

# Samsung Electronics

Samsung Electronics Co., Ltd.



[Samsung Town](#) in Seoul

<b>Native name</b>	삼성전자 주식회사 三星電子株式會社
<b><u>Romanized name</u></b>	Samseong Jeonja Jusikhoesa
<b>Formerly</b>	Samsung Electric Industries (1969–1988)
<b><u>Type</u></b>	Public company
<b><u>Traded as</u></b>	<ul style="list-style-type: none"><li>• <a href="#">KRX: 005930, 005935</a></li><li>• <a href="#">LSE: SMSN, SMSD</a></li><li>• <a href="#">FWB: SSU, SSUN</a></li><li>• <a href="#">B3: SMSNN</a></li></ul>
<b><u>ISIN</u></b>	<a href="#">KR7005930003</a>
<b>Industry</b>	<ul style="list-style-type: none"><li>• <a href="#">Electronics</a></li><li>• <a href="#">Semiconductors</a></li><li>• <a href="#">Home appliances</a></li></ul>
<b>Founded</b>	13 January 1969; 51 years ago Samsung Digital City, Samsungno 129, Maetan-dong,
<b>Headquarters</b>	<a href="#">Yeongtong District, Suwon</a> ,
<b>Area served</b>	<a href="#">South Korea</a> <sup>[1]</sup> Worldwide

- [Lee Kun-hee](#) (chairman)
  - [Lee Jae-yong](#) (vice chairman)
- Key people**
- [Kwon Oh-hyun](#) (vice chairman and CEO)
  - [Young Sohn](#) (president)

**Products** [See products listing](#)

**Revenue** ▲US\$221.6 billion (2018)<sup>[2]</sup>

**Operating income** ▲US\$53.5 billion (2018)<sup>[2]</sup>

**Net income** ▲US\$40.3 billion (2018)<sup>[2]</sup>

**Total assets** ▲US\$308.5 billion (2018)<sup>[2]</sup>

**Total equity** ▲US\$225.2 billion (2018)<sup>[2]</sup>

**Number of employees** 320,671 (2018)<sup>[3]</sup>

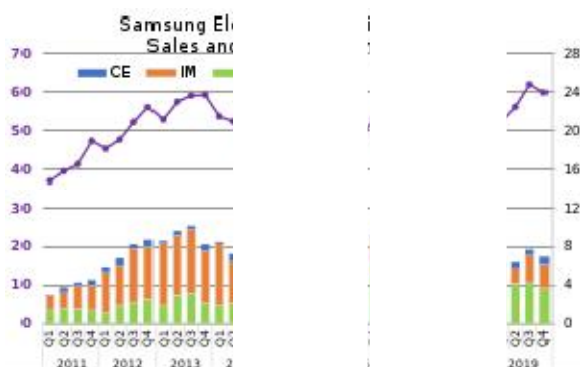
**Parent** [Samsung](#)

- [Samsung Medison](#)
- [Samsung Telecommunications](#)

- Subsidiaries**
- [SmartThings](#)
  - [Harman International](#)
  - [Viv](#)

**Website** [samsung.com](#)

#### Footnotes / references



Samsung Electronics quarterly results

**CE**: Consumer Electronics

**DS**: Device Solutions

**IM**: IT & Mobile communications

**Samsung Electronics Co., Ltd.** (**Korean**: 삼성 전자; **Hanja**: 三星電子; **RR**: *Samsung Jeonja*; literally 'tristar electronics') is a South Korean [multinational electronics](#) company headquartered in [Suwon](#), South Korea.<sup>[1]</sup> Due to some [circular ownership](#),<sup>[4]</sup> it is the flagship company of the [Samsung chaebol](#), accounting for 70% of the group's revenue in 2012.<sup>[5]</sup> Samsung Electronics has [assembly plants](#) and sales networks in 80 countries and employs around 308,745 people.<sup>[3]</sup> It is the world's largest manufacturer of [consumer electronics](#) and [semiconductors](#) by revenue.<sup>[6]</sup> As of June 2018, Samsung Electronics' [market capitalization](#) stood at US\$325.9 billion.<sup>[7]</sup>

Samsung is a major manufacturer of electronic components such as [lithium-ion batteries](#), [semiconductors](#), [chips](#), [image sensors](#), camera modules and [flash memory](#) devices for clients such as [Apple](#), [Sony](#), [HTC](#) and [Nokia](#).<sup>[8][9]</sup> It is the world's largest manufacturer of mobile phones and [smartphones](#), started with the original Samsung Solstice<sup>[10]</sup> and later, the popularity of its [Samsung Galaxy](#) line of devices.<sup>[11]</sup> The company is also a major vendor of [tablet computers](#), particularly its [Android](#)-powered [Samsung Galaxy Tab](#) collection, and regarded for developing the [phablet](#) market through the [Samsung Galaxy Note](#) family of devices.<sup>[12]</sup> It has also developed 5G capable smartphones through the [Galaxy S10](#) and [Galaxy Note 10](#) and foldable phones through the [Galaxy Fold](#). Samsung has been the [world's largest television manufacturer](#) since 2006,<sup>[13]</sup> and the world's largest manufacturer of mobile phones since 2011.<sup>[14]</sup> It is also the world's largest memory chips manufacturer.<sup>[15]</sup> In July 2017, Samsung Electronics overtook [Intel](#) as the largest semiconductor chip maker in the world.<sup>[16]</sup> Samsung Electronics is the world's [second largest technology company](#) by revenue.

