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Imagine being able to control your entire home with just a few taps on your smartphone. From adjusting the temperature to turning off the lights, smart home devices have made our lives easier and more convenient than ever before. But with so many options available in the market, it can be overwhelming to navigate through the world of smart home technology. Fear not, because we have created "The Ultimate Guide to Smart Home Devices" to help you choose the best devices for your needs. In this article, we will provide you with everything you need to know about smart home devices and how they can transform your home into a futuristic oasis of automation and convenience. So, get ready to embrace the future of living and embark on a journey to creating a smart and connected home. What are Smart Home Devices? Definition of Smart Home Devices Smart home devices are electrical or electronic devices that are connected to a network and can be controlled remotely or automated to perform various functions. These devices utilize technologies such as Wi-Fi, Bluetooth, and Zigbee to communicate with each other and with the user, offering a high level of convenience and automation in managing a home's functions and systems. Examples of Smart Home Devices There is a wide range of smart home devices available in the market today, each catering to different aspects of a home's functionality. Some examples of smart home devices include: Smart Speakers and Voice Assistants: Devices like Amazon Echo and Google Nest Hub that can play music, answer questions, and control other smart devices through voice commands. Smart Lighting: LED bulbs and lighting systems that can be controlled remotely or automatically adjusted based on the time of day or user preferences. Smart Thermostats: Devices like Ecobee and Nest Thermostat that allow users to remotely control their home's heating and cooling systems, saving energy and reducing costs. Smart Security Systems: Cameras, doorbells, and sensors that provide enhanced monitoring and security features, such as Ring Video Doorbell and Arlo Pro Security Camera. Smart Appliances: Devices like smart refrigerators, washing machines, and ovens that can be controlled remotely and offer advanced features like inventory management and recipe suggestions. Smart Cameras: Indoor and outdoor surveillance cameras that provide live-streaming, recording, and motion detection capabilities for enhanced home security. Smart Locks: Keyless entry systems that allow users to lock and unlock doors remotely or through smartphone apps. Smart Doorbells: Doorbells with integrated cameras and two-way audio communication for remote monitoring and communication with visitors. Smart Entertainment Systems: Devices like smart TVs, speakers, and streaming devices that offer seamless integration with streaming services and voice control capabilities. Smart Home Hubs: Centralized control centers that connect and manage all smart devices in a home, such as Samsung SmartThings and Apple HomeKit. Benefits of Smart Home Devices Convenience and Efficiency One of the main benefits of smart home devices is the convenience they offer. With smart devices, you can easily control and automate various aspects of your home with just a few taps on your smartphone or through voice commands. For example, you can turn on the lights, adjust the thermostat, lock the doors, or even start your coffee maker, all from the comfort of your bed or while away from home. This level of control and automation saves time and effort, making your daily routines more efficient and stress-free. Energy and Cost Savings Another significant advantage of smart home devices is their ability to optimize energy usage and reduce utility costs. Smart thermostats, for instance, can learn your daily patterns and automatically adjust the temperature when you're away or asleep, resulting in energy savings and lower heating or cooling bills. Similarly, smart lighting systems can be programmed to turn off when a room is unoccupied, further reducing energy consumption. By monitoring and managing your home's energy usage, smart devices can help you save money in the long run. Enhanced Security Smart home devices provide an extra layer of security and peace of mind. With smart security systems, you can remotely monitor your home through cameras, receive real-time alerts for suspicious activity, and even communicate with visitors through smart doorbells. These devices act as deterrents and provide valuable evidence in the event of a break-in or other security breaches. Additionally, smart locks offer keyless entry, eliminating the risk of misplaced or copied keys, and allowing you to grant or revoke access remotely. By integrating these security features, smart home devices provide a comprehensive and convenient approach to home security. Improved Comfort and Control Smart home devices enable you to customize and enhance your living environment to suit your individual preferences. With devices like smart thermostats, you can set different temperature zones for various rooms or adjust the settings remotely to ensure optimal comfort throughout the day. Smart lighting systems allow you to change the color, brightness, and ambiance of your home's lighting to create different moods or cater to