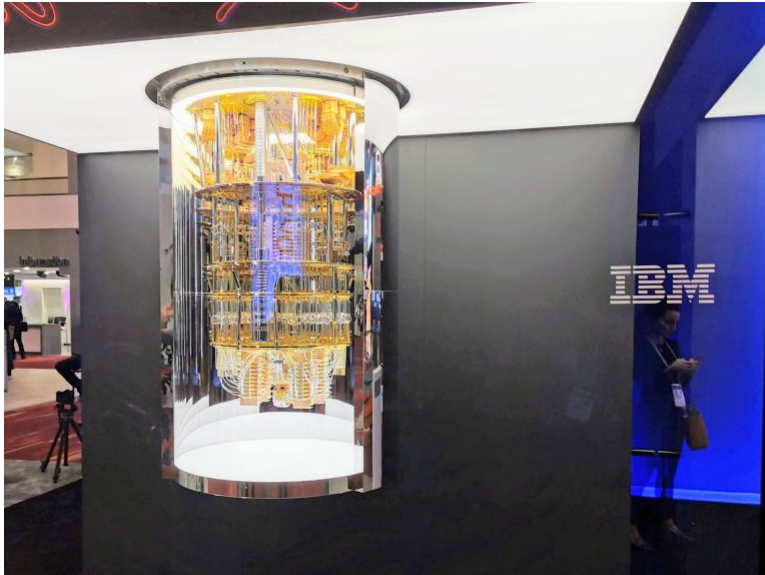




What Tech is at CES and Where is it From?

Every year, after Christmas presents are given and exchanged in December, tech nerds trek out to Las Vegas for one last gift: the annual Consumer Electronics Show. “It’s part of my job,” we tell people in our best world-weary, I-am-so-important voices. And then we watch drones fly in cages, play with AR/VR headsets, and stand mesmerized wondering how (and why) Ford managed to [hang a car on a wall](#).



IBM displays a shiny cylinder with copper pipes er, I mean a quantum computer.

OK, there’s more to CES than seeing cool tech (and wall-hangings). Businesspeople come to make deals, hundreds of panels of experts discuss almost every tech topic imaginable, and there might be [a few parties](#).

The show floor is crawling with reporters looking for the [best](#), the [weirdest](#), and every [adjective-est](#) they can find.

But the show also implicitly provides us information about what the consumer tech industry itself thinks is or will soon be important and the countries in which the relevant work is occurring. Specifically, the [exhibitor list](#) provides us the name of each company in the exhibit halls, the country in which it is located, and the technology sectors in which it operates.

CES is Growing

The number of exhibitors at CES is steadily growing. The number of exhibitors has almost doubled since 2011, at close to 4500 in 2020.