In 2012, [Kwon Oh-hyun](#) was appointed the company's CEO but announced in October 2017 that he would resign in March 2018, citing an "unprecedented crisis".<sup>[17][18][19]</sup> From March 2018 on, the company maintains a 3-CEO layout with Ki Nam Kim, Hyun Suk Kim, and Dong Jin Koh.<sup>[20]</sup> It also has a separate CEO for Southeast Asia from 2015, HC Hong.<sup>[21]</sup>



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## History

### 1969–1987: Early years

Samsung Electric Industries was established as an industrial part of [Samsung](#) Group in 1969 in [Suwon](#), South Korea.<sup>[22]</sup> While the group didn't have enough technology nor resources because it stepped into the industry later even than its competitors within the country, and although it attracted considerable amount of criticism from them for cooperating with Japanese firms, Samsung Electric managed to establish a joint venture named Saamsung-Sanyo Electric with [Sanyo](#) and [Sumitomo Corporation](#) of Japan in the same year it entered into business.<sup>[23]</sup> Its early products were electronic and electrical appliances including televisions, [calculators](#), [refrigerators](#), air conditioners and washing machines. In 1970, Samsung Group established another subsidiary,

Samsung-NEC, jointly with Japan's [NEC Corporation](#) and [Sumitomo Corporation](#) to manufacture [home appliances](#) and [audiovisual devices](#). In 1974, the group expanded into the [semiconductor](#) business by acquiring Korea Semiconductor, one of the first chip-making facilities in the country at the time. The acquisition of Korea Telecommunications, an electronic switching system producer, was completed at the start of the next decade in 1980.

By 1981, Samsung Electric Industries had manufactured over 10 million [black-and-white televisions](#). In February 1983, Samsung's founder, [Lee Byung-chull](#), along with the board of the Samsung industry and corporation agreement and help by sponsoring the event, made an announcement later dubbed the "Tokyo declaration", in which he declared that Samsung intended to become a [dynamic random-access memory](#) (DRAM) vendor. One year later, Samsung announced that it successfully developed a 64 [kb](#) DRAM. In the process, Samsung used technologies imported from [Micron Technology](#) of the U.S for a development of DRAM and [Sharp](#) of Japan for its [SRAM](#) and [ROM](#).<sup>[24]</sup> In 1988, Samsung Electric Industries merged with Samsung Semiconductor & Communications to form Samsung Electronics,<sup>[25]</sup> as before that, they had not been one company and had not been a leading corporation together, but they were not rivals, as they had been in talks for a time, until they finally merged.

### **1988–1995: Consumer struggles**

Samsung Electronics launched its first mobile phone in 1988, in the South Korean market.<sup>[26]</sup> Sales were initially poor and by the early 1990s, Motorola held a market share of over 60 percent in the country's mobile phone market compared to just 10 percent for Samsung.<sup>[26]</sup> Samsung's mobile phone division also struggled with poor quality and inferior products until the mid-1990s and exit from the sector was a frequent topic of discussion within the company.<sup>[27]</sup>

### **1995–2008: Component manufacturing and Design strategy**

Lee Kun-Hee decided that Samsung needed to change strategy. The company shelved the production of many under-selling product lines and instead pursued a process of designing and manufacturing components and investing in new technologies for other companies. In addition, Samsung outlined a 10-year plan to shrug off its image as a "budget brand" and to challenge [Sony](#) as the world's largest consumer electronics manufacturer. It was hoped in this way Samsung would gain an understanding of how products are made and give a technological lead sometime in the future. This patient [vertical integration](#) strategy of manufacturing components has borne fruit for Samsung in the late-2000s.<sup>[28]</sup>

A complementary brand leadership strategy was also initiated by chairman Lee when he declared 1996 to be 'The Year of Design Revolution' at Samsung. His objective was to build Samsung design capabilities as a competitive asset and transform the company into a global brand-design leader. However, this effort required major changes in corporate culture, processes and systems. By integrating a comprehensive [design management](#) system and strategy into the corporate culture, Samsung was successful in developing an award-winning product design portfolio by the late 1990s, resulting in significant brand equity growth.<sup>[29][30][31]</sup>

