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1. Objective and procedure

The objective of this deliverable is to support the selection of representative television (TV) sets placed on the European market for the CompliantTV compliance tests.

Important note: Please note that this deliverable has a scope limited to TV sets, although it was the initial purpose of CompliantTV to cover TV sets and TV monitors. The current legislative framework for televisions (Regulation (EU) No 642/2009 on Ecodesign requirements for televisions and Regulation (EU) No 1062/2010 on energy labelling of televisions) indeed differentiates between television sets and television monitors. The TV monitor category, as defined in the regulations, focuses on specialised monitors that are mainly used in broadcast stations and video editing stations with a low market share. CompliantTV could not identify such products during the market analysis for consumer products, presented in this document. CompliantTV understands TV sets as a product whose primary function is to receive and display audio-visual signals. It consists of a display and at least one integrated tuner unit. Display products without an integrated tuner are not defined as a TV set.

This deliverable reports a market analysis aiming at identifying the types and brands of TVs, which are currently offered and purchased in the European market. The subsequent market analysis will not only address technical aspects of the products on the market, but also intends to provide a more differentiated picture of the TV market by distinguishing between a “representative market” and the “full spectrum of the market”. This includes an assessment of:

- The brand classification;
- Representative products having the largest European market share in terms of unit sales (bestsellers). Market statistics typically differentiate between the market share of individual manufacturers, display technologies and screen size. Only a handful of known brands dominate the European market – both in terms of monetary value and unit sales. The table below contains a list of brands, which will be called “A-brands” in the context of the CompliantTV project, and represent the main manufacturers on the EU market based on their market shares;

Table 1: TV brands classified as A-brands under the CompliantTV project

A- Brand
Samsung
LGE
Sony
Toshiba
Panasonic
Philips
Thomson
TCL

- The full spectrum of products covering the entire market including all manufacturers (and distribution channels);



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The objective of CompliantTV is to cover not only the representative market or the bestselling products but the full spectrum of TVs available on the market. For each device investigated in order to represent the full spectrum of products, the compliance will be assessed. Therefore, the diversity of products sold in the European market has to be taken into account. This diversity can be defined by the following product criteria:

- The manufacturer or brand names;
- The display technology;
- The display size or typical size segments;
- The year that the product was put on the market; and
- The declared energy efficiency class;

The subsequent market analysis has been based on two major information sources:

- Publicly available data from specialised market research institutions. An online research provided viable information from various sources including GfK, NPD DisplaySearch, Statista, and IHS/ Displaybank. Most comprehensive market data have been available for the years 2011 and 2012. With respect to the geographic scope, the majority of data is available for the global market, Western Europe or individual Member States (MS). Specific information for EU-27 is hardly available. More recent (2013) market information derives from press releases and describes the market only anecdotally.
- In order to confirm the available market data from market research institutions, the TUB conducted its own online survey based on the European “Amazon” online shops. The online shop “Amazon” sells TVs and provides national portals in Germany, France, United Kingdom, Spain, and Italy (amongst others). The Top 100 bestselling TVs were investigated for various countries.
- The “Amazon” survey was extended by an online survey on the price comparison portal “Geizhals” from AEA addressing the EU-27 market. The major market share is driven by Germany, Austria and Poland.

The market analysis and subsequent selection of TVs will focus on products that are currently available and have been put on the European market during the years 2012-2013.

2. Market data and trends

The first step of the market analysis has been to assess brand classification and publicly available market data.

2.1. Classifying Brands

The American Marketing Association¹ defines “Brand” as “a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers”. But a brand can also be seen as a ‘promise of an experience’ and convey to consumers a certain assurance as to the nature of the product or service they will receive and also the standards the supplier or manufacturer seeks to maintain.

Grouping brands is difficult as borders are not clear-cut and vary by region and/or over time. In different markets or at points in time, a brand could have a different brand classification. But the following categories of brands can be identified:

- The so-called “value or global brands” consist of the companies that sell internationally, have gained a recognition for quality, sell multiple product lines, and make many of their own products. This group essentially breaks down as the big four (Samsung, Sony, LG and Panasonic), plus a few “fringe players”, such as Toshiba or, Philips on the EU market. These brands have strong brand awareness and they are selling on a price-performance perception.
- The premium names and niche products distinguishing themselves with stylish design or unusual features include Bang & Olufsen, BOSE and Loewe. Targeting high-end customers, the market penetration of these niche products is lower by definition.
- The second-tier brands are those owned by parents and have a long established place in the market, like Magnavox (Funai/Philips), RCA (TCL), and Zenith (LG). They would also include Hisense, TCL or Thomson, though Hisense and TCL are market leaders in China. In addition, generic brand TV manufacturers might change their strategy and start offering high end TVs. For example, the Chinese companies Hisense and TCL decided to offer high-end HDTVs in the US².
- The big retail brands often have their own retail brands, such as Tesco (Technika). These brands are very competitive regarding price.
- Finally, there are the third-tier or less known brands of companies that source components from outside manufacturers, and that are basically marketers and assemblers of components. The brands Nevir, Odys, Reflexion and Sunstech for example, fall into this category.

¹ Available at: <https://www.ama.org/Pages/default.aspx>

² Available at: <http://dealnews.com/features/TCL-Hisense-Aim-to-Challenge-High-End-TV-Brands-Offer-Cheap-Ultra-HD/675095.html>

2.1.1. Market data and trends

The graph below shows the global market share held by LCD TV manufacturers from 2008 to 2013³. As LCD is the dominating technology in this time frame with Plasma and CRT being phased out, the data of brands below can be seen as representative for the global market. The market data shows the dominance of two large Korean manufacturers as well as the expansion of Chinese manufacturers and the appearance of AOC/TP Vision and Skyworth in 2012 in the global market. The share of shipments of Sony, Toshiba and Sharp is declining between 2008 and 2013. And so is the share of the group of “other manufacturers”.

The Chinese companies Hisense and Skyworth are major players in China. Both companies are trying to enter the European market, although their current market penetration in Europe is rather low. Other brands such as Hitachi and Hannspree have withdrawn from the TV business.

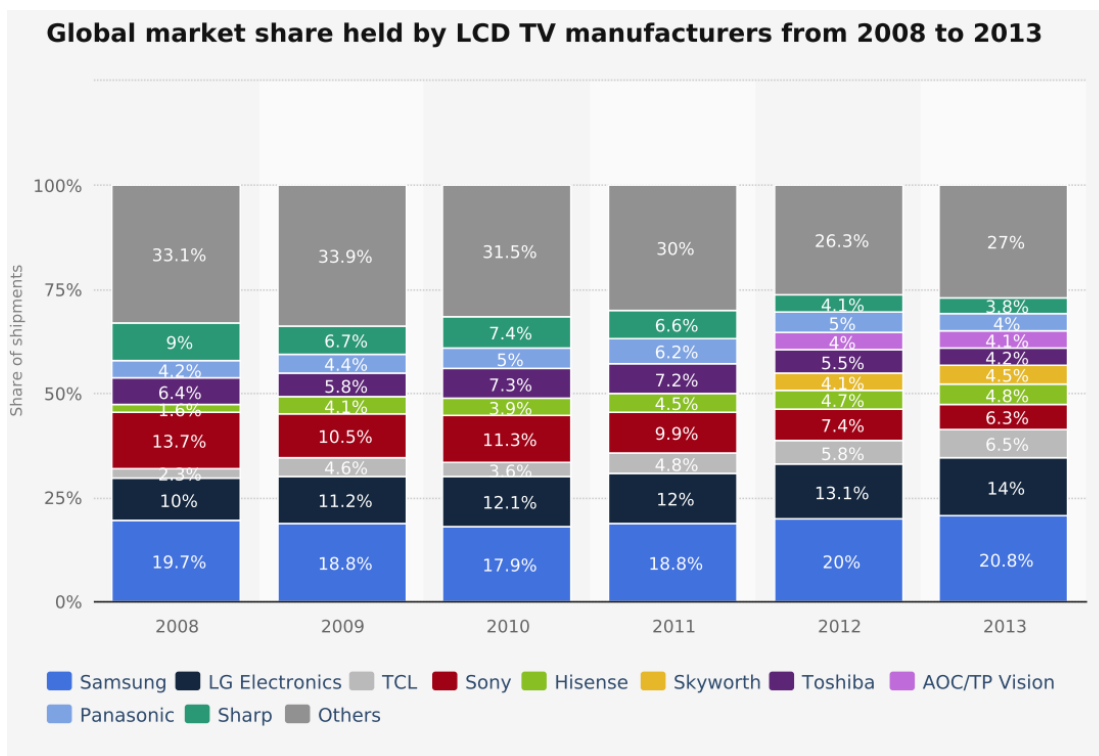


Figure 1: Global market share of LCD TV manufacturers from 2008 and 2013 (Source: Statista, 2014)