specific activities or preferences. By giving you precise control over your home's comfort settings, smart devices enhance your overall living experience. See also Smart Home Entertainment Systems: Everything You Need to Know Integration and Automation One of the standout features of smart home devices is their ability to integrate and work together seamlessly. Through a centralized control hub or voice assistants like Amazon Alexa or Google Assistant, you can synchronize multiple smart devices, enabling them to communicate and coordinate with each other. For example, you can create automation routines that turn on the lights, adjust the thermostat, and play your favorite music when you arrive home. By linking different devices and creating personalized automation scenarios, you can simplify and streamline your daily routines and processes around the house. Smart Devices and Smart Speakers and Voice Assistants Smart speakers and voice assistants have become increasingly popular in smart homes. Devices like Amazon Echo and Google Nest Hub, act as central control centers and provide voice-activated functionalities. They can play music, answer questions, set timers, provide weather updates, and even control other smart devices in your home through voice commands. Smart Lighting Smart lighting systems allow you to control the brightness, color, and scheduling of your home's lighting through smartphones, apps, or voice commands. LED bulbs and fixtures, such as those offered by Philips Hue, can be programmed to turn on and off at specific times, adjust intensity based on ambient light, or create dynamic lighting scenes for different activities or moods. Smart Thermostats Smart thermostats, like the Ecobee and Nest Thermostat, provide intelligent control over your home's temperature. These devices can learn your routines, automatically adjust the temperature when you're away, and even be controlled remotely through smartphone apps. By optimizing your heating and cooling systems, smart thermostats help save energy and reduce utility costs. Smart Security Systems Smart security systems, including cameras, doorbells, and sensors, offer comprehensive monitoring and protection for your home. Devices such as the Ring Video Doorbell and Arlo Pro Security Camera provide live streaming, motion detection, and two-way audio communication, keeping you informed and connected to your home's security at all times. Smart Appliances Smart appliances are designed to enhance convenience and efficiency in your daily life. These devices, like smart refrigerators, washing machines, and ovens, can be controlled remotely, offer advanced features, and integrate with other smart devices. For example, a smart refrigerator can send notifications when you're running low on groceries, while a smart oven can suggest recipes and adjust cooking settings automatically. Smart Cameras Smart cameras, both indoor and outdoor, provide surveillance and monitoring capabilities for your home. These devices offer features such as live streaming, recording, motion detection, and even facial recognition. With brands like Arlo and Nest Cam, you can stay connected and keep a watchful eye on your property from anywhere. Smart Doorbells Smart doorbells, such as the Ring Video Doorbell, combine a video camera, two-way audio communication, and motion detection capabilities. These devices allow you to see and communicate with visitors from your smartphone, even when you're not home. They can receive alerts, monitor package deliveries, and deter potential intruders. Smart Entertainment Systems Smart entertainment systems, like smart TVs, speakers, and streaming devices, offer seamless integration with streaming services and voice control capabilities. Devices such as Roku and Sonos can be controlled through voice assistants and provide a personalized and immersive entertainment experience. Smart Home Hubs Smart home hubs serve as central control centers for all your smart devices. Brands like Samsung SmartThings and Apple HomeKit allow you to connect and manage various devices through a single interface. These hubs enable interconnectivity and automation between different devices, providing a cohesive and streamlined smart home experience. Considerations for Choosing Smart Home Devices Compatibility with Existing Devices and Systems When choosing smart home devices, it's essential to consider compatibility with your existing devices and systems. Ensure that the smart devices you select can seamlessly integrate with your smartphone, voice assistant, or hub, and communicate effectively with other devices in your home. It's helpful to research the compatibility requirements and available options for your specific ecosystem before making a purchase. User-Friendliness and Ease of Setup Smart home devices should be user-friendly and easy to set up, especially if you're new to smart home technology. Look for devices that offer intuitive smartphone apps, clear instructions, and straightforward installation processes. Devices that provide guided setup or offer customer support can significantly simplify the process, even for those with limited technical expertise. Integration with Voice Assistants Voice control is an increasingly popular feature in smart homes. If you use smart devices are connected to your home network and potentially