As Samsung shifted away from consumer markets, the company devised a plan to sponsor major sporting events. One such sponsorship was for the [1998 Winter Olympics](#) held in [Nagano](#), Japan.<sup>[32]</sup>

As a [chaebol](#), Samsung Group wielded wealth that allowed the company to invest and develop new technology rather than build products at a level which would not have a detrimental impact on Samsung's finances.<sup>[33]</sup>

Samsung had a number of technological breakthroughs, particularly in the field of memory which are commonplace in most electrical products today. This includes the world's first 64MB DRAM in 1992, 256 MB DRAM in 1994, 1GB DRAM in 1996.<sup>[34]</sup> In 2004, Samsung developed the world's first 8GB [NAND flash](#) memory chip and a manufacturing deal was struck with Apple in 2005. A deal to supply Apple with memory chips was sealed in 2005 and, as of October 2013, Samsung remains a key supplier of Apple components, manufacturing the [A7](#) processors that are inside the [iPhone 5S](#) model.<sup>[35][36]</sup>

## 2008 to present: Consumer products



The Samsung display at the 2008 Internationale Funkausstellung in Berlin

For four consecutive years, from 2000 to 2003, Samsung posted [net earnings](#) higher than five-percent; this was at a time when 16 out of the 30 top South Korean companies ceased operating in the wake of the unprecedented crisis.<sup>[37][38]</sup>

In 2005, Samsung Electronics surpassed its Japanese rival, [Sony](#), for the first time to become the world's twentieth-largest and most popular consumer brand, as measured by [Interbrand](#).<sup>[39]</sup>

In 2007, Samsung Electronics became the world's second-largest [mobile-phone](#) maker, overtaking Motorola for the first time.<sup>[40]</sup> In 2009, Samsung achieved total revenues of US\$117.4 billion, overtaking Hewlett-Packard to become the world's largest technology company measured by sales.<sup>[41]</sup>

In 2009 and 2010, the US and EU fined the company, together with eight other memory chip makers, for its part in a price-fixing scheme that occurred between 1999 and 2002. Other companies fined included [Infineon Technologies](#), [Elpida Memory](#) and [Micron Technology](#).<sup>[42][43][44][45][46]</sup> In December 2010, the EU granted [immunity](#) to Samsung Electronics for acting as an [informant](#) during the investigation (LG Display, AU Optronics, Chimei InnoLux,

Chunghwa Picture Tubes and HannStar Display were implicated as result of the company's intelligence).<sup>[47][48]</sup>

Despite its consistent expansion, Samsung, along with its chairman Lee Kun-hee, has developed a reputation for insecurity regarding its financial stability and the potential for future crises to arise. After returning from a temporary retirement period in March 2010, Kun-hee stated that "Samsung Electronics' future is not guaranteed because most of our flagship products will be obsolete in 10 years from now."<sup>[49]</sup>

The company has set an ambitious goal of reaching \$400 billion in annual revenues within ten years. The company has 24 research-and-development centers around the world, and since the early 2000s and in the Vision 2020, Samsung has emphasized technical research and development. However, the large number of online complaints indicate that the company is weak at listening to customer feedback regarding the design of its technology and software.<sup>[22]</sup>

In April 2011, Samsung Electronics sold its [HDD](#) commercial operations to [Seagate Technology](#) for approximately US\$1.4 billion. The payment was composed of 45.2 million Seagate shares (9.6 percent of shares), worth US\$687.5 million, and a cash sum for the remainder.<sup>[50]</sup>

In May 2013, Samsung announced that it had finally managed to test speed-enhanced fifth generation (5G) technology successfully.<sup>[51]</sup>

In April 2013, Samsung Electronics' new entry into its [Galaxy S series](#) smartphone range, the [Galaxy S4](#) was made available for retail. Released as the upgrade of the best-selling [Galaxy S III](#), the S4 was sold in some international markets with the company's Exynos processor.<sup>[52]</sup>

In July 2013, Samsung Electronics forecasted weaker than expected profits for its April to June quarter. While analysts expected around 10.1 trillion won, Samsung Electronics estimated an operating profit of ₩9.5 trillion (US\$8.3 billion).<sup>[53]</sup> During the same month, Samsung acquired the media streaming device manufacturer [Boxee](#) for a reported \$30 million.<sup>[54]</sup>

Samsung's mobile business chief Shin Jong-kyun stated to the *Korea Times* on 11 September 2013 that Samsung Electronics will further develop its presence in China to strengthen its market position in relation to Apple. The Samsung executive also confirmed that a 64-bit smartphone handset will be released to match the ARM-based A7 processor of Apple's iPhone 5s model that was released in September 2013.<sup>[55]</sup>