³ Available at: <http://www.statista.com/statistics/271807/global-market-share-held-by-leading-flat-panel-tv-brands/>

2.1.2. Share of brands of the European TV market

The European market is dominated by large Korean and Japanese brands (Samsung, LG, Sony, Panasonic, Toshiba, and Sharp) with the addition of one brand of European origin, Philips, which is licensed to the Taiwanese company TP-Vision. The European brand Thomson is licenced to TCL, which also sells TVs under its own brand name. Chinese brands such as Medion (Lenovo) and Turkish companies such as Beko or Vestel are doing some business for instance via retail brands. In addition, there is a range of smaller brands operated by TV assemblers, traders, or retailers such as Odys or Nevir. The German market has a number of local companies – Loewe and Metz – that offer "Made in Germany" sets that are at the premium end of that market. The Danish firm Bang & Olufsen and the US company BOSE have a very high-end niche presence as well.

In the absence of publicly available sales data and in order to get a better understanding of the European market, CompliantTV used Idealo’s user data from more than 8 million clicks across four European online markets (United Kingdom, France, Germany and Italy) on TV preferences of consumers between Q4 2011 and Q4 2012. The Idealo statistics⁴ show that Samsung, Philips, LG, Sony and Panasonic accounted for 84.7% of the total clicks (see Figure 2). Thus, more than 84% of the European TV market seems to be covered by the mentioned brands. Similar data has been found in other data sources (see Annex 3.1.2).

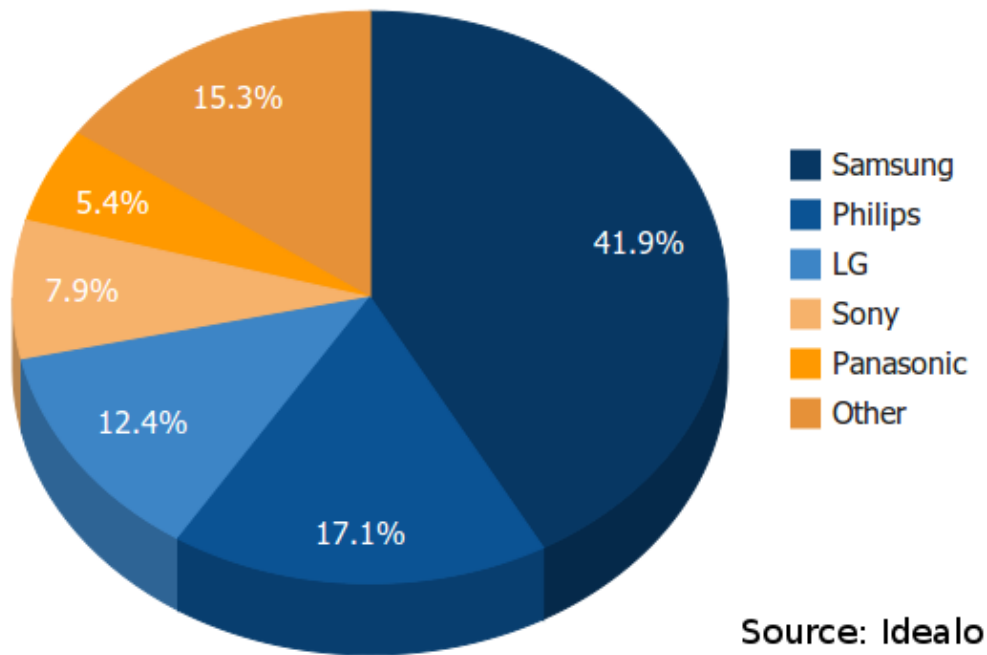


Figure 2: Click distribution by LCD-TV manufacturer (Q4 2011-Q4 2012) (Source: Idealo, 2013)

⁴ Available at: <http://blog.idealo.co.uk/samsung-42percent-of-tv-market-2507.html> The market share on Idealo measured as a percentage proportion of clicks

2.2. Display technology and resolution

According to NPD DisplaySearch (Advanced Quarterly Global TV Shipment and Forecast Report, 2012), the global TV market (unit sales in 3Q12) was distributed as follows:

- 88.0% LCD (Liquid Crystal Display) TVs (all types);
- 5.7% Plasma TVs; and
- 6.3% CRT (Cathode Ray Tube) TVs.

According to GfK, the European TV market (unit sales in Q1 2012) was largely dominated by LCD technology with an average market share of 94%. The rest (6%) corresponds to Plasma (PDP – Plasma Display Panel) TVs. Only an insignificant number of CRT TVs were sold.

According to a forecast of the Market Intelligence & Consulting Institute (MIC), the share of globally shipped LCD LED TVs will increase from about 66% in 2012 to 82% in 2013⁵. In 2014, the market share of LED TVs is expected to surpass 90%. In accordance with the information provided by the project partner DigitalEurope, LCD with CCFL-backlit (Cold cathode fluorescent lamp) will phase out and LCD LED TVs will become the standard display technology in the European market already in 2013.

OLED (Organic Light-Emitting Diode) displays have been maturing rather slowly and the first moderate sales started in 2014.

The European market is also adopting the display resolution 1920 × 1080 pixels of Full-HD (1080p) with some HD-ready (720p) products still on the market in smaller display size segments. The increasing market penetration of LED technology with 3D capability (about 30% of total TV unit shipments are already 3D) is pushing enhanced resolutions such as 3840 × 2160 pixels or Quad Full-HD (2130p) into the market. The trend goes to even higher resolution of 4096 × 2304 pixels or 4K × 2K.

2.3. Display size and aspect ratio

GfK provides in a publicly available presentation (Dubrovnik, April 2012)⁶ a detailed breakdown of TV sales in Europe in 2011 with respect to the unit sales and the sales value (slides 12 and 13). In the same presentation (slide 17), GfK provides a detailed unit sales analysis for 13 European states reflecting market shares in terms of the various display size segments (see Figure 3).

⁵ Available at: http://mic.iii.org.tw/english/press/en_5_press_room_1_1.asp?selyear5=&doc_sqno=9249

⁶ Available at: <http://gpc.ifa-berlin.com/>

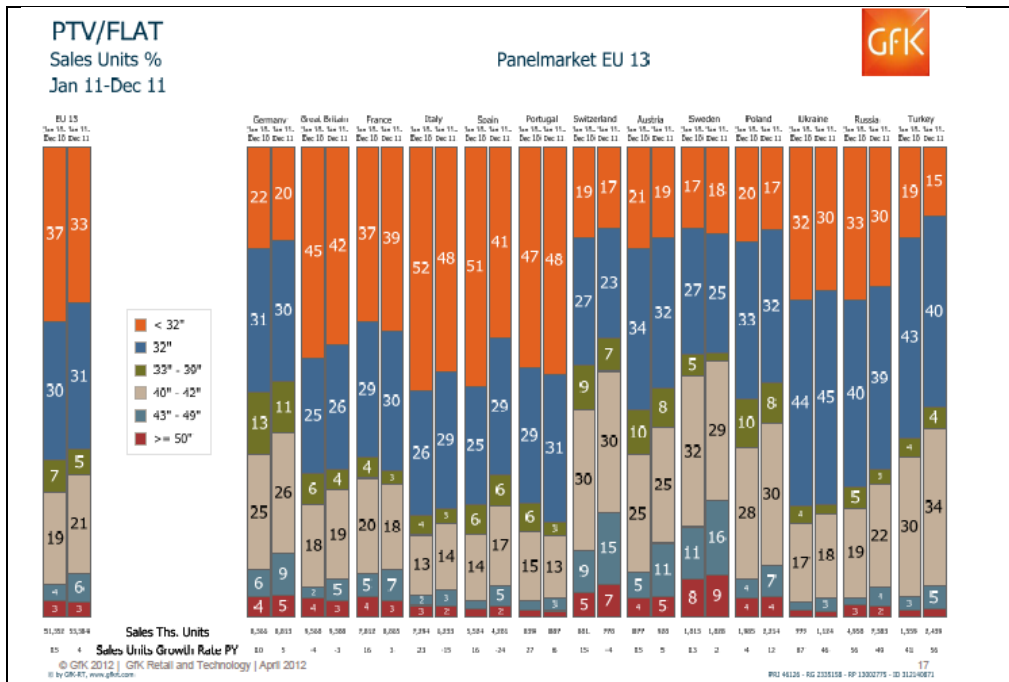


Figure 3: 2011 Flat Panel TV Market EU-13 (Source: GfK, 2012)