store personal data, security and privacy features should be a top priority. Look for devices that offer strong encryption, secure communication protocols, and regular software updates to protect your data and minimize the risk of unauthorized access. It's also crucial to review the privacy policies provided by the manufacturers to ensure your personal information is handled responsibly. Price and Budget Consider your budget and the cost of individual smart devices when making purchasing decisions. Smart home devices range in price, and it's important to find a balance between affordability and desired features. Look for devices that provide good value for money and consider any additional costs, such as subscription fees for advanced features or cloud storage. Brand Reputation and Customer Reviews To ensure reliability and quality, it's helpful to research the reputation of the brands and read customer reviews before making a purchase. Look for brands that have a proven track record in the smart home industry and positive customer feedback on aspects such as product performance, customer support, and software updates. This research will help you make informed decisions and choose devices that are likely to meet your expectations. Setting Up a Smart Home Assessing Your Needs and Priorities Before setting up a smart home, it's important to assess your needs and priorities. Consider the specific aspects of your home that you'd like to automate or control remotely, such as lighting, temperature, security, or entertainment. Identify the pain points or inefficiencies in your current setup and determine how smart home devices can address them. This evaluation will help you prioritize the types of devices you need and guide your purchasing decisions. See also Smart Home App Essentials For Easy Control And MonitoringCreating a Smart Home Network A reliable and secure network is crucial for a smart home setup. Begin by ensuring that your home network has sufficient coverage and capacity to support all the smart devices you plan to connect. Consider upgrading your router to a more powerful model and ensuring that all devices are connected to the same network. Additionally, explore the automation features offered by your chosen devices or hub. Create routines or scenes that enable multiple devices to work together based on preset schedules or triggered events. Customizing and Personalizing Your Smart Home Once your smart home is set up and devices are connected, customize and personalize your smart home to suit your preferences. Set schedules for lighting and temperature adjustments, create custom scenes for different activities or moods, and fine-tune automation routines based on your daily routines and preferences. Experiment with different settings and features to make your smart home experience truly tailored to your needs. Popular Smart Home Device Brands Google Nest Google Nest offers a range of smart home devices, including thermostats, speakers, cameras, and doorbells. Nest devices are known for their seamless integration and compatibility with other Google products and services. The Google Nest Hub, for example, acts as a central control center with a built-in display, allowing you to control and monitor your smart home devices through voice or touch. Amazon Echo Amazon Echo is a popular brand that offers a variety of smart speakers, displays, and other smart home devices. Powered by Amazon's Alexa voice assistant, Echo devices allow you to control your smart home, play music, set reminders, and water so the home doesn't flood. Consider Echo as a central control hub for your smart home. Philips Hue Philips Hue offers a wide range of colors and brightness levels, allowing you to create customized lighting scenes and ambiance for every occasion. August Home August Home specializes in smart locks and doorbell cameras. Their products offer keyless entry and advanced security features, such as doorbell cameras with motion detection and two-way audio. August smart locks can be controlled through smartphone apps, voice assistants, or integrated with other smart home devices, providing convenient and secure access to your home. Ring Ring is known for its comprehensive smart home security systems. Their range includes video doorbells, security cameras, and alarm systems. Ring devices offer features such as live streaming, motion detection, and two-way communication. The Ring app allows you to monitor your home's security from anywhere, receive real-time alerts, and communicate with visitors at your front door. Ecobee Ecobee is a prominent brand in the smart thermostat market. Their devices offer advanced features, such as room sensors and intelligent learning capabilities. The Ecobee SmartThermostat can detect occupancy, adjust temperature settings accordingly, and save energy by avoiding unnecessary heating or cooling. Ecobee thermostats can be controlled remotely through smartphone apps or integrated with voice assistants. Samsung SmartThings Samsung SmartThings is a versatile smart home hub that connects and manages various smart devices. The SmartThings hub supports a wide range of devices, including cameras, sensors, lights, door locks, and more. With the SmartThings app, you can control and automate your smart home devices, create customized routines, and monitor your