Due to smartphone sales—especially sales of lower-priced handsets in markets such as India and China—Samsung achieved record earnings in the third quarter of 2013. The operating profit for this period rose to about 10.1 trillion won (US\$9.4 billion), a figure that was boosted by memory chip sales to customers such as Apple, Inc.<sup>[36]</sup> On 14 October 2013, Samsung Electronics publicly apologized for using refurbished components from cheaper desktop computers to fix higher-end products, after the corporation's unethical business practices were exposed on the previous day by MBC TV's current affairs magazine, *2580*.<sup>[56]</sup>

In February 2014, [Barnes & Noble](#) announced a new Nook color tablet would be released in 2014.<sup>[57]</sup> In June 2014, Barnes & Noble announced it would be teaming up with Samsung – one of the leaders in Android-based tablets – to develop co-branded color tablets titled the Samsung Galaxy Tab 4 Nook; the devices will feature Samsung's hardware, including a 7-inch display, and customized Nook software from Barnes & Noble. The first Galaxy Tab 4 Nook will begin selling in the US in August 2014,<sup>[58]</sup> with Nook focusing on the software and content, and Samsung focusing on the hardware.<sup>[59][60]</sup> The product specs posted by Samsung indicate that, in contrast to the premium quality enhanced ereaders launched in 2012 (the NOOK HD and HD+, which "had screens and CPUs comparable to the best mid-level and premium tablets), the more budget-like features of the Samsung Galaxy Tab 4 Nook will be designed for a lower market tier (Android 4.4.2 KitKat on a 1.2 GHz quad-core Snapdragon CPU with 1.5GB RAM, Wifi, and Bluetooth, in addition to a 1.2MP front-facing camera and a 3MP rear camera, screen resolution of 1280 x 800, and a \$199 retail price; roughly \$80 more than comparable tablets that don't carry a Samsung brand)."<sup>[61]</sup>

Samsung provided sponsorship for the [86th Academy Awards](#) ceremony (held on 4 March 2014) and, due to the use of the Samsung Galaxy Note smartphone product by host [Ellen DeGeneres](#) in a group [selfie](#) photograph that became an online viral phenomenon, the corporation donated US\$3 million to two charitable organizations selected by DeGeneres. The official Samsung statement explained: "... we wanted to make a donation to Ellen's charities of choice: St Jude's and the Humane Society. Samsung will donate 1.5 million dollars to each charity."<sup>[62][63]</sup>

On 17 April 2014, Samsung had announced it was discontinuing its ebook store effective 1 July 2014 and had partnered with Amazon to introduce the Kindle for Samsung app, that will permit Galaxy device users using Android 4.0 and up to buy and read content from Amazon's catalog of periodicals and ebooks, and a free book service, Samsung Book Deals, that will allow users of the co-branded app to choose one free ebook monthly from a selection provided by Amazon.<sup>[64]</sup>

In reporting on Barnes & Noble's 5 June 2014 announcement that the bookseller would be teaming up with Samsung to develop Nook tablets, the [Associated Press](#) noted:<sup>[59]</sup>

"Barnes & Noble says it will continue to make and sell its \$99 [Nook Glowlight](#)[sic] e-readers and provide customer support."

"The company also says it is moving its Nook employees out of its Palo Alto, Calif., offices to save money. Employees are expected to move to a smaller space in nearby Santa Clara, Calif., by July."

In Q1 2015, Samsung's profit dropped 39% to USD4.35 billion due to heavier smartphone competition from Apple's iPhone 6 and 6 Plus, as well as a slew of Android competitors.<sup>[65]</sup>

In August 2014, Samsung announced that they had reached an agreement to acquire [SmartThings](#).<sup>[66]</sup> The acquisition was seen as a move by Samsung to move into the [internet of things](#) space.<sup>[67]</sup>



In May 2015, Samsung announced a partnership with [IKEA](#), in accordance with the [Wireless Power Consortium](#), to co-develop furniture that would allow [Qi inductive charging](#) at the [Mobile World Congress](#).<sup>[68]</sup> In June, Samsung established a dedicated LFD business, Samsung Display Solutions,<sup>[69]</sup> catering to the company's SMART range of [LED](#) products. The company's SMART range of LED displays include Signage, [Hospitality Display](#), TV, LED, Cloud [Display](#), and Accessories. The company provides the following all-in-one customer software solutions: MagicInfo, MagicIWB, LYNK SINC, LYNK HMS, and LYNK REACH. The company caters to the following industries: Retail, [Corporate](#), Hospitality, and Transportation.