The given data indicates the considerable differences in terms of TV unit sales in the individual EU Member States (MS). Furthermore, it shows that the customers buy the full range of products with more than 60% of unit sales having a display size 32" and smaller, and only 10% having a display size >42". The comparison between the sales in 2010 and 2011 confirms a general shift towards medium size and larger displays (>32") across the whole European market.

This general trend towards larger sized TV displays continues and can be observed particularly in the economically stronger EU MS. Another reason for the increasing sales of large screen devices is the decrease in price and the fact that early-adopting flat panel TV consumers re-enter the market for an upgrade. The share of TV shipments for 50" and larger screen sizes is expected to jump from 6.5% in 2011 to 7.7% in 2012 and reach 10% by 2015.⁷

The main panel manufacturers from Korea, Japan, Taiwan and China are launching many new LCD TV panel sizes including 28", 29", 39", 50", 58", 60", and 65"⁸. On the market, we observe a full range of display sizes:

- small 16" and 19" TV (typically found in hotels);
- 22" to 26" (typically fair priced segment);
- a very strong and bestselling market segment 32";
- a declining segment of 33" to 40";

⁷ Available at: http://www.displaysearch.com/cps/rde/xchg/displaysearch/hs.xsl/120710_lcd_tv_forecast_lowered_to_216_units_solid_growth_still_expected.asp

⁸ Available at: <http://www.displaysearchblog.com/2013/03/why-are-chinese-lcd-tv-makers-demanding-more-panels/>



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- a very strong and bestselling market segment 42" (43");
- an increasing segment from 46" to 50", and
- a luxury class segment >50".

Driven by the shift from standard resolution to high definition resolution, the aspect ratio is changing as well from 4:3 (720 x 576 pixels) to 16:9 (1920 x 1080 pixels) to 21:9 (2560 x 1080 pixels).

The average panel price is rather decreasing and the product price is influenced by the connectivity features and "smart" applications.

2.4. Smart / Connected TV

Independently from the core technologies and display specifications, the global TV market is shifting towards the next generation of "smart or connected TVs". Most manufacturers are launching smart TVs that allow access to the internet and interactive service platforms. According to 6Wresearch, the global smart TV market is expected to ship 198.2 million smart TVs by 2017, growing at a CAGR of 20.8% from 2012-2017⁹.

⁹ Available at: <http://www.prweb.com/releases/prweb2012/10/prweb10041987.htm>

3. ANNEX

3.1. Market research based on Amazon Top 100

In order to confirm the available market data, the TUB conducted its own online research based on the Amazon online shop. Although online sales represent only 7.2% of the overall European retail business in 2014¹⁰, their share is growing. Amazon is with about 9.8% the undisputed online market leader in Europe.¹¹ The Top100 lists are a proper indicator for an analysis of the European TV market. For comparison reasons, AEA conducted an online research based on the price comparison website Geizhals (www.geizhals.eu). Geizhals is one of the major price comparison websites for electronics in Europe and gives therefore a reliable overview of the market shares.

3.1.1. Data collection and aggregation

The data collection was performed on May 13th 2013 from 2:00 pm to 4:00 pm and included the TOP 100 list of the following five national online shop portals:¹²

- www.amazon.co.uk
- www.amazon.de
- www.amazon.es
- www.amazon.fr
- www.amazon.it

From the five national Top 100 lists, all portable (battery powered) TVs and TV related products including remote controls, wall mounting structures, display protection foils, etc. were excluded. Through this step, the original list of 500 TV items was reduced to a total of 476 TVs. These 476 TVs included products launched between 2010 and 2013. Furthermore, identical products were listed multiple times on the different national websites.

Next, all TVs that have been placed on the websites before 2012 were eliminated in order to model the most recent market, and also because only models published after November 2012 have to display the energy label. Additionally, products that were still listed but not available anymore were removed. Through this procedure a total number of 437 TVs were obtained including multiple listings. This list of 437 TVs is to some extent a representative bestseller list for the European market (EU-5).

In order to get an overview on the actual products, the TVs that were listed multiple times were exempted. By removing these multiple listings, the list ended up with a total of 290 different TVs (all sizes, technologies, and configurations). A review of the 290 TVs showed that most brand manufacturers including Samsung, LGE, Sony, Panasonic, Philips, Toshiba, Thomson (TCL), Grundig (BEKO), TCL, Loewe, Medion (Lenovo) as well as products from Vestel (Telefunken and Finlux) were

¹⁰ <http://www.marketingcharts.com/online/estimated-e-commerce-share-of-total-2014-retail-sales-us-and-europe-41500/>

¹¹ <http://www.mintel.com/blog/retail-market-news/amazon-dominates-online-electrical-goods-retailing-in-europe;>
<http://www.ecommerce-europe.eu/news/2013/08/european-online-retail-sales-will-double-to-323-billion-in-2018>

¹² It has to be regarded that the Amazon Top100 lists are live data, instantly updated. Therefore the analysed lists are snapshots with defined time stamp.

present in the list. However, one of the main global manufacturers, Sharp, was not present in the Amazon survey. The survey from other EU countries (Austria, Switzerland and Poland) includes Sharp as referenced in Figure 9. It seems that Sharp has a relevant market share only in specific countries.

3.1.2. Data analysis

The following analysis of the Amazon Top 100 list is based on the list of 437 TVs, which includes multiple listings. The reason for using this list for the market analysis and not the 290 TVs list (without multiple listings) is as follows: the multiple listings indicate a bestseller list across the covered EU-5 market, in terms of unit sales. This list is therefore more representative for actual sold products.

The subsequent data analysis focuses on four aspects:

- The market share of the display technology,
- The market share of typical screen size segments,
- The market share of brands / manufacturers, and
- The share of products put on the market in 2012 and 2013, respectively.

The first analysis is addressing the market share of display technologies including LCD CCFL, LCD LED and Plasma. The listing does not include the old technology CRT as well as the new technology OLED. The shares of the individual display technologies are shown in Figure 4. With a share of 92% the new LED displays are the dominant technology. CCFL and Plasma account for about 4% each.