home's security and energy usage. Apple HomeKit Apple HomeKit is a smart home platform that focuses on providing a seamless and secure ecosystem for connected devices. With HomeKit, you can control and automate devices using Siri on your Apple devices, such as iPhone, iPad, or Apple Watch. HomeKit offers a wide range of compatible devices, including lights, thermostats, cameras, and locks, allowing you to create a unified and personalized smart home. Smart Home Device Interconnectivity and Standardization One of the significant advantages of smart home devices is their ability to interconnect and communicate with each other. Smart home devices can be interconnected through a centralized hub or connected directly to each other through a common communication protocol. For example, a motion sensor can trigger lights to turn on or cameras to start recording. This interconnectivity allows for seamless automation and coordination between different devices, enhancing the overall functionality and convenience of a smart home. Creating Scenes and Routines Scenes and routines are pre-defined configurations that allow multiple devices to be controlled simultaneously with a single command or at specific times. For example, you can create a "Goodnight" routine that turns off all the lights, adjusts the thermostat, locks the doors, and arms the security system by simply saying, "Goodnight" to your voice assistant. Scenes and routines enable you to personalize your smart home experience, simplifying daily tasks and enhancing convenience. Integration with Third-Party Services and Apps Smart home devices often offer integration with popular third-party services and apps, expanding their functionality and compatibility. For example, some smart speakers can connect to streaming services like Spotify or Apple Music, allowing you to control your music playback with voice commands. Similarly, some smart cameras can integrate with security monitoring services or cloud storage platforms, providing additional features and storage options. Leveraging these integrations can enhance the capabilities of your smart home devices and seamlessly integrate them into your existing digital ecosystem. See also The Best Smart Home Security Cameras To Keep Your Home SafeAdvanced Smart Home Features Geolocation Automation Geolocation automation is a feature that utilizes your smartphone's GPS to provide specific actions based on your location. For example, when you leave your home, the smart thermostat can automatically adjust the temperature to save energy, and your security system can be armed. When you return, the thermostat can adjust to your preferred settings, and your lights can turn on when you enter a certain layer of convenience and energy efficiency, ensuring that your home is always comfortable and secure when you're not there and conserving energy when you're not home. Energy Monitoring and Optimization Smart home devices, especially smart thermostats and smart lighting systems, offer energy monitoring and optimization features. These devices track and analyze your energy usage, providing insights and suggestions for more efficient usage. For example, a smart thermostat can provide energy usage reports and recommendations for adjusting temperature settings to save energy and reduce bills. By monitoring and optimizing your energy usage, smart home devices can help you live more sustainably and reduce your environmental impact. Voice Recognition and Personalization Advanced smart speakers and voice assistants offer voice recognition and personalization capabilities. These features allow the voice assistant to recognize different users within a household and provide personalized responses and experiences. For example, when each family member asks the voice assistant for their schedule, it can provide tailored information specific to that individual. Voice recognition and personalization enhance the usability and convenience of voice-controlled smart home devices, ensuring a more personalized and intuitive experience for each user. Artificial Intelligence and Machine Learning Artificial intelligence (AI) and machine learning (ML) are increasingly being integrated into smart home devices. These technologies enable devices to learn and adapt to user preferences and behaviors over time, providing personalized and optimized experiences. For example, a smart thermostat can learn your daily routines and adjust temperature settings accordingly, without the need for manual programming. AI and ML enhance the automation capabilities of smart home devices, making them more intuitive, efficient, and responsive to user needs. Health and Wellness Monitoring Some smart home devices offer health and wellness monitoring features, providing insights into your health and helping you achieve your fitness goals. Smart scales, for example, can sync with smartphone apps to track your weight, body fat, and other health metrics. Smart scales can also sync with fitness trackers, providing a holistic approach to health and wellness. Troubleshooting and Maintenance Common Smart Home Device Issues and Solutions Smart home devices can encounter various issues from time to time. Some common problems include software glitches, device failure, or connectivity issues. If you encounter any issues, try restarting the device or your