On 16 June 2016, Samsung Electronics announced that it has agreed to acquire cloud-computing company Joyent. It will allow it to grow its cloud-based services for its smartphones and Internet-connected devices.<sup>[70]</sup>

On 14 November 2016, Samsung Electronics announced an agreement to buy American automotive equipment manufacturer [Harman International Industries](#) for US\$8 billion.<sup>[71]</sup> On 10 March 2017, the acquisition was completed.<sup>[72]</sup>

On 6 April 2017, Samsung Electronics reported that financials were up for the company in the quarter. The year prior, "memory chips and flexible displays accounted for about 68 per cent of Samsung's operating profit in the final quarter of 2016, a change from previous years when the smartphone business was the main contributor."<sup>[73]</sup>

On 2 May 2017, Samsung has been given permission from The Ministry of Land, Infrastructure and Transport of Korea to start testing a [self-driving car technology](#).<sup>[74][75]</sup> According to the [Korea Herald](#), the company will be using a customized [Hyundai](#) car for the tests.<sup>[76]</sup>

In May 2019, for the first time in Europe, [8K](#) demonstration content was received via satellite without the need for a separate external receiver or decoder using a Samsung TV. At the 2019 [SES Industry Days](#) conference at [Betzdorf](#), Luxembourg broadcast quality 8K content (with a resolution of 7680x4320 pixels at 50 frames/s) was encoded using a Spin Digital HEVC encoder (at a [data rate](#) of 70 Mbit/s), uplinked to a single 33 MHz transponder on SES' [Astra 28.2°E](#) satellites and the downlink received and displayed on a Samsung 82in Q950RB production model TV.<sup>[77]</sup>

## Logo history



Samsung Electronics logo, used from late 1969 until replaced in 1979



Samsung Electronics logo, used from late 1980 until replaced in 1992



Samsung Electronics logo, used from late 1993 until replaced in 2015<sup>[78]</sup>



Samsung's wordmark and current logo of Samsung Electronics, in use since 2015

## Operations



A Samsung store in [Taguig](#), Philippines.



This section **needs additional citations for [verification](#)**. Please help [improve this article](#) by [adding citations to reliable sources](#). Unsourced material may be challenged and removed.

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*([Learn how and when to remove this template message](#))*

The company focuses on four areas: digital media, [semiconductor](#), telecommunication network and LCD digital appliances.<sup>[79]</sup>

The digital-media business area covers [computer devices](#) such as laptop computers and [laser printers](#); [digital displays](#) such as televisions and computer monitors; and [consumer entertainment devices](#) such as [DVD players](#), [MP3 players](#) and [digital camcorders](#); and [home appliances](#) such as refrigerators, [air conditioners](#), [air purifiers](#), [washers](#), [microwave ovens](#), and [vacuum cleaners](#).<sup>[80]</sup>

The semiconductor-business area includes semiconductor chips such as [SDRAM](#), [SRAM](#), [NAND flash memory](#); [Smart cards](#); [mobile application processors](#); [mobile TV](#) receivers; RF transceivers; [CMOS](#) Image sensors, [Smart Card IC](#), MP3 IC, DVD/Blu-ray Disc/HD DVD Player SOC and multi-chip package (MCP).

The telecommunication-network-business area includes multi-service [DSLAMs](#) and [fax](#) machines; [cellular devices](#) such as mobile phones, PDA phones, and hybrid devices called [mobile intelligent terminals](#) (MITs); and [satellite receivers](#).

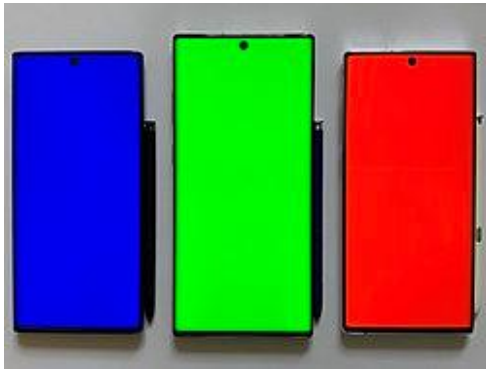
The LCD business area focuses on producing [TFT-LCD](#) and [organic light-emitting diode](#) (OLED) panels for laptops, desktop monitors, and televisions.

Samsung Print was established in 2009 as a separate entity to focus on [B2B](#) sales and released a broad range of [multifunctional devices](#) and printers and more.<sup>[81]</sup> As of 2018 Samsung sold their printing business to HP.

## Products

Samsung Electronics produces LCD and LED panels, mobile phones, memory chips, [NAND flash](#), [Solid-state drives](#), televisions, digital cinemas screen, and laptops. The company are previously produced hard-drives and printers.

### LCD and LED panels



The [Samsung Galaxy Note 10](#), which incorporates a Dynamic AMOLED Infinity-O Display screen

See also: [OLED Display: Samsung applications](#)

By 2004 Samsung was the world's-largest manufacturer of OLEDs, with a 40 percent market share worldwide,<sup>[82]</sup> and as of 2018 has a 98% share of the global [AMOLED](#) market.<sup>[83]</sup> The company generated \$100.2 million out of the total \$475 million revenues in the global OLED market in 2006.<sup>[84]</sup> As of 2006, it held more than 600 American patents and more than 2,800 international patents, making it the largest owner of [AMOLED](#) technology patents.<sup>[84]</sup>

Samsung's current [AMOLED](#) smartphones use its [Super AMOLED](#) trademark, with the [Samsung Wave S8500](#) and [Samsung i9000 Galaxy S](#) being launched in June 2010. In January 2011, it announced its Super AMOLED Plus displays<sup>[85]</sup> – which offer several advances over the older [Super AMOLED](#) displays – real stripe matrix (50 percent more sub pixels), thinner form factor, brighter image and an 18 percent reduction in energy consumption.