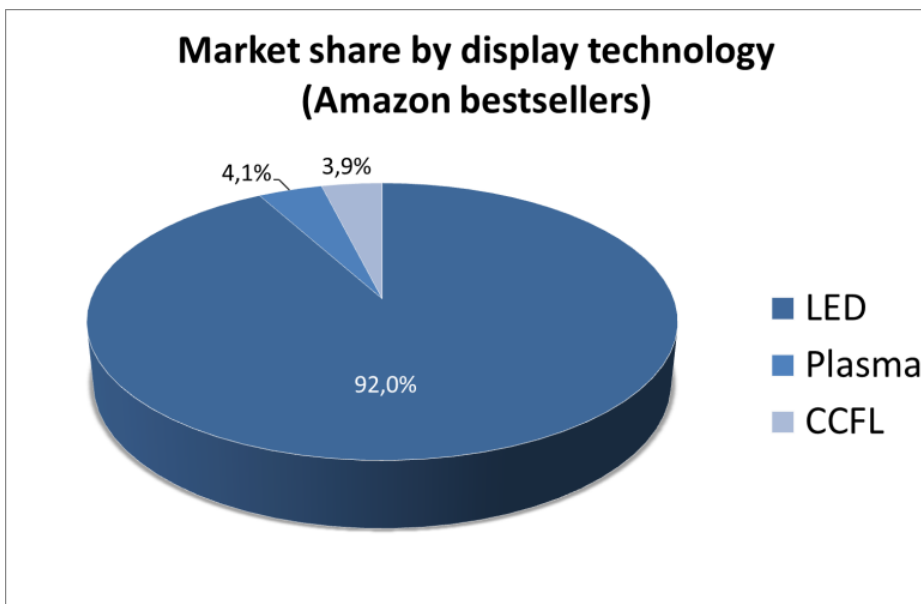


Figure 4: Market share by display technology in 2013 (Source: Amazon, 2013)

The analysis of geizhals.eu shows similar results but the market share of CCFL is bigger compared to Amazon. The reason is that geizhals.eu data contains all available models on the market and there are still a lot of discontinued models with CCFL technology available.

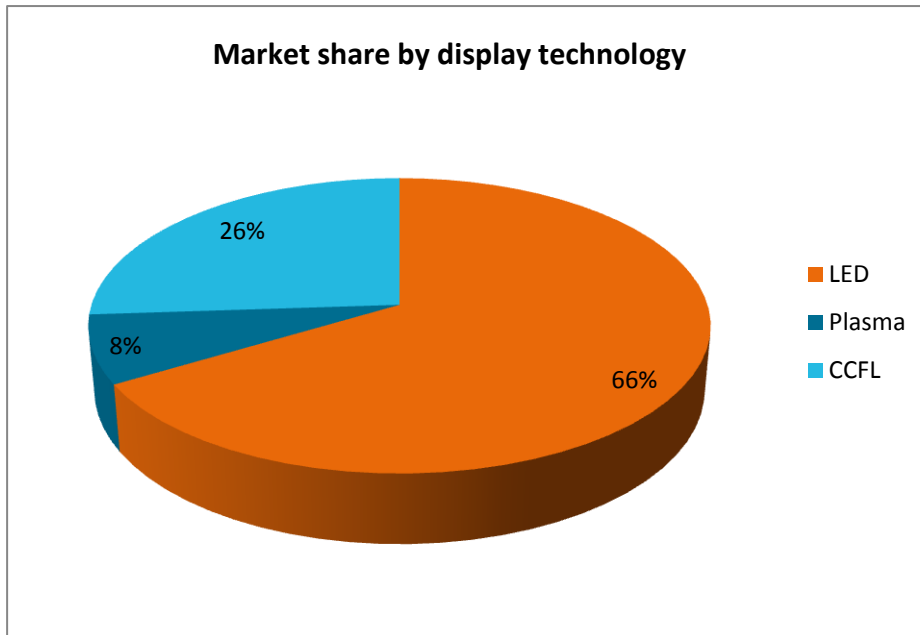


Figure 5: Market share by display technology (Source: Geizhals, 2013)

The second analysis addresses the market share of typical screen size segments. For this study, based on typical market reports, the segments <32", 32", 33"- 42" and >42" were distinguished. The results are shown in Figure 6.

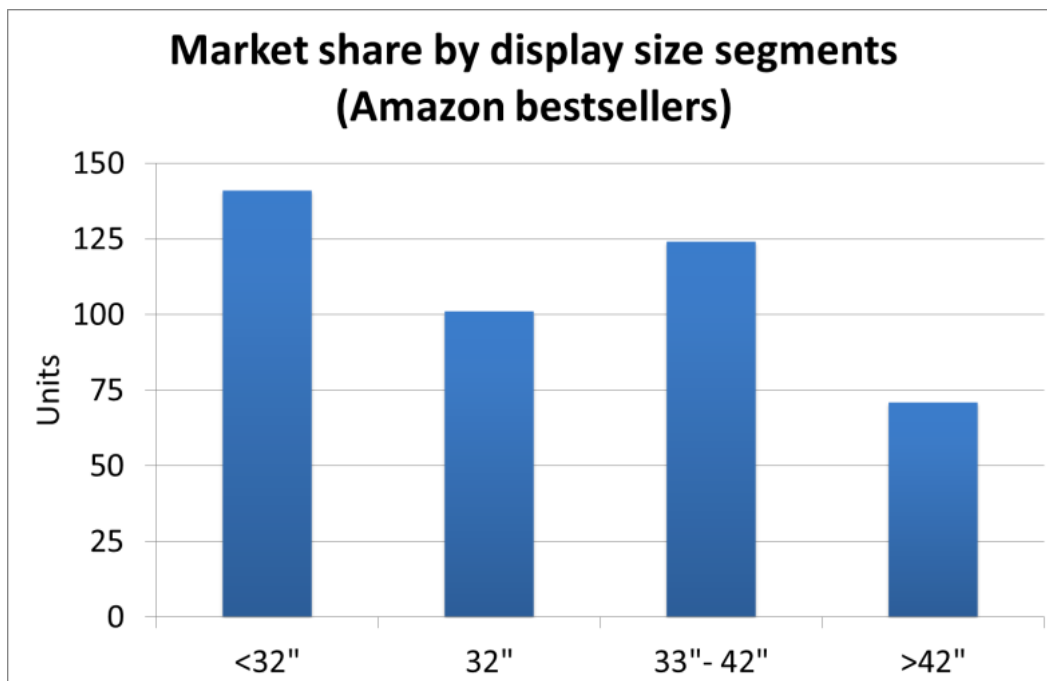


Figure 6: Market share by display size segments (Source: Amazon, n.d.)

A direct comparison of the Amazon data with the GfK data (EU-13) for the year 2011 reveals (see **Chyba! Nenalezen zdroj odkazů.**) the following points:

The smaller display sizes <32" are still very popular and have, with about 32%, a similar market share in 2011 and 2013. In the 32" segment, the Amazon bestseller list suggests a decrease of this market segment in favour of larger screen sizes. This development over the past two years seems to be realistic due to the declining prices for medium and large size TVs. In light of these data and in line with current market forecasts, it is justified to conclude that the display size segments <32" and 32" have gradually decreasing market shares.

Compared to the larger display size segments, the share of the 33" to 42" segment is only slightly increasing (26% in 2011 to 28% in 2013), while the share of >42" segment is clearly increasing (10% in 2011 to 17% in 2013). The analysis of the geizhals.eu data confirmed these findings but the market share of the >42" segment is clearly higher compared to Amazon. Although this market analysis based on the Amazon bestseller list is simple and not fully comprehensive, it is still useful and indicative.

The last column "study" refers to the project CompliantTV. For the purpose of this study, an even market distribution (25%) is assumed, which reflects to some extent the actual market according to the available data on the one hand and indicates the identified market trends on the other hand.

Display Size (Inch)	Unit Sales Market Share 2011* (%)	Amazon Sales Market Share 2Q13 (%)	Market Share Assumption for Study (%)
< 32"	33	32	25
32"	31	23	25
33" to 42"	26	28	25
> 42"	10	17	25
Total	100	100	100
	*GfK data		

Table 2: Market share by display size segments (Source: GfK, 2011 and Amazon, 2013)

The market share by display size based on geizhals.eu data is shown in the Figure 7 below.