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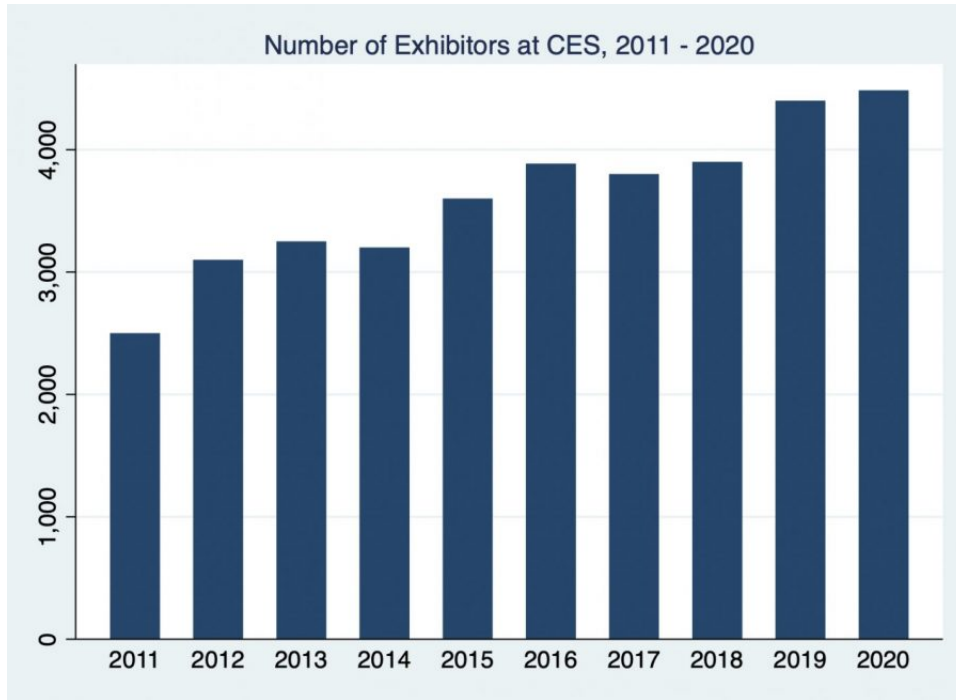
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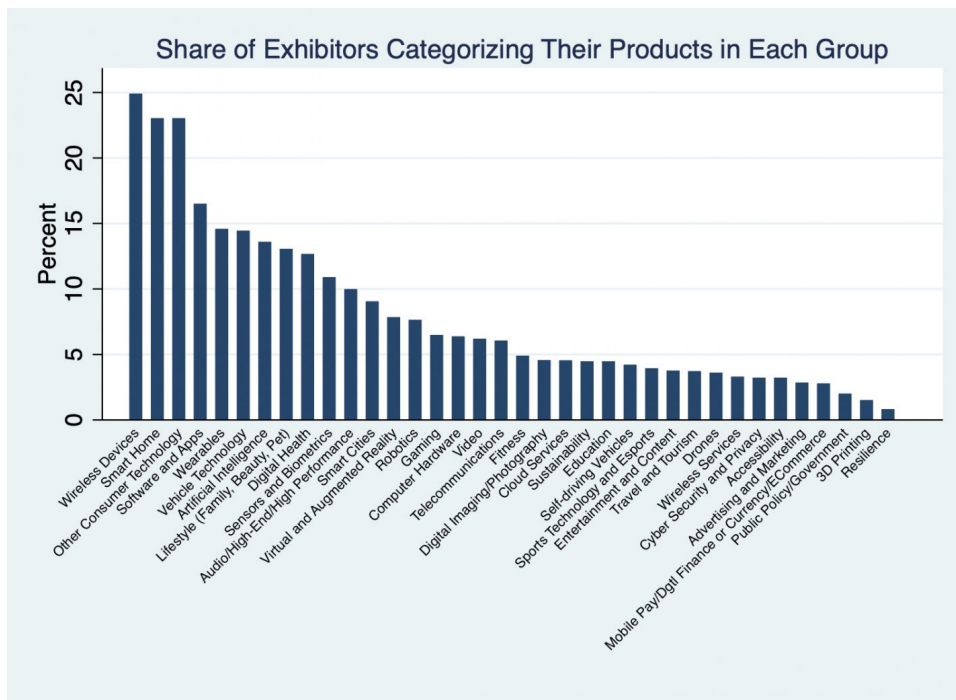
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Wireless, Smart Homes, and Vehicles are a Big Deal

Exhibitors also categorize their products into several types of tech. The table below shows the share of exhibitors categorizing themselves into each type. They can categorize themselves into multiple categories. Samsung, for example, tagged itself in ten categories, for example. The median number of categories per exhibitor is three.



Although “wireless devices” is the most common category, it is too broad to convey much information. But over 1,000 exhibitors said they work on “Smart Home” products, making it the most popular of an identifiable class of products. Ignoring the ever-popular “other” category, “Software and Apps” and “Wearables” come in as the two next most popular categories.



Is this how the Edsel happened?

Technology related to vehicles and transportation is more popular than the figure implies. More than 800 exhibitors, or about 18 percent of all exhibitors, classified themselves as “Vehicle Technology,” “Self-Driving Vehicles,” or “Drones.” These also clearly dominated in terms of space on the show floor, although that is to be expected given how much space is required to display a car compared to a Fitbit.