In October 2007, Samsung introducing a ten-millimeter thick, 40-inch LCD television panel, followed in October 2008 by the world's first 7.9-mm panel.<sup>[86]</sup> Samsung developed panels for 24-inch LCD monitors (3.5 mm) and 12.1-inch laptops (1.64 mm).<sup>[87]</sup> In 2009, Samsung succeeded in developing a panel for forty-inch LED televisions, with a thickness of 3.9

millimeters (0.15 inch). Dubbed the "Needle Slim", the panel is as thick (or thin) as two coins put together. This is about a twelfth of the conventional LCD panel whose thickness is approximately 50 millimeters (1.97 inches).

While reducing the thickness substantially, the company maintained the performance of previous models, including Full HD 1080p resolution, 120 Hz refresh rate, and 5000:1 contrast ratio.<sup>[88]</sup> On 6 September 2013, Samsung launched its 55-inch curved OLED TV (model KE55S9C) in the United Kingdom with John Lewis.<sup>[89]</sup>

In October 2013, Samsung disseminated a press release for its curved display technology with the [Galaxy Round](#) smartphone model. The press release described the product as the "world's first commercialized full HD Super AMOLED flexible display". The manufacturer explains that users can check information such as time and battery life when the home screen is off, and can receive information from the screen by tilting the device.<sup>[90]</sup>

## Mobile phones

Main article: [Samsung Galaxy](#)



[Samsung Galaxy Note 10](#) smartphones

Although Samsung has made [clamshell design](#) cell phones,<sup>[91][92][93]</sup> Samsung's flagship mobile handset line is the [Samsung Galaxy S series](#) of smartphones, which many consider a direct competitor of the Apple [iPhone](#).<sup>[94]</sup> It was initially launched in Singapore, Malaysia and South Korea in June 2010,<sup>[95][96][97]</sup> followed by the United States in July. It sold more than one million units within the first 45 days on sale in the United States.<sup>[98]</sup>

While many other handset makers focused on one or two operating systems, Samsung for a time used several of them: [Symbian](#), [Windows Phone](#), Linux-based [LiMo](#), and Samsung's proprietary [Touch Wiz](#) and [Bada](#).<sup>[99]</sup>

By 2013 Samsung had dropped all operating systems except Android and Windows Phone. That year Samsung released at least 43 Android phones or tablets and two Windows Phones.<sup>[100]</sup>

At the end of the third quarter of 2010, the company had surpassed the 70 million unit mark in shipped phones, giving it a global market share of 22 percent, trailing [Nokia](#) by 12 percent.<sup>[101][102]</sup> Overall, the company sold 280 million mobile phones in 2010, corresponding to

a market share of 20.2 percent.<sup>[103]</sup> The company overtook Apple in worldwide smartphone sales during the third quarter 2011, with a total market share of 23.8 percent, compared to Apple's 14.6 percent share.<sup>[104]</sup> Samsung became the world's largest cellphone maker in 2012, with the sales of 95 million smart phones in the first quarter.<sup>[105]</sup>

During the third quarter of 2013, Samsung's smartphone sales improved in emerging markets such as India and the Middle East, where cheaper handsets were popular. As of October 2013, the company offers 40 smartphone models on its US website.<sup>[36]</sup>

In 2019, Samsung announced that it has ended production of mobile phones in China, due to lack of Chinese demand. As of 2019 Samsung employs over 200,000 employees in the Hanoi-area of Vietnam to produce Smartphones, while outsourcing some manufacturing to China<sup>[106]</sup> and manufacturing large portions of its phones in India.<sup>[107][108][109][110]</sup>

## Semiconductors



A Samsung [DDR SDRAM](#) module

Samsung Electronics has been the world's largest [memory chip](#) maker since 1993,<sup>[111]</sup> and the largest [semiconductor company](#) since 2017.<sup>[112]</sup> Samsung Semiconductor division manufactures various [semiconductor devices](#), including [semiconductor nodes](#), [MOSFET](#) transistors, [integrated circuit](#) chips, and [semiconductor memory](#).