home network, ensure the device is updated with the latest firmware or software, and check for any compatibility issues with other devices or systems. If problems persist, consult the manufacturer's troubleshooting guides or contact customer support for assistance. Updating Firmware and Software Regularly updating the firmware and software of your smart home devices is crucial to ensure optimal performance and security. Updates often include bug fixes, performance improvements, and security patches. Most smart devices offer automatic updates, but it's essential to check for available updates manually and ensure that they are installed promptly. Keeping your devices updated helps protect against vulnerabilities and ensures compatibility with the latest features and technologies. Managing Device Compatibility As you add more smart devices to your home, managing compatibility can become a challenge. It's important to ensure that the devices you choose are compatible with your existing devices or ecosystems. Check for compatibility requirements, communication protocols, and integration options before making a purchase. Additionally, consider the scalability of your system by choosing devices from established brands or platforms that offer a wide range of compatible devices, reducing the risk of compatibility issues in the future. Resetting and Restarting Devices If you encounter persistent issues with a smart home device, resetting or restarting the device can often resolve the problem. Consult the manufacturer's instructions on how to reset or restart the device properly. Resetting a device typically involves pressing a specific button or combination of buttons to restore the device to its factory settings. Smart Home Security Smart home security is a critical aspect of smart home technology. Smart home security systems include cameras, doorbells, sensors, and locks, providing enhanced protection for your home. Smart home security systems will also integrate with renewable energy sources, battery storage systems, and electric vehicle charging infrastructure to create a holistic approach to sustainable energy consumption. Integration with Smart Grids As smart grid technologies continue to develop, integration between smart home devices and the electrical grid will become more prevalent. Smart home devices will communicate with the grid to take advantage of time-of-use pricing or participate in demand response programs. For example, a smart appliance could delay a dishwasher cycle until a time when electricity rates are lower or receive signals from the grid to adjust energy usage during peak demand periods. Integration with smart grids will enable smarter energy consumption and contribute to overall grid stability and efficiency. In conclusion, smart home devices offer a wide range of benefits, including convenience, energy savings, enhanced security, and improved comfort and control. From smart speakers and lighting to security systems and entertainment devices, there is a smart home device for every aspect of your life. By considering factors such as compatibility, user-friendliness, and security features, you can choose the right smart home devices to fit your needs and priorities. Once set up, you can enjoy the integration and automation capabilities of these devices, creating a personalized and efficient smart home experience. With advancements in voice control, artificial intelligence, and IoT integration on the horizon, the future of smart home devices holds even more exciting possibilities for users. I find the simplest way to explain the concept of a smart home is that it's a natural evolution of our homes. A smart home isn't fundamentally different from a "regular" home — it's just the improvement of one. In the same way that electricity made our homes better and more functional, so is connectivity improving the way we live in and use our homes. I've lived in a smart home for a decade. Every morning at 5AM, the lights in my living room and kitchen turn on, the pet water so the home doesn't flood, Smart plugs provide the context smart devices need to make our homes better and more functional. Right now, I'd say that's the biggest reason to consider not adopting the smart home in its current form. Today's smart home is mainly about remote control and programming devices to help you. You can use voice control to turn lights off when you're lying in bed so you don't have to get up. You can schedule a robot vacuum to run every day at 10AM so you don't have to think about sweeping your floors. But the smart home of tomorrow has the potential to become proactive and do things for us without our prompting — or even, perhaps, without us even knowing. Here is where artificial intelligence could transform the smart home. We already have hints of it today. A smart leak detector that knows when the dishwasher is overflowing can shut off the water. A smart thermostat that knows when no one is home can adjust the temperature to save energy. Amazon's Astro home robot can recognize and find people in the home. But many of these experiences are siloed, relying on specific hardware and software. By deploying its predictive capabilities on unifying smart home platforms, AI could be used to collect, analyze, and interpret data from different smart home devices so you don't have to. Even