Smart Homes Industry Overview

There are an estimated 300 million smart homes in the world, comprising a $100 billion marketplace that is expected to more than double over the next several years. What began with the purchase of single-use items such as video doorbells, security systems, and thermostats has led to complete ecosystems that users can manage from, what else, smartphones. Like many other technological innovations, smart home components were introduced as relatively pricey nice-to-haves and have since evolved into much more affordable gotta-haves.

Adoption is attributed to several things, depending on one's point of view: sustainability, eco-friendly living, and sheer convenience are among the most common explanations. Whatever the reason, this growth market creates opportunities while presenting challenges for product makers and consumers alike. It also creates a demand for customer and product support, from networking devices to troubleshooting issues to guidance on proper setup and maintenance. More on that later.

Did you know

- he number of **digital voice** assistants will soon surpass the global population
- **Asia-Pacific** is the fastest-growing smart home market
- **81%** of consumers say they're more likely to buy a home with smart technology

By 2025, this industry will have entered nearly a half-billion homes worldwide, an 80% jump from today. For some perspective, consider that in 2019, about 40 million homes had even a single smart device. That is how fast the industry has grown. It also reflects the increasing amount of time that people spend at home, whether working remotely or at leisure.

Industry trends

Everything that follows relies on robust, reliable connectivity. That is among the benefits of 5G, which lives at the intersection of high-bandwidth communications and increased computing power across networks. It's one thing to have stand-alone products; the next step is integrated systems that connect the individual components.

A faster network that can handle greater data loads is necessary for interconnecting home devices. While this document is primarily devoted to smart homes, we would be remiss in leaving out the commercial and industrial applications:

- Remote inspection, monitoring, and even troubleshooting of far-away equipment. Sensors can provide early warning of potential trouble, AI lends a predictive maintenance element, and these and other things can be done without costly wiring or retrofitting.
- The shipping and logistics industry is already familiar with bar codes and RFID; this adds another layer of precision to tracking within the supply chain.
- Building and facility management is enhanced through tools that can govern energy use, capacity, and depending on the site, the visitor experience. The latter is particularly true in mass-use locations like airports, stadiums, and large campuses.

For the homeowner, installation is relatively user-friendly, which is relative depending on what an individual hopes to accomplish. Often, devices can be installed with little more than a smartphone, Wi-Fi, and an electrical outlet. Things get more complicated and expensive as more devices are added. Popular products include:

- **Smart kitchens and bathrooms:** even if you discount the technology, these rooms are typically the first ones to be renovated or upgraded. Potential benefits include managing energy consumption, creating shopping lists, and getting alerts about upcoming product expiration dates.
- **Touchless faucets:** these are becoming a staple in institutional settings like restaurants and gyms, and they're now homeward-bound. They are also suitable for water conservation when doing something like brushing your teeth, plus washing dirty hands does not also require cleaning the faucet handles afterward.
- **Lighting:** if you're thinking of it, chances are that product makers are, too. From setting up daily schedules for every room in a house to dimming lights or changing colors to reflect the mood, it can be done.
- **Lawn care systems:** built-in sensors can measure soil's relative moisture and dryness to determine if watering is necessary and also to control the volume of water used. These systems can be programmed to use more or less water on certain zones in a yard and to respond to weather so sprinklers are not running during rainstorms.

- **Health tech:** along with climate control, thermostats are designed with quality sensors to improve air quality. This can include purification and responses to humidity.

If you are comfortable with artificial intelligence, then you may find artificial learning interesting. This is when technology learns and understands individual preferences and customizes accordingly. It is next-level Siri and Alexa, where voice assistants evolve into smart hubs, which is where this section started in describing the expectation of systems in which devices talk to each other.

Potential challenges

Security is at once a desired feature and a possible weak spot within home networks. The more data such a system contains, the more valuable it becomes to hackers. And the more connected items, the greater the likelihood of a vulnerability being exploited. The primary areas of concern are local networks and weak devices. Issues can range from stolen personal data to deactivating security systems to a hacker resetting the climate control system to freezing or sweltering temperatures. The commercial trend of two-factor authentication will also likely become standard among smart homes, along with basics like strong passwords. Other issues include:

- On the development side, compatibility among devices remains a work in progress, though Matter solutions may simplify the process. There are strategic partnerships among brand manufacturers that will take the integration we discussed before to the land of coordination. This question goes beyond interoperability, expanding into systems "learning" the voices and preferences of the multiple members within a household.
- Like everything else, convenience comes with a price tag. Individual mileage will vary based on desired features, brand preference, the ability to DIY vs. hiring a contractor, and whether the project is a simple installation or requires the rewiring of a room or home. There is a great deal of information that highlights potential savings from using smart products, but every innovation in automobiles has added to their cost, and it is not unreasonable to expect the same dynamic when applied to houses.
- These devices run on battery power, and heavy use will mean frequent changes, along with some maintenance. The one advantage here is that forgetting to turn off the lights or adjusting the HVAC when leaving home can be remedied remotely.

Ironically, the last part – reliance on apps to run these systems – is not as popular as one might think. That's why many devices also come with physical controls for those times when a smartphone is not surgically attached to you.

How do we fit in

Supporting clients in the SaaS and technology sectors is our strong suit and has been for more than 20 years. The digital universe is central to our DNA, making us a good match for companies in that space.

- One client has merged a meal delivery subscription service with the Internet of Things. This client ships ready-to-cook meals to customers' homes, and each meal is stamped with a dedicated QR code with cooking instructions that the company's smart ovens are programmed to follow.
- This is a subscription service, so part of our challenge is to convert first-time subscribers into recurring customers while delivering a seamless user journey that caters to logistics, technical support, and general customer care.
- A second client manufactures premium in-dash multimedia and navigation solutions for the off-road aftermarket. We support end-users with a wide range of product issues, often when they are far from civilization.
- This relationship began when the company's sales growth exceeded its ability to provide customer care on a purely in-house basis. What makes it interesting is that the program is based in Mangalore, where off-road driving is not commonplace in the culture. Not only did the team have to get up to speed on the product line, but agents also needed a crash course on the off-road ethos.

Smart home technology is becoming more cost-effective, which impacts adoption rates. The industry's one unknown is where its ceiling is. Society has only begun approaching the outer limits of the benefits technology can provide; all that is needed is qualified professionals to support that technology and the people who use it.