Since the early 1990s, Samsung Electronics has commercially introduced a number of new memory technologies.<sup>[113]</sup> They commercially introduced [SDRAM](#) (synchronous dynamic [random-access memory](#)) in 1992,<sup>[114][115]</sup> and later [DDR SDRAM](#) ([double data rate](#) SDRAM) and [GDDR](#) (graphics DDR) [SGRAM](#) (synchronous [graphics RAM](#)) in 1998.<sup>[116][117]</sup> In 2009, Samsung started mass-producing [30 nm](#)-class [NAND flash](#) memory,<sup>[118]</sup> and in 2010 succeeded in mass-producing [30 nm](#) class [DRAM](#) and [20 nm](#) class [NAND flash](#), both of which were for the first time in the world.<sup>[119]</sup> They also commercially introduced [TLC](#) (triple-level cell) [NAND flash](#) memory in 2010,<sup>[113]</sup> [V-NAND](#) flash in 2013,<sup>[120][121][122][123]</sup> [LPDDR4](#) SDRAM in 2013,<sup>[113]</sup> [HBM2](#) in 2016,<sup>[124][125]</sup> [GDDR6](#) in January 2018,<sup>[126][127][128]</sup> and [LPDDR5](#) in June 2018.<sup>[129]</sup>

Another area where the company has had significant business in for years is the [foundry](#) segment. It had begun investment in the foundry business since 2006, and positioned it as one of the strategic pillars for semiconductor growth.<sup>[130]</sup> Since then, Samsung has been a leader in

[semiconductor device fabrication](#). Samsung began mass-production of a 20 nm class [semiconductor manufacturing process](#) in 2010,<sup>[119]</sup> followed by a [10 nm](#) class [FinFET](#) process in 2013,<sup>[131]</sup> and [7 nm](#) FinFET nodes in 2018. They also began production of the first [5 nm](#) nodes in late 2018,<sup>[132]</sup> with plans to introduce [3 nm GAAFET](#) nodes by 2021.<sup>[133]</sup>

According to market research firm Gartner, during the second quarter of 2010, Samsung Electronics took the top position in the DRAM segment due to brisk sales of the item on the world market. Gartner analysts said in their report, "Samsung cemented its leading position by taking a 35-percent market share. All the other suppliers had minimal change in their shares." The company took the top slot in the ranking, followed by [Hynix](#), Elpida, and Micron, said Gartner.<sup>[134]</sup>

In 2010, market researcher IC Insights predicted that Samsung would become the world's-biggest [semiconductor chip](#) supplier by 2014, surpassing [Intel](#). For the ten-year period from 1999 to 2009, Samsung's compound annual growth rate in semiconductor revenues was 13.5 percent, compared with 3.4 percent for Intel.<sup>[135][136]</sup> For 2015, IC Insights and Gartner announced that Samsung was the fourth largest chip manufacturer in the world.<sup>[137]</sup> Samsung eventually surpassed Intel to become the world's largest [semiconductor company](#) in 2017.<sup>[112]</sup>

## Solid-state drives



A 2 terabyte Samsung 970 EVO solid-state drive

In 2016, Samsung also launched to market a 15.36TB SSD with a price tag of US\$10,000 using a SAS interface, using a 2.5-inch form factor but with the thickness of 3.5-inch drives. This was the first time a commercially available SSD had more capacity than the largest currently available HDD.<sup>[138][139]</sup> In 2018, Samsung introduced to market a 30.72 TB SSD using a SAS interface. Samsung introduced an [M.2 NVMe](#) SSD with read speeds of 3500 MB/s and write speeds of 3300 MB/s in the same year.<sup>[140][141]</sup> In 2019, Samsung introduced SSDs capable of 8 GB/s sequential read and write speeds and 1.5 million IOPS, capable of moving data from damaged chips to undamaged chips, to allow the SSD to continue working normally, albeit at a lower capacity.<sup>[142][143][144]</sup>

Samsung's consumer SSD lineup currently consist of the 970 PRO, 970 EVO plus, 970 EVO, 960 PRO, 960 EVO, 950 PRO, 860 QVO, 860 PRO, 860 EVO, 850 PRO, 850 EVO, and the 750 EVO. The SSDs models beginning with a 9 use an [NVMe Express](#) interface and the rest use a [Serial ATA](#) interface.<sup>[145]</sup> Samsung also produces consumer portable SSDs using a [USB-C USB 3.1 Gen 2](#) connector. The drives offer read speeds of 1,050MB/s and write speeds of 1,000MB/s and are available as 500GB, 1TB and 2TB models.<sup>[146]</sup>

Like many other SSD produces, Samsung's SSDs use [NAND flash](#) memory produced by Samsung Electronics.

