



PRODUCT CATEGORY REPORT

TELEVISIONS

Overview

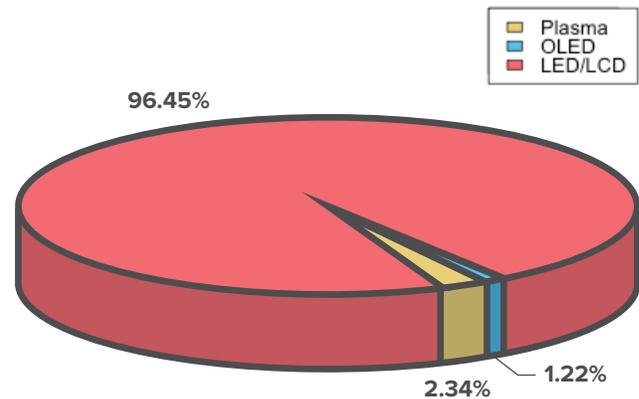
The television set is an integral part of American family life. Even with the ever-increasing proliferation of smartphones and other visual devices, Nielsen estimates 116.4 million TV homes in the U.S. It's a thriving industry and the choices are endless, depending on a consumer's technology preference and budget. The Indix Product API shows that LCD/LED televisions are most prevalent on the market. Samsung and LG dominate shipments for that screen technology. Which are the leading stores and brands? Do TV prices increase with screen size? What does the assortment look like based on different features? Are there significant trends in pricing over time? These are some of the questions we wanted to answer through this report.

SUMMARY

Our analysis took shape around three main parameters – technology, features, and screen size. Plasma, LED/LCD, and OLED are classifications based on screen technology. Features can be based on resolution like 4K/Ultra HD/UHD, or 3D TVs, Smart TVs, and Curved Screen TVs. From here on, televisions with at least one of the above-mentioned features will be referred to as “featured TVs.”

LED/LCD televisions comprised 96% of the dataset pulled from the Indix Product API. According to our analysis, among the traditional brands, Samsung, LG, and Panasonic are the only ones still making plasma televisions. For the time being, OLED televisions are only made by LG. Based on these numbers and for the scope of this report, unless otherwise stated, the analysis in the coming sections is based only on LED/LCD televisions.

Product Mix by Screen Technology



Television Category Highlights

Based on an analysis of more than 6,270 LED/LCD televisions, below are some of the highlights from our report.

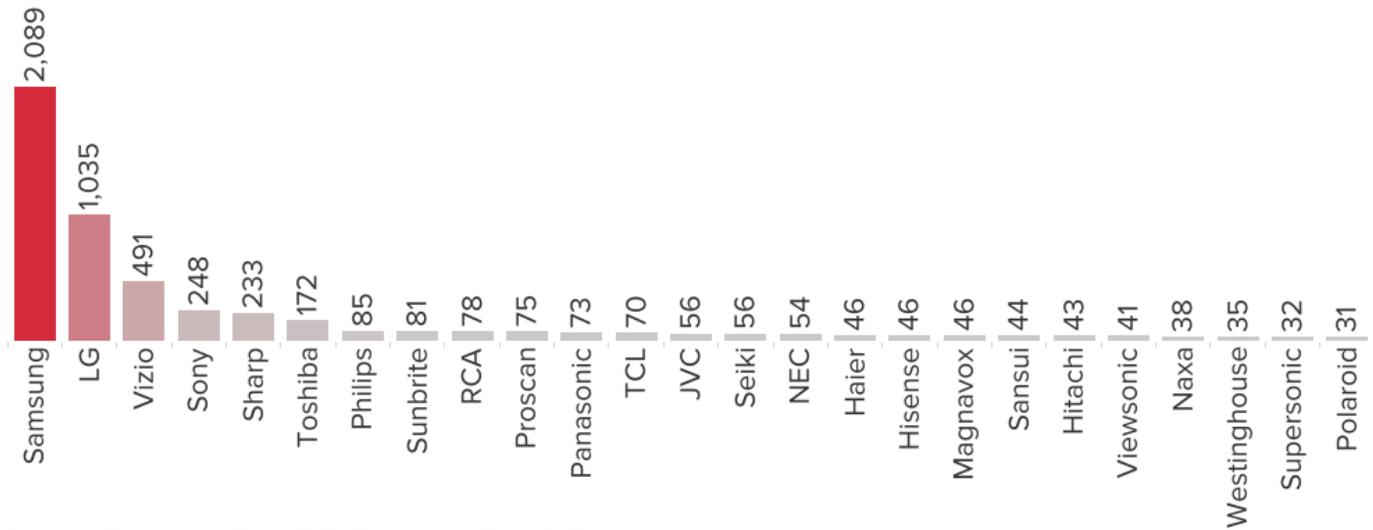
- Top five leading TV brands: Samsung, LG, Vizio, Sony, and Sharp
- Sunbrite is the most expensive TV brand with an average price of \$3,660.
- 32% of LED/LCD TVs on the market are smart/connected.
- Top four stores by product count: Amazon, Newegg, Sears, and Walmart
- Non-featured TVs cost 64% less than featured TVs.
- Vizio is most affordable among the top five TV brands.
- Average cost of LED/LED TVs increases with size.
- Most televisions are in the 30- to 60-inch screen size range.
- 90 days after release, average sale prices of TVs decline by 8%.
- Average TV prices are lowest in August and November.