Because exhibitors can list multiple categories, counting combinations of categories can be instructive. The table below shows the number of exhibitors listing at least the two listed categories. The table shows the most common combination to be “Smart Home” and “Wireless Devices.” The entire list of 611 combinations is available [here](#).

Categories		Number Exhibitors Listing Both Categories
Smart Home	Wireless Devices	401
Other Consumer Technology	Wireless Devices	317
Wearables	Wireless Devices	280
Other Consumer Technology	Smart Home	278
Lifestyle (Family, Beauty, Pet)	Smart Home	226
Lifestyle (Family, Beauty, Pet)	Other Consumer Technology	221
Audio/High-End/High Performance	Wireless Devices	211
Digital Health	Wearables	205
Artificial Intelligence	Software and Apps	202
Lifestyle (Family, Beauty, Pet)	Wireless Devices	174
Smart Home	Wearables	173
Sensors and Biometrics	Smart Home	173
Smart Home	Software and Apps	173
Sensors and Biometrics	Wireless Devices	171
Digital Health	Lifestyle (Family, Beauty, Pet)	167
Other Consumer Technology	Software and Apps	165
Sensors and Biometrics	Wearables	159
Artificial Intelligence	Smart Home	156
Digital Health	Smart Home	155
Other Consumer Technology	Wearables	153
Smart Cities	Smart Home	151
Telecommunications	Wireless Devices	144
Digital Health	Sensors and Biometrics	142
Software and Apps	Wireless Devices	141
Vehicle Technology	Wireless Devices	139
Smart Home	Vehicle Technology	133
Artificial Intelligence	Digital Health	131
Audio/High-End/High Performance	Other Consumer Technology	130
Artificial Intelligence	Robotics	130

U.S. and China Dominate

The number of exhibitors by country shows a distribution with a long tail. The U.S. and China have, by far, the largest number of exhibitors at CES (1,636 and 1,096, respectively), with the number by country dropping off rapidly. South Korea is a distant third, with 376 exhibitors, followed by France with 258, Taiwan with 242, Canada with 93, Israel with 74, Japan with 73, The Netherlands with 66, and Italy rounding out the top ten with 65.

Country	Number Exhibitors	Country	Number Exhibitors
US	1636	Spain	6
China	1096	Hungary	5
Korea	376	Romania	3
France	258	Senegal	3
Taiwan	242	Armenia	2
Canada	93	Brazil	2
Israel	74	Croatia	2
Japan	73	Greece	2
Netherlands	66	Ireland	2
Italy	65	Latvia	2
Hong Kong	64	Malta	2
UK	63	New Zealand	2
Germany	58	Philippines	2
Switzerland	48	Russia	2
Belgium	23	Andorra	1
India	22	Argentina	1
Luxembourg	21	Bangladesh	1
Singapore	20	Belarus	1
Finland	15	Bosnia & Herzegovina	1
Austria	13	Cayman Islands	1
Ukraine	13	Chile	1
Australia	11	Cyprus	1
Morocco	11	Estonia	1
Poland	10	Lithuania	1
Czech Republic	9	Mexico	1
Egypt	9	North Macedonia	1
Sweden	9	Pakistan	1
Turkey	9	Qatar	1
Thailand	8	Saudi Arabia	1
Denmark	7	Sri Lanka	1
Norway	6	United Arab Emirates	1

Taiwan, Luxembourg, Korea, and Israel: The Hidden Powerhouses

It is not surprising that the biggest countries — the U.S. and China — have the largest number of exhibitors. The size of their economies and populations mean we should expect them to dominate in terms of sheer numbers. Normalizing the number of exhibitors by the size of a country’s economy, however, yields a different ranking, as the table below shows

Rank	Country	Number Exhibitors	GDP (USD billions)
1	Taiwan	242	\$590
2	Luxembourg	21	\$71
3	Korea	376	\$1,619
4	Israel	74	\$371
5	Hong Kong	64	\$363
6	Ukraine	13	\$131
7	Morocco	11	\$118
8	France	258	\$2,778
9	China	1096	\$13,608
10	United States	1636	\$20,544
11	Netherlands	66	\$914
12	Switzerland	48	\$705
13	Singapore	20	\$364
14	Canada	93	\$1,713
15	Finland	15	\$277
16	Belgium	23	\$543
17	Italy	65	\$2,084
18	Austria	13	\$455
19	United Kingdom	63	\$2,855
20	Poland	10	\$586