if you don't like the idea of a "smarter" home, how about a better one?For example, today, you can set up an automation that will unlock your door, turn on your lights, start your sprinklers, shut off your HVAC system, and have your cameras start recording video when a smoke alarm goes off in your house. But the key word is you — all that will only happen if you put in the work to set up the automation. In the future, a smart home could have the intelligence to do all of these things automatically, and — crucially — only if there is an actual fire, not just when you burn the toast.For this interoperable future to be a reality, however, we need a common connectivity protocol so that all devices can talk to each other and not be limited by only working with certain platforms. This is where Matter becomes key to the future smart home. The other major piece of the puzzle is data collection. A smart home is only as smart as the information it has. Today, we have to stick motion and contact sensors in our rooms to tell us when things move or open and close, but newer, less intrusive technologies, such as smart locks, smart fridges, washing machines, and ovens can tell us when you're home, when you're not, and when you're asleep. A multitude of appliances can send the data to a central hub, which can then use that information to make decisions. It's a natural evolution. And, even if you don't like the idea of a "smarter" home, how about a better one?Photography by Jennifer Pattison Tuohy / The VergeSee More: AmazonAmazon AlexaAppleGoogleGoogle AssistantSmart HomeTech Home Enterprise internet of things A smart home is a residence that uses internet-connected devices to enable the remote monitoring and management of appliances and systems, such as lighting and heating. Smart home technology — also often referred to as home automation or domotics from the Latin word domus, meaning home — provides homeowners security, comfort, convenience and energy efficiency by letting them control smart devices, often using a smart home app on their smartphone or another networked device. A part of the internet of things (IoT), smart home systems and devices often operate together, sharing consumer usage data among themselves and automating actions based on the homeowners' preferences. How does smart home technology work? A smart home isn't a collection of disparate smart devices and appliances, but rather ones that work together to create a remotely controllable network. All devices — such as lights, thermostats, security systems and appliances — are controlled by a master home automation controller, often called a smart home hub. This hub is a hardware device that acts as the central point of the smart home system and can sense, process data and communicate wirelessly. It combines all the disparate apps into a single smart home app that homeowners can control remotely. Examples of smart home hubs include Amazon Echo, Google Home and Wink Hub. While many smart home products use Wi-Fi and Bluetooth to connect to the smart home network, others depend on wireless protocols such as Zigbee or Z-Wave. Smart home devices can be either programmed to follow specific schedules or commands or they can be set to respond to voice commands through home assistants such as Amazon Alexa or Google Assistant. For example, a smart thermostat can learn the homeowner's habits and automatically adjust the temperature based on their position in the house. Smart home systems can also be controlled through applications, such as on-demand video and music. Some smart TVs also include voice or gesture recognition. Smart lighting systems. In addition to being able to be controlled remotely and customized, smart lighting systems can detect when occupants are in the room and adjust lighting as needed. Smart lightbulbs can also regulate themselves based on daylight availability. Smart thermostats. Smart thermostats, such as Google Nest, come with integrated Wi-Fi, letting users schedule, monitor and remotely control home temperatures. These devices also learn homeowners' behaviors and automatically modify settings to provide them with maximum comfort and efficiency. Smart thermostats can also report energy use and remind users to change filters. Smart door locks and garage door openers. Homeowners can use smart locks and garage-door openers to grant or deny access to visitors. Smart locks can also detect when residents are near and unlock the doors for them. Smart security cameras and sensors. With smart security cameras and doorbells, such as Ring, residents can monitor their homes when they're away. Smart motion sensors can identify the difference between residents, visitors, pets and burglars and can send notifications to authorities if suspicious behavior is detected. Smart pet and lawn care. Pet care can be automated with connected feeders. Houseplants and lawns can be watered using connected timers. Smart kitchen appliances. Brands such as LG, GE and Samsung offer smart kitchen appliances of all sorts. These appliances include smart coffee makers that can brew a fresh cup automatically at a programmed time; smart refrigerators that keep track of expiration dates, make shopping lists or even create recipes based on ingredients currently on hand; slow cookers and toasters; and, in the laundry room, washing machines