Note: All datasets were pulled from the Indix Product API in July 2016 and include only “in stock” products. The sample comprised 6,501 products spanning 52,120 offers (product + store combinations) sold by 158 brands across 249 online stores. Quantitative data processing techniques including outlier tests, data standardization, classification models, and distribution models (frequency and density histograms, box plots) were used for the statistical analysis.

TOP BRANDS

For consumers, brands form the cornerstone of any electronics purchase decision, particularly in terms of assortment and pricing. We homed in on the top 25 brands across 249 stores exposed through the Indix Product API.

Product Count of Top 25 Brands (Fig. 1.1)



Mean Price of Top 25 Brands (Fig. 1.2)

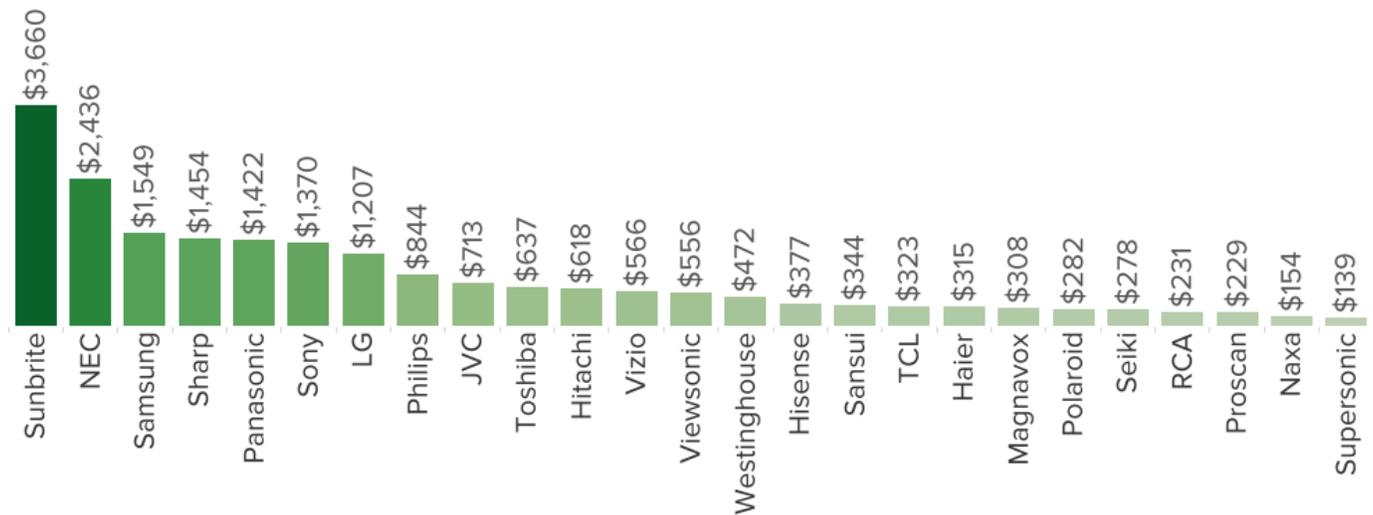