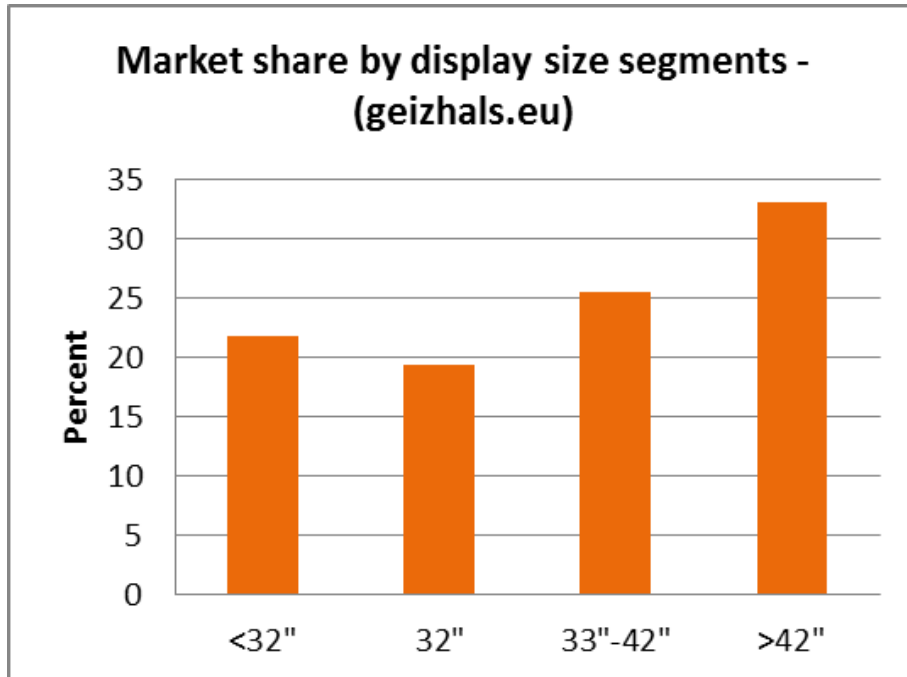


Figure 7: Market share by display size in 2013 (Source: Geizhals, 2013)

The market share by manufacturers or brands is shown in Figure 8 below.

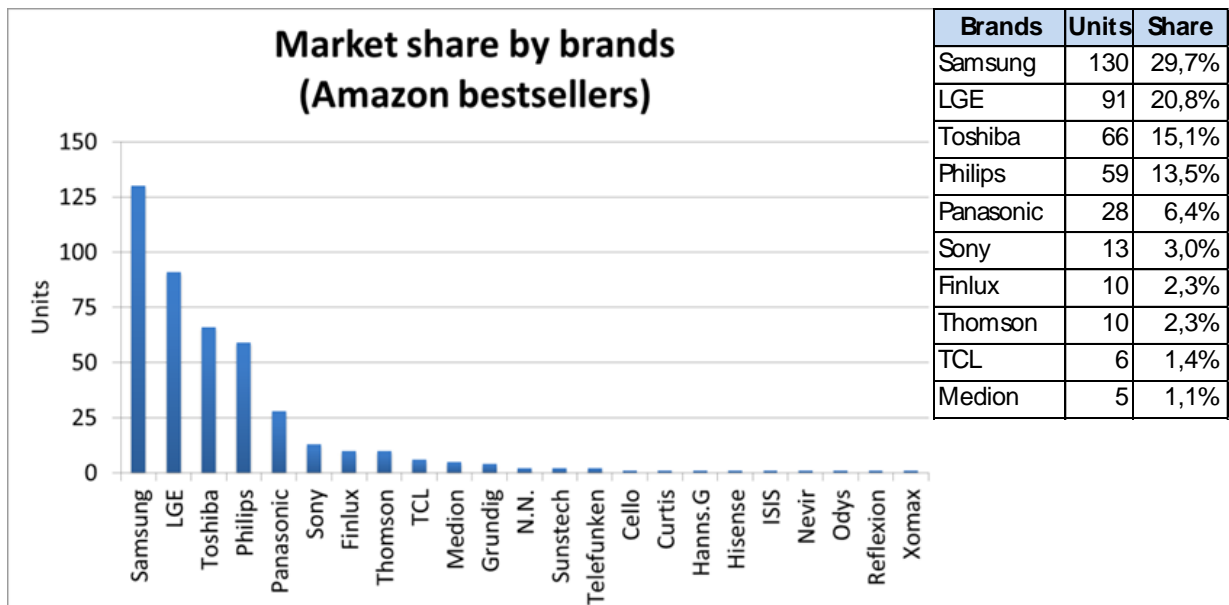


Figure 8: Market share by brands in units (Source: Amazon, n.d.)

The first observation was that the two leading Korean manufacturers Samsung and LGE are also dominating the Amazon bestseller list. The information from the different market research institutions suggested market shares of about 25% for Samsung and 14% for LGE. The Amazon list indicates a market share of almost 30% for Samsung and 20% for LGE. Keeping in mind that the Amazon list does not contain certain manufacturers such as Sharp and has multiple listings of the same product; it seems justified to say that the Amazon bestseller list reflects the actual market situation quite well.

The further distribution shows that Toshiba and Philips have market shares of approximately 15%. The relative strong position of Toshiba (e.g. in comparison with Sony), might have to do with the distribution channels, which both companies use. The IHS/Displaybank Worldwide Monthly TV Tracker August 2012 ranks Toshiba in fifth place under the top five LCD-TV manufacturers with a market share of 5.8%. The high position of Philips is also not surprising due to the quality image of this European company. The market share of Panasonic and Sony reflects to some extent their global market share with about 3% to 6%.

The brands with a market share of more than 1% are Finlux (Vestel), Thomson (TCL), TCL and Medion (Lenovo). TCL has together with its own brand and with Thomson an accumulated European market share of 3.75% according to the Amazon bestseller list. The remaining list of products shows multiple small players including a few Chinese companies and European assemblers.

Compared to Amazon, the geizhals.eu data shows a higher market share of Grundig, Sharp, Loewe and Thomson TVs (see Figure 9).



Figure 9: EU market share by brands in 2013 (Source: Geizhals, 2013)

Finally, the market development between 2012 and 2013 was investigated. Figure 10 shows the distribution of listed products by the year of market introduction. It comes as no surprise that products from 2012 still dominate the market with over 72% of the overall bestseller list followed by products from 2013 with 26% and products from 2011 with only 2%.

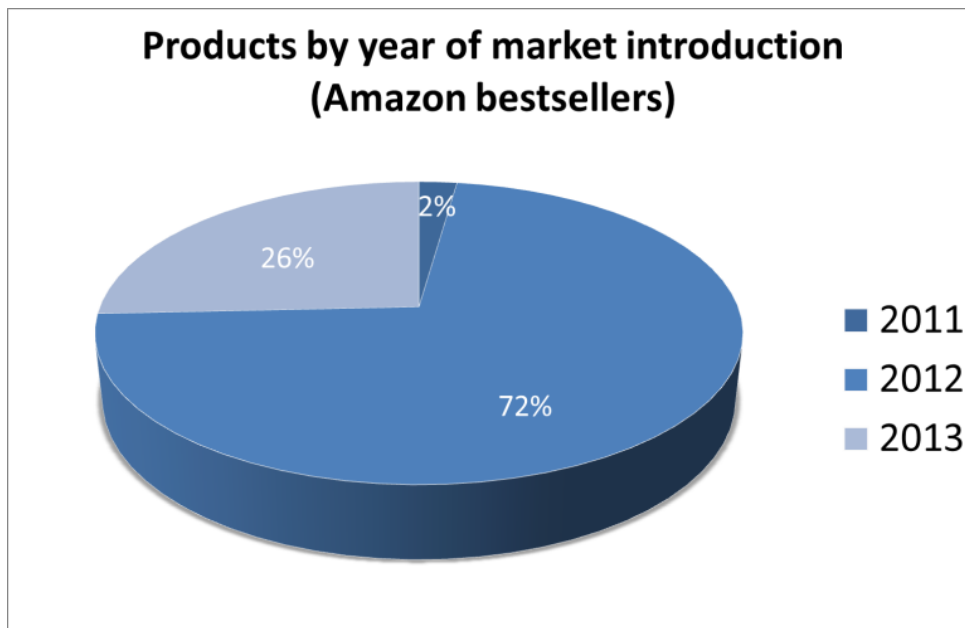


Figure 10: Products by year of market introduction (Source: Amazon, n.d.)

