctive (statistical importance 0.05)