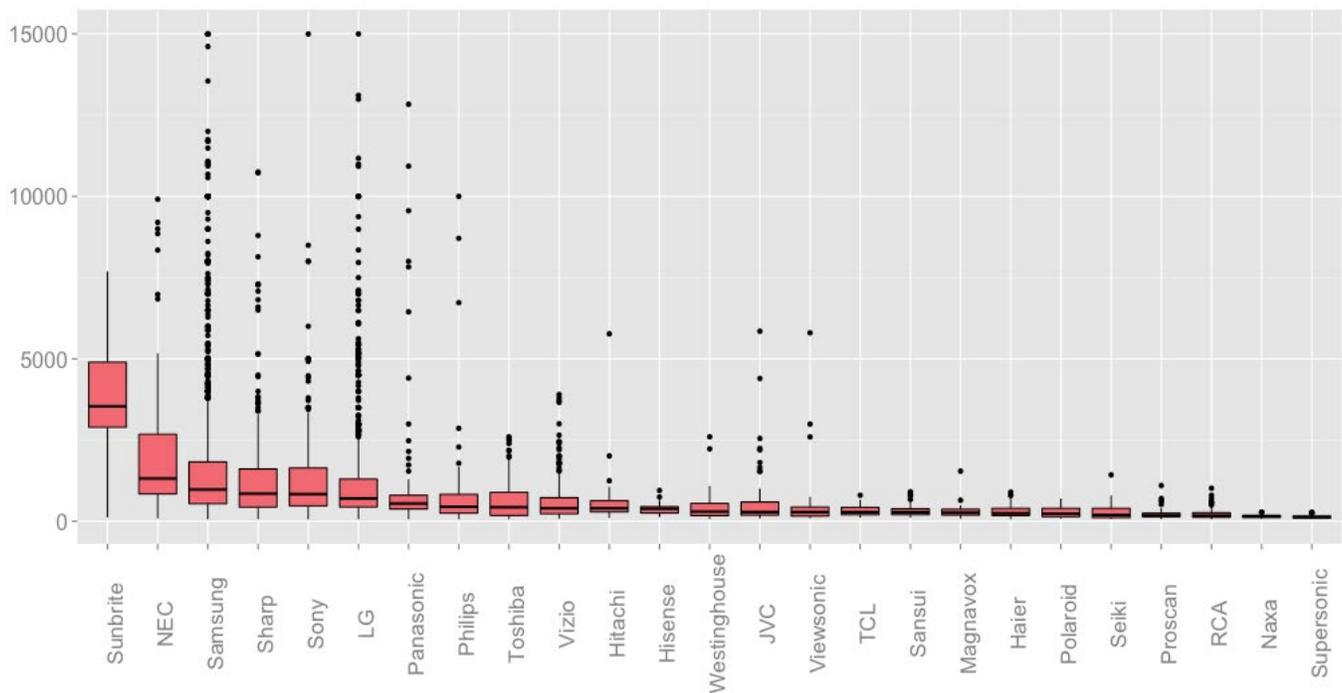
Image Source: <http://www.thelifeofluxury.com/beautifully-crafted-all-season-televitions-by-sunbritev/>

The Brightest TV:

Sunbrite is the most expensive brand with an average price of \$3,660. You can enjoy Sunbrite's outdoor TVs in rain, snow, and extreme temperatures. But you'll pay almost twice as much for the luxury.

Price distribution analysis among the top 25 brands revealed deeper insights. All Sunbrite TVs sell for less than \$5,000. They specialize exclusively in outdoor TVs and the price range is tightly packed. Brands like Samsung and LG, on the other hand, offer a much wider range and assortment of products, with some TVs costing more than \$10,000.

Price Distribution of Top 25 Brands (Fig. 1.3)



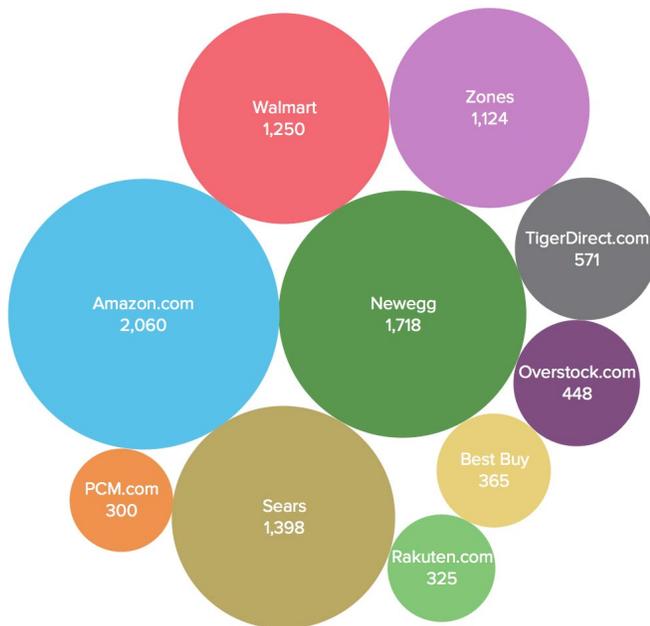
Insights:

- Samsung, LG, Vizio, Sony, and Sharp are the top five leading brands (Fig. 1.1).
- Samsung has 1,000+ more products on the market than its nearest competitor LG (Fig. 1.1).
- Average price of top five brands ranges between \$1,200 and \$1,600, except Vizio, priced on average at \$566 (Fig. 1.2).
- Samsung is the third most expensive brand, although it leads the market in product count (Fig. 1.2).
- Choices are many with average price ranging from \$139 (Supersonic) to \$3,660 (Sunbrite) (Fig. 1.2).
- Sunbrite is the most expensive brand with average price at \$3,660 and median price at \$3,540 (Fig. 1.3).
- Samsung and LG are relatively cheaper, although both carry expensive TVs priced higher than \$10,000 (Fig. 1.3).
- The price range is limited for most brands with lower product count such as Supersonic, Nexa, RCA, and Haier (Fig. 1.3).

TOP STORES

Marketplaces are convenient for shoppers as they offer a variety of choices and the ability to compare products across brands. According to the Indix Product API, the top 10 online stores for televisions are all marketplaces. The top four players are Amazon, Newegg, Sears, and Walmart, and they have 139 products in common among them.

Top 10 Stores (Fig. 2.1)



List & Sale Price at Top 4 Stores (Fig 2.2)



Insights:

- The bottom five stores (TigerDirect.com, Overstock.com, Best Buy, Rakuten.com, and PCM.com) are not competitive with the top players in terms of product count and assortment (Fig. 2.1).
- Amazon carries almost 7 times as many products as PCM.com, the store with the lowest product count among the top 10 (Fig. 2.1).

Based on our analysis of the 139 products in common between the top four stores, we found that:

- The average list price isn't consistent across the four stores for the same set of products (Fig. 2.2).
- Highest average list price: Sears (Fig. 2.2)
- Lowest average list price: Newegg (\$218 cheaper than Sears) (Fig. 2.2)
- Sears has both the highest average list and sale price (Fig. 2.2).
- Average list price is comparable at Newegg and Amazon, but the sale price is much lower at Newegg (Fig. 2.2).

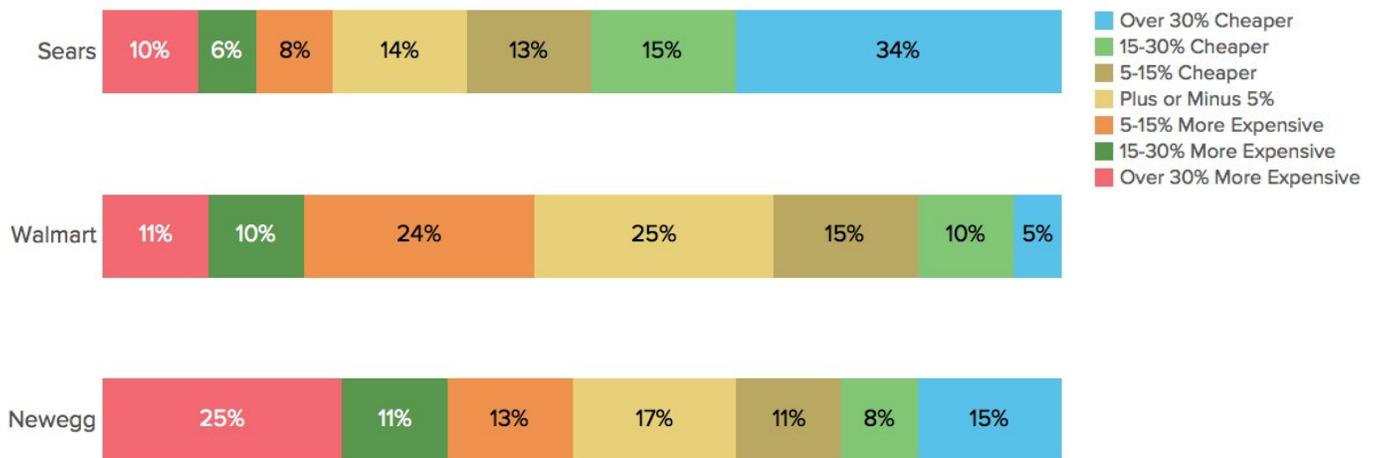
Comparative View Between Store Pairs

Given that Amazon has the highest number of products, we analyzed the products it has in common with the other three top stores.