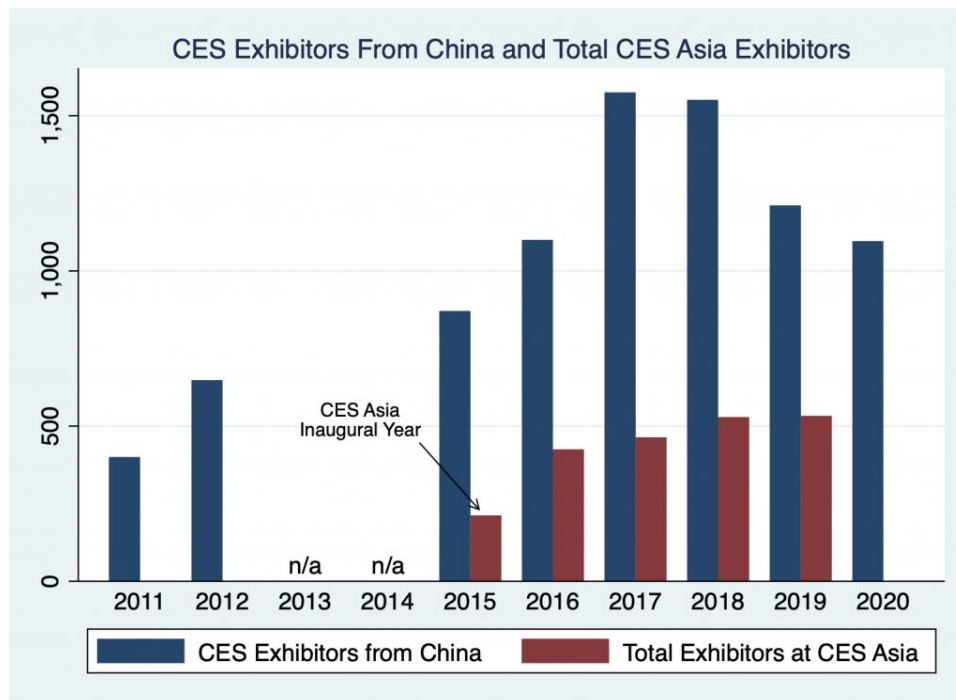
There is no single “correct” way to do this normalization — should it be by the size of the economy, population, or maybe per capita income, for example? It is also reasonable to argue that normalization is unnecessary given

the agglomeration economies that occur from having lots of innovation in one place. Moreover, at some point the normalization becomes absurd. A tiny country with one exhibitor could vault to the top of the list, but the small numbers issue makes it impossible to draw any conclusions.

Still, the normalized numbers show us some of the smaller countries that probably should not be ignored in terms of innovation.

The Number of Chinese Exhibitors is Dropping. Why?

The number of exhibitors from China at CES increased from 400 in 2011 to 1,575 in 2018, and then decreased in 2019 and 2020. One possible reason is trade tensions and increased difficulties in obtaining visas from China to attend. Another reason, however, is probably CTA’s relatively new [CES Asia](#) event. Taking place in Shanghai, China, CES Asia launched in 2015. The next one will take place June 10-12, 2020. It has grown steadily. In 2019 more than 500 exhibitors showed up, about 75 percent of which were Chinese companies. Some Chinese companies, particularly smaller ones with fewer resources, may choose to exhibit at CES Asia instead of CES.



Caveat

Any inferences from counts of exhibitors should be taken with a helping of salt. Comparing counts assumes that each exhibitor and exhibition is identical, which is not at all true. LG’s massive and interactive exhibit with a large number of employees on hand to answer questions on dozens of products is much different from a 10 foot x 10 foot booth with one employee who may or may not be too busy eating lunch to interact with passers-by.

Still, information derived from the types of exhibitors and the information they provide gives some indication of what technologies companies have been focusing on and what they expect to be popular in the coming years.

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