An interesting comparison is the average sales price development. **Chyba! Nenalezen zdroj odkazů.** Table 3 shows the available data. According to the Amazon bestseller list, the average sale price for TVs of the <32" size segment decreased from 210 € to 201 € in 2013. The average sale price for TVs >42" also decreased by about 19 € reaching 850 € in 2013. On the contrary, the average sale price of TVs of 32", 33" and 42" size segments increased considerably from 2012 to 2013 (Table 3). This development might indicate the increasing sales of new Full-HD, 3D capable and interactive smart TVs.

Average Product Price (in €)			
Display size	2012	2013	Balance
<32"	210	201	-9
32"	342	369	27
33" - 42"	536	595	59
>42"	869	850	-19

Table 3: Average product price development (Source: Amazon, 2013)

3.2. Market research for specific countries

3.2.1. Austria

The data for Austria was taken from geizhals.at. The results are similar to the results of the EU-5. As already mentioned before, the higher market share of the CCFL technology is based on the fact that geizhals.at data contains all available models on the market and there are still a lot of discontinued models with CCFL technology available.

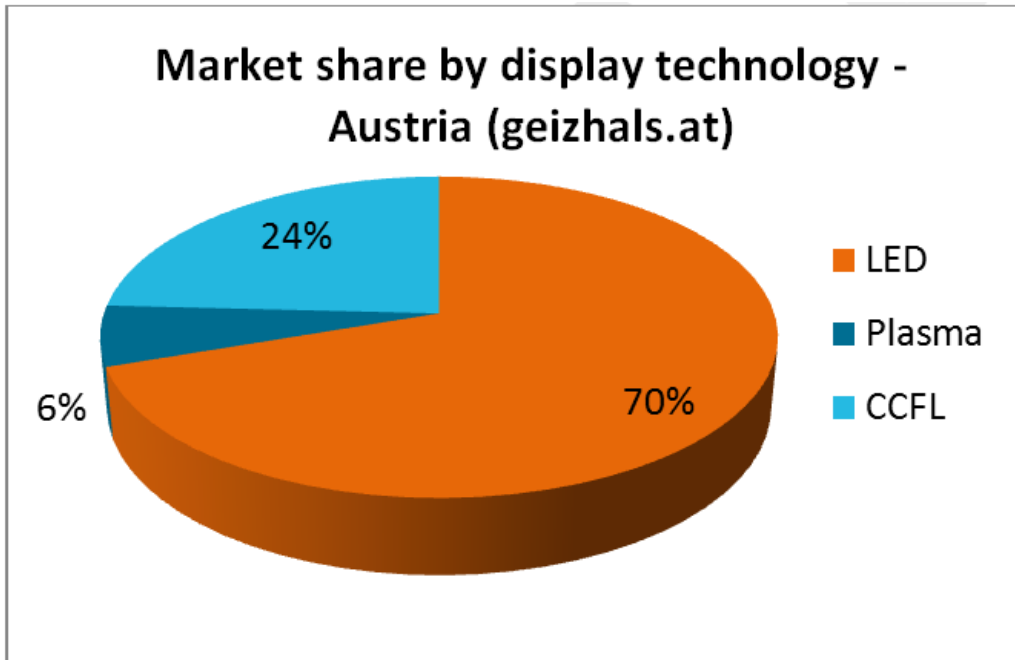


Figure 11: Market share by display technology in Austria in 2013 (Source: Geizhals, 2013)

The market share by display size in Austria is shown in Figure 12. There are no deviations to the results of geizhals.eu.

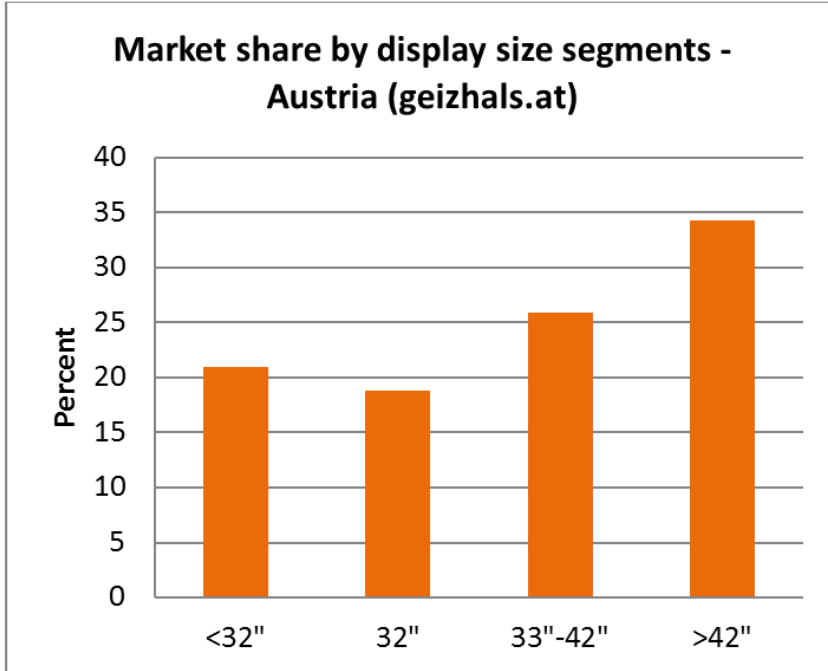


Figure 12: Market share by screen size in Austria in 2013 (Source: Geizhals, 2013)

The results of the market share by brands in Austria (shown in Figure 13) are comparable with the results of the analysis of geizhals.eu. The comparison with the market shares from Amazon (EU-5) nonetheless shows significant differences for Samsung und Toshiba.

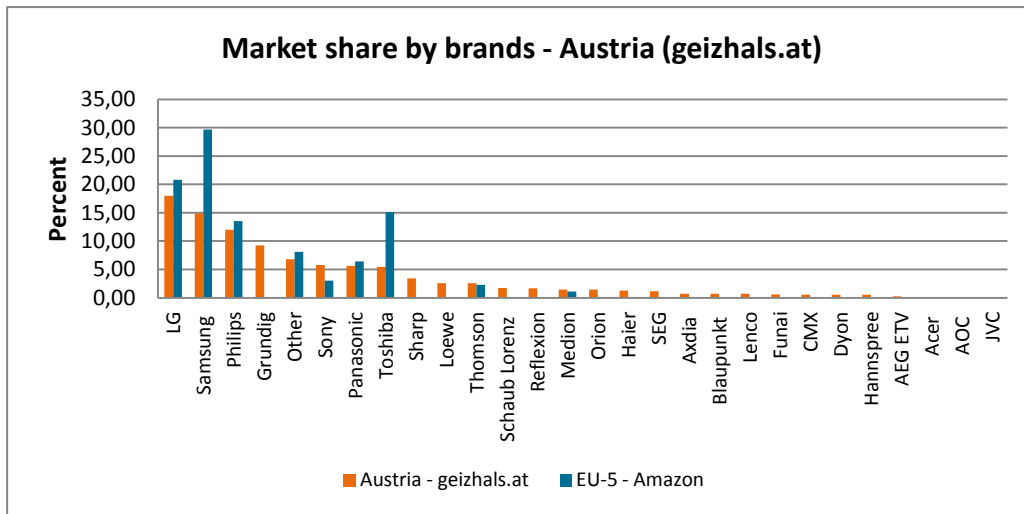


Figure 13: Market share by brands in Austria (Source: Geizhals, n.d.)

3.2.2. Switzerland

The data for Switzerland was extracted from the database <http://db.energybrain.ch> (Swiss Energy Agency for electric appliances). In general, the results are comparable with the results for the EU-5, except some slight deviations. The analysis of the display technology (see Figure 14 below) shows a very small market share of the old CCFL technology.