Comparison Table

Store Pairs	Matched Products	Sale Price	
Amazon VS. Sears	672	\$818 VS. \$1038	Amazon \$220 < Sears
Amazon VS. Walmart	417	\$931 VS \$931	Amazon = Walmart
Amazon VS. Newegg	379	\$944 VS. \$1039	Amazon \$95 < Newegg

Comparative View vs Amazon by Price Difference (Fig. 2.3)



Insights:

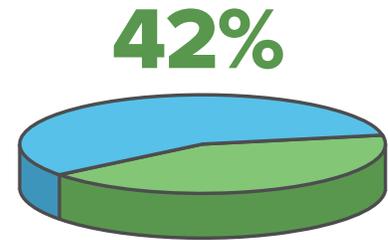
- Amazon offers better deals compared to Sears, as 34% of matched products are over 30% cheaper there (Fig. 2.3).
- Almost half of matched products are between 5% and over 30% more expensive at Walmart compared to Amazon (Fig. 2.3).
- A quarter of the products sold at both Amazon and Newegg are over 30% more expensive at the former store (Fig. 2.3).

FEATURES

An analysis of all the product titles revealed the most frequently occurring terms and this helped us determine which features to analyze and compare. The top features we focused on are 4K/Ultra HD/UHD, 3D TV, Smart TV, and Curved Screen.

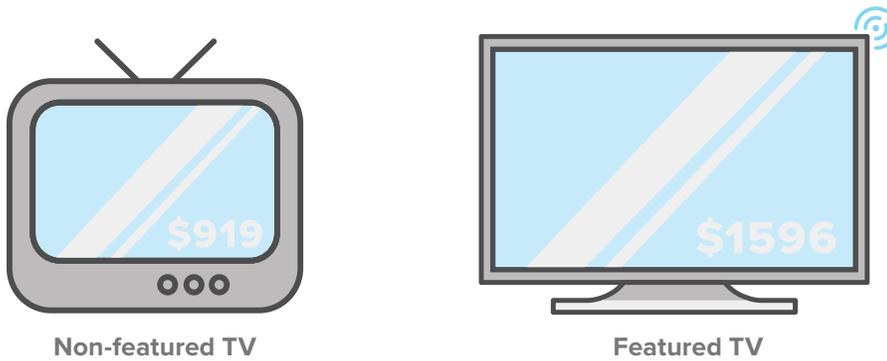
Featured TVs refer to TVs that have at least one of the above-mentioned features. They comprise 42% of all LED/LCD TVs. The average price of featured TVs is 63.9% higher than non-featured ones.

Samsung leads featured TVs with 1,043 products. For now only Samsung offers curved LED/LCDs, with one exception from Sony. The top five featured TV brands are Samsung, LG, Vizio, Sony, and Sharp.

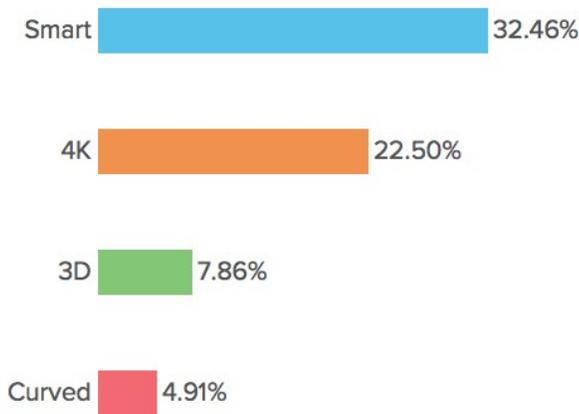


LED/LCDs are featured TVs.

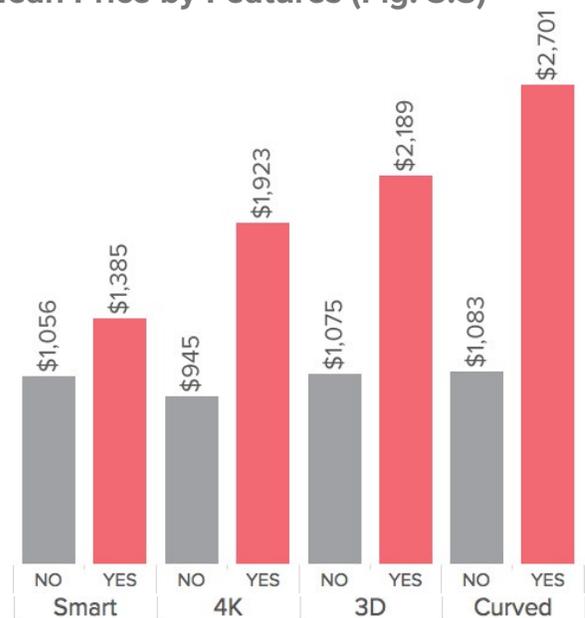
Featured vs Non-Featured TVs (Fig. 3.1) by average price