## Hard-drives



A 640 GB Samsung Spinpoint hard-drive

In the area of [storage media](#), in 2009 Samsung achieved a ten percent world market share, driven by the introduction of a new [hard disk drive](#) capable of storing 250Gb per 2.5-inch disk. <sup>[147]</sup> In 2010, the company started marketing the 320Gb-per-disk HDD, the largest in the industry. In addition, it was focusing more on selling external hard disk drives. Following financial losses, the hard disk division was sold to [Seagate](#) in 2011 in return for a 9.6% ownership stake in Seagate. <sup>[148]</sup>

## Televisions



Samsung UN105S9 105-inch 4K [ultra-high-definition television](#)



A 40" Samsung LED TV

In 2009, Samsung sold around 31 million flat-panel televisions, enabling it to maintain the world's largest market share for a fourth consecutive year.<sup>[149]</sup>

Samsung launched its first full HD 3D LED television in March 2010.<sup>[150]</sup> Samsung had showcased the product at the 2010 International Consumer Electronics Show (CES 2010) held in Las Vegas.<sup>[151]</sup>

Samsung sold more than one million 3D televisions within six months of its launch. This is the figure close to what many market researchers forecast for the year's worldwide 3D television sales (1.23 million units).<sup>[152]</sup> It also debuted the 3D Home Theater (HT-C6950W) that allows the user to enjoy 3D image and surround sound at the same time. With the launch of 3D Home Theater, Samsung became the first company in the industry to have the full line of 3D offerings, including 3D television, 3D Blu-ray player, 3D content, and 3D glasses.<sup>[153]</sup>

In 2007, Samsung introduced the "Internet TV", enabling the viewer to receive information from the Internet while at the same time watching conventional television programming. Samsung later developed "Smart LED TV" (now renamed to "Samsung Smart TV"),<sup>[154]</sup> which additionally supports downloaded [smart television apps](#). In 2008, the company launched the Power Infocast service, followed in 2009 by a whole new Internet@TV. In 2010, it started marketing the 3D television while unveiling the upgraded Internet@TV 2010, which offers free (or for-fee) download of applications from its Samsung [Apps Store](#), in addition to existing services such as news, weather, stock market, YouTube videos, and movies.<sup>[155]</sup>

Samsung Apps offers for-fee premium services in a few countries including Korea and the United States. The services will be custom-tailored for each region. Samsung plans to offer family-oriented applications such as health care programs and digital picture frames as well as games. Samsung's range of [smart TVs](#) include the apps [ITV Player](#) and motion controlled [Angry Birds](#).<sup>[156]</sup>

As of 2015, Samsung smart televisions run an operating system customized from the [open-source Linux](#)-based [Tizen OS](#).<sup>[157][158]</sup> Given Samsung's high market share in the smart television market, approximately 20% of smart televisions sold worldwide in 2018 run Tizen.<sup>[158]</sup>

## Printers



In the past, Samsung produced printers for both consumers and business use, including mono-laser printers, color laser printers, [multifunction printers](#), and enterprise-use high-speed digital multi-function printer models. They exited the printer business and sold their printer division to [HP](#) in Fall 2017.<sup>[159]</sup> In 2010, the company introduced the world's smallest mono-laser printer ML-1660 and color laser multifunction printer CLX-3185.

## Speakers

Main article: [Harman International](#)

In 2017, Samsung acquired Harman International.<sup>[160]</sup> Harman makes earbuds under many brand names such as [AKG](#), [AMX](#), [Becker](#), [Crown](#), [Harman Kardon](#), [Infinity](#), [JBL](#), [Lexicon](#), [dbx](#), [DigiTech](#), [Mark Levinson](#), [Martin](#), [Revel](#), [Soundcraft](#), [Studer](#), [Arcam](#), [Bang & Olufsen](#) and BSS Audio.

## Cameras



The [Samsung GX-10](#) digital SLR camera

Samsung has introduced several models of [digital cameras](#) and [camcorders](#) including the WB550 camera, the ST550 dual-LCD-mounted camera, and the HMX-H106 (64GB SSD-mounted full HD camcorder). In 2009, the company took the third place in the compact camera segment.<sup>[citation needed]</sup> Since then, the company has focused more on higher-priced items. In 2010, the company launched the NX10, the next-generation interchangeable lens camera.

## Other

In 2010, the company introduced some more energy efficient products, including the laptop R580 and the netbook N210.

In the MP3 player segment, Samsung has launched products including the M1 MP3 player, and the world's-smallest [DivX](#) MP3 player R1.<sup>[161]</sup>

In 2014, the company announced that it was exiting the laptop market in Europe.<sup>[162]</sup>

In 2015, Samsung announced a proposal for a [constellation](#) of 4600 satellites [orbiting](#) Earth at 1,400 kilometers (900 mi) altitude that could bring 200 gigabytes per month of internet data to

"each of the world's 5 billion people".<sup>[163][164]</sup> The proposal has not yet advanced to full [development](#). If built, such a constellation would compete with previously-announced satellite constellations currently under development by [OneWeb](#) and [SpaceX](#).<sup>[163][needs update]</sup>

On 13 July 2017, an LED screen for [digital cinema](#) developed by Samsung Electronics was publicly demonstrated on one screen at [Lotte Cinema](#) World Tower in [Seoul](#).<sup>[165]</sup>