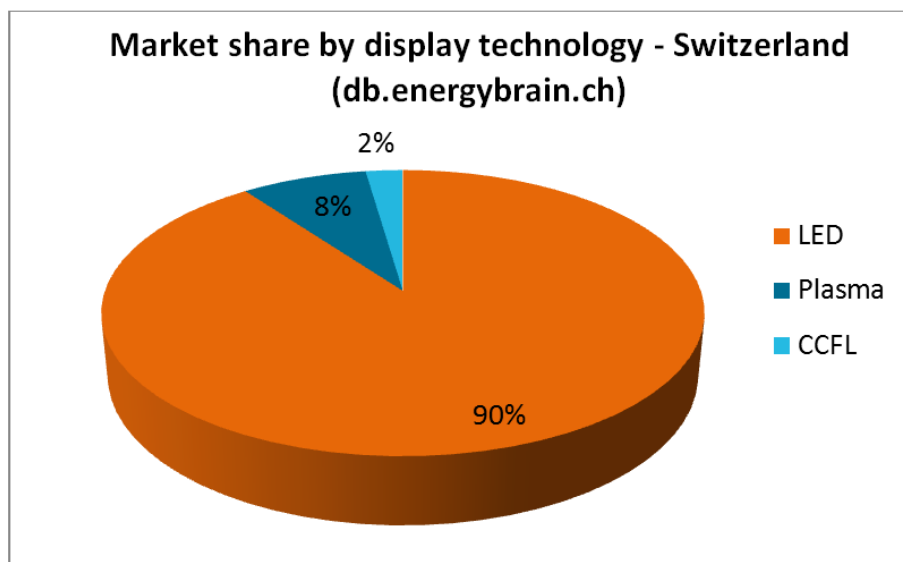


Figure 14: Market share by technology in Switzerland in 2013 (Source: Energybrain, 2013)

The market share of larger display sizes in Switzerland is higher than in the EU-5 whereas the market share for smaller display sizes is slightly lower.

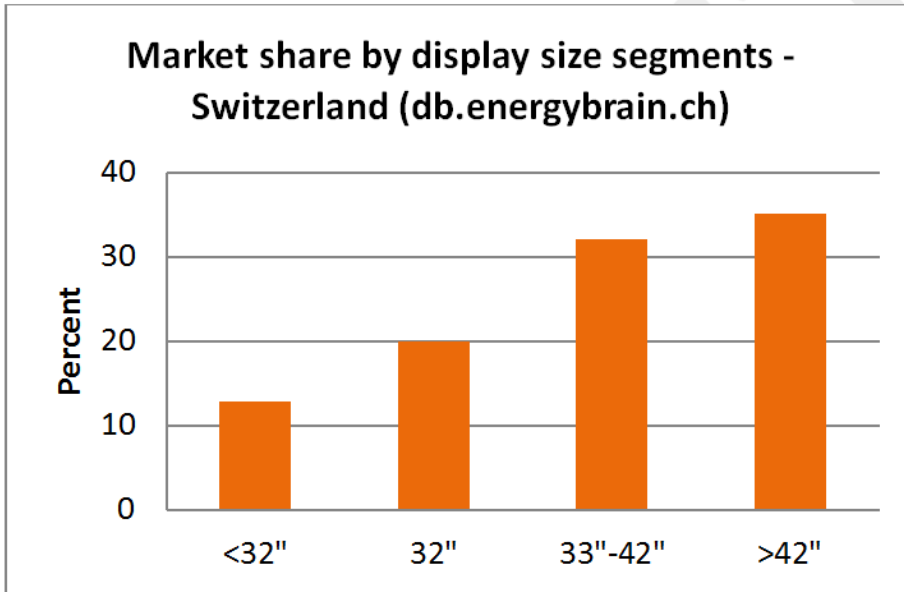


Figure 15: Switzerland market share by screen size in 2013 (Source: Energybrain, 2013)

Both Korean manufacturers (LG and Samsung) have a lower market share in Switzerland than in the EU-5 whereas the market share of Panasonic and Toshiba is clearly higher.

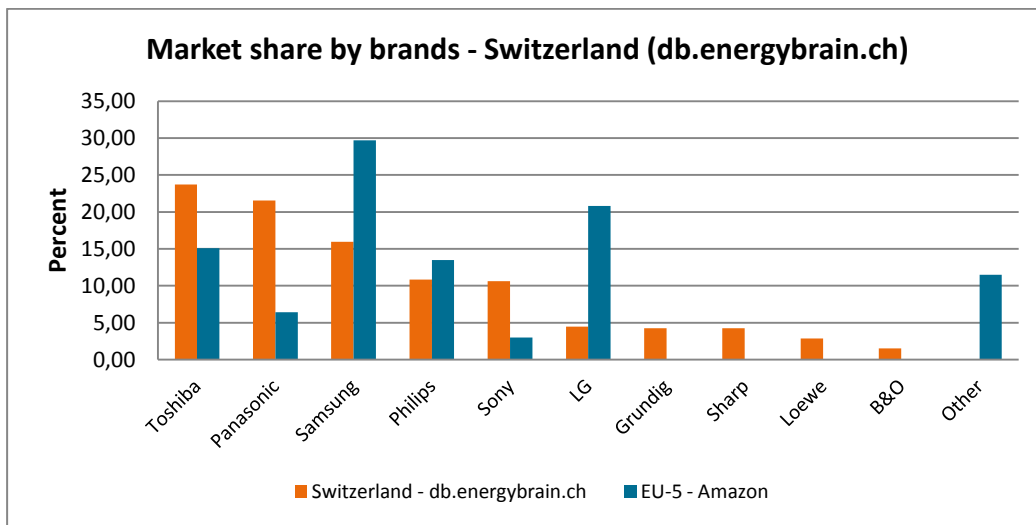


Figure 16: Market share by brands in Switzerland (Source: Energybrain, n.d.)

3.2.3. Czech Republic

In general, it seems that, except some slight deviations, the results from the Czech market are comparable with the results for the EU-5. The analysis of the display technology shows a significantly high market share of LED LCD TVs. The market of CCFL LCDs and Plasma TVs decreased from 6-7% in 2012 down to 2% in 2013.¹³

3.2.4. EU-24 TV Market

A recent study from Michel et al. on the European TV market from 2007-2012 has a very detailed data base with sales figures from GfK for EU-24.¹⁴ This study covers EU-24 countries including United Kingdom, Spain, Italy, France, Germany, Austria, Portugal, Czech Republic, Slovakia, Belgium, Bulgaria, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Netherlands, Romania, Slovenia, Sweden, Poland and Denmark. The study shows that the TV sales increased from 2007-2010. After 2010, the sales decreased until 2012. In terms of screen size the GfK figures show a pretty good comparison with the Amazon data in Figure 6.

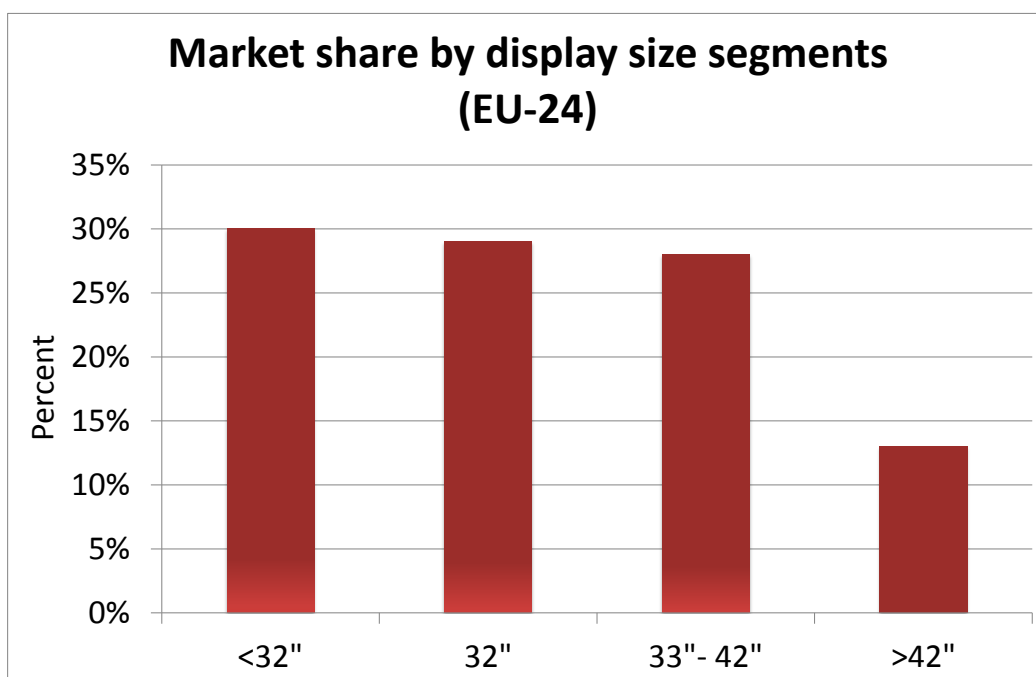


Figure 17: Market share by screen size for EU-24 in 2012 (Source: based on Michel et al., 2013)

¹³ Available at: http://byznys.lidovky.cz/prodejci-led-televizory-se-na-prodejich-podileji-az-z-98-procent-pvo-firmy-trhy.aspx?c=A130422_183718_firmy-trhy_jzl

¹⁴ Michel, A., Attali, S., Bush, E.: European TV market 2007 – 2012 – Energy efficiency before and during the implementation of the Ecodesign and Energy Labelling regulations, Topten International Services, Zurich, Switzerland, 2013.