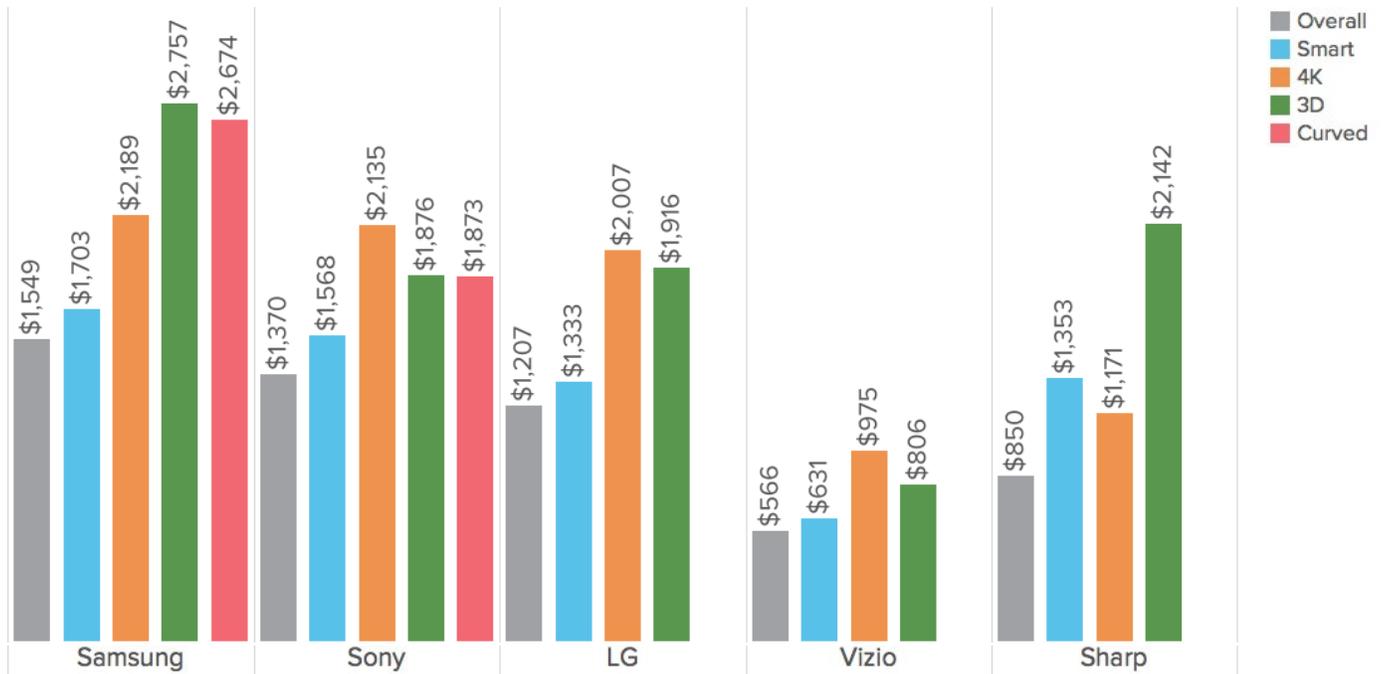
Percentage by Features (Fig. 3.2) based on product count



Mean Price by Features (Fig. 3.3)



Average Price of Top Five Brands by Features (Fig. 3.4)



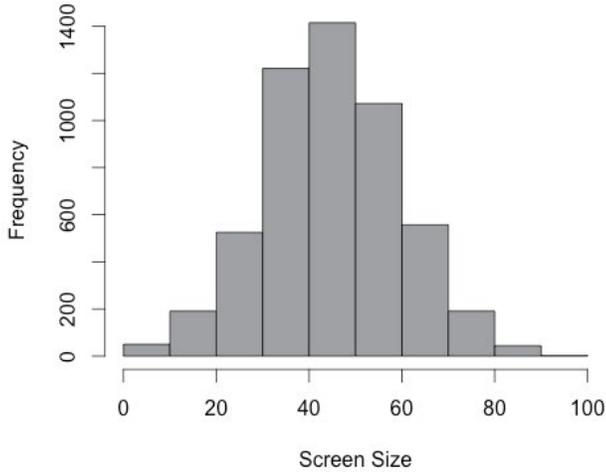
Insights:

- 32% of LCD/LED TVs on the market are smart or connected (Fig. 3.2).
- 4K/UHD TVs are quite popular, making up 22.5% of the market (Fig. 3.2).
- Less than 5% of LCD/LED TVs have curved display screens, and almost all of them are made by Samsung (Fig. 3.2).
- Average price of smart TVs is only 23.8% more than non-featured TVs of the same kind (Fig. 3.3).
- 3D and 4K TVs are more expensive than smart TVs (Fig. 3.3).
- Samsung 3D TVs are the most expensive among the top five brands, at an average price of \$2,757 (Fig. 3.4).
- The average price of Samsung 3D and curved TVs is comparable (Fig. 3.4).
- Vizio is most affordable among the top five brands (Fig. 3.4).

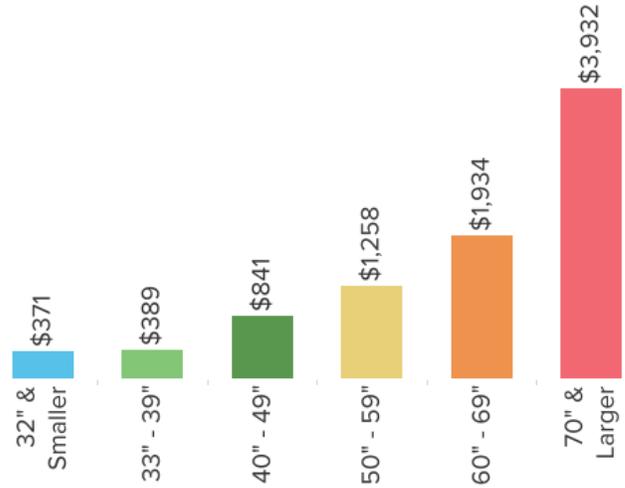
SCREEN SIZE

Screen size is a critical feature considered by consumers when buying a TV. Depending on how much space one has in their room, and wallet, there are a lot of choices.

Screen Size Distribution (Fig. 4.1)

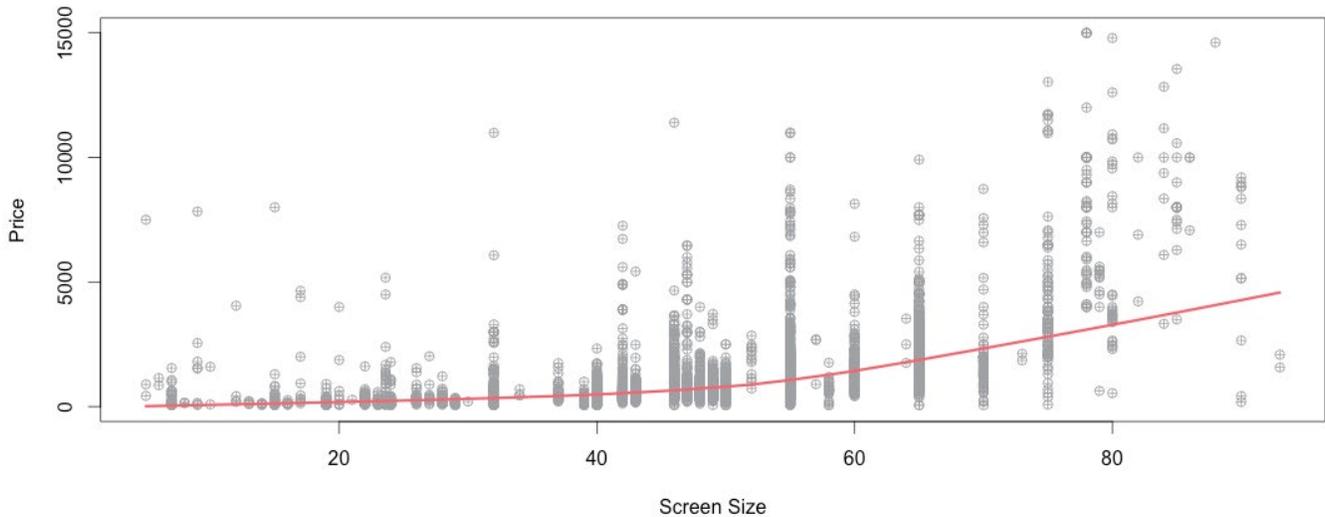


Average Price by Screen Size (Fig. 4.2)



Plotting screen size against corresponding TV price provides interesting insights into the relationship between the two variables.