The market shares by display technology in EU-24 show a different range for the LCD-LED to LCD-CCFL ratio compared to the market share by display technology of the Amazon bestsellers shown in Figure 4. This difference may result from the sales year (2012) as well as the coverage of more countries with a different market. From the trend analysis, it can be seen that a strong market transformation from CCFL backlight to LED backlight started in 2009, which might continue in 2013.

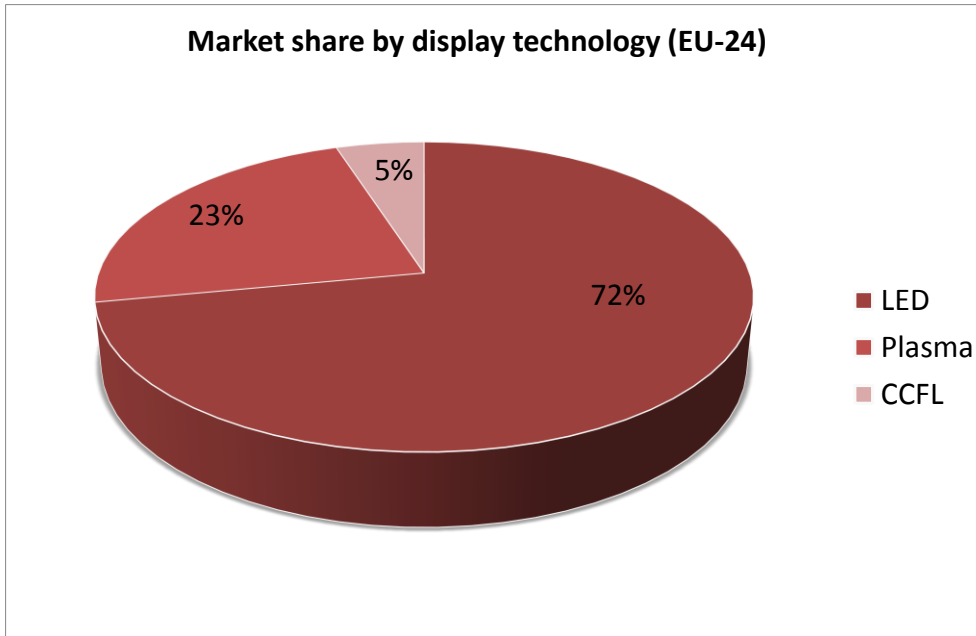


Figure 18: Market share by display technology EU-24 in 2012 (Source: based on Michel et al., 2013)

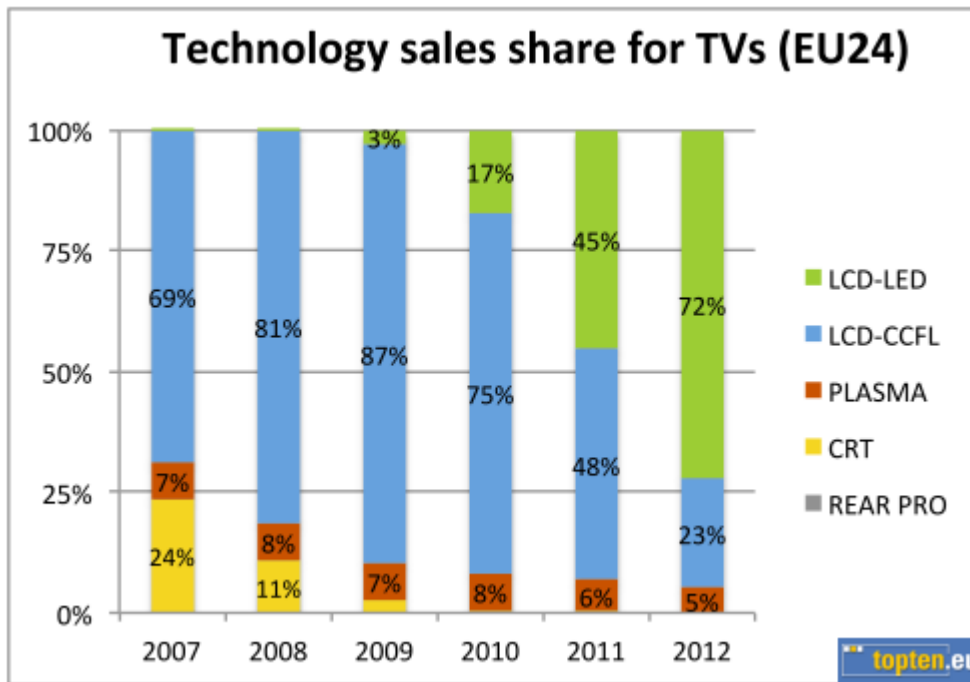


Figure 19: Development of sales shares of different TV technologies (Source: based on Michel et al., 2013)

The study provides no data on the manufacturers respective shares. However, it contains an interesting comparison of energy classes across countries. It shows a great variety for the energy classes, from D to A++, which means that the country markets have a significant variance in terms of technology.

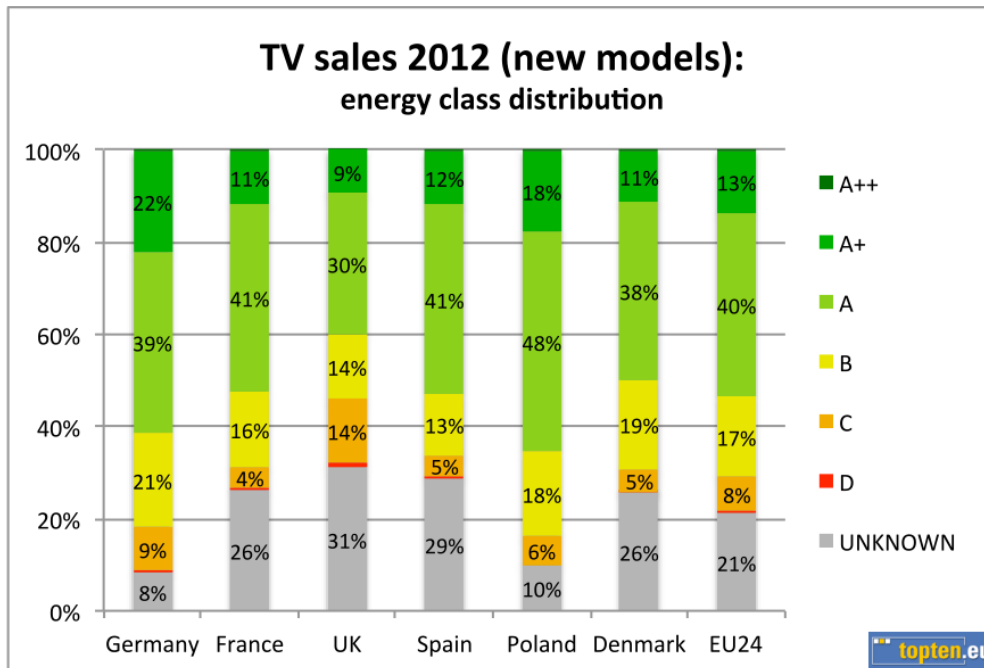


Figure 20: Distribution of energy classes among EU-5 and EU-24 (Source: Michel et al., 2013)



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