Screen Size vs Price Analysis (Fig. 4.3)



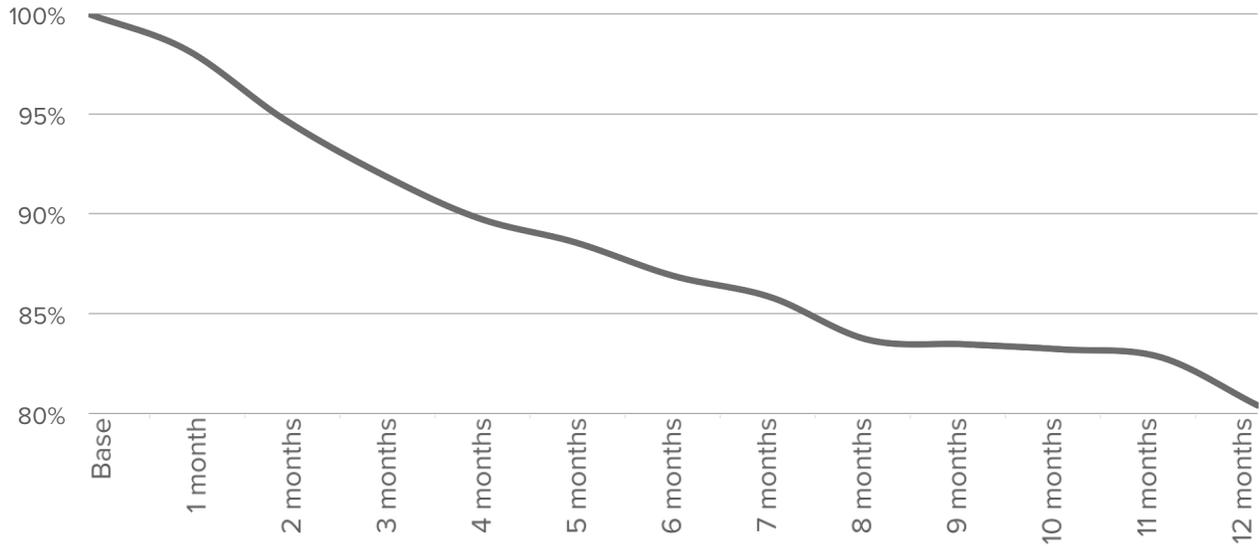
Insights:

- Most TVs are in the 30- to 60-inch range (Fig. 4.1).
- The average cost of LED/LCD TVs increases with screen size (Fig. 4.2).
- TVs 32 inches and smaller, and up to 39 inches are priced similarly (Fig. 4.2).
- TVs larger than 70 inches are significantly more expensive than others (Fig. 4.2).
- Starting at 50 inches, the price increase is more pronounced (Fig. 4.3).

PRICE HISTORY

For analyzing price history, we examined the prices of 3,337 products from over 80 different online sites for a total of 21,577 offers (product + store combinations) over the last 36 months.

Overall Price Decline (Fig. 5.1)



Monthly Average TV Price (Fig. 5.2)



Insights:

- Prices decline for all brands over time (Fig. 5.1).
- Average sale price of televisions declines by 8% three months after release, 13.1% after half a year, and 19.6% after one year (Fig. 5.1).
- The price drops faster in the first 8 months and then gradually slows down (Fig. 5.1).
- Average prices are lowest in August and November (Fig. 5.2).

CONCLUSION

Consumers have a wide variety of choices in televisions depending on their budget, features wanted, and size needed. It is a highly competitive and dynamic market. Here is a summary of our findings:

- If you're looking for an affordable brand offering wide assortment, go for Vizio.
- Samsung has no match in assortment as they offer 1,000+ more products than LG, their nearest competitor. Other brands need to up their game.
- LED/LCD TVs are leading the market. Plasmas are being phased out, and OLED technology hasn't reached mass adoption yet.
- Brands like RCA, Haier, and Sansui offer products within a limited price range and assortment, as opposed to brands like Sony, Samsung, or LG, which offer much wider choices.
- For both affordability and choice, LED/LCD TVs in the 30- to 50-inch screen size range are the best. Prices increase significantly from 50-inch screen onwards.
- Curved display screens are very expensive and still rare on the market.
- 4K/UHD TVs have a considerable market representation at 22%.
- Buying older TV models is more economical. August and November are the best times to buy.

About Indix

Indix is building the world's first Product Information Marketplace – the single largest source of structured product information. Using the web and partner sites, we collect dynamic product data such as price, promotion, availability, and seller information in addition to normalized catalog data like product identifiers and attributes. Through data science and machine learning, we cleanse and structure the data to make it readily available to businesses.

Using Indix Data-as-a-Service, businesses and developers use the power of product information to make better decisions, drive innovation, and create new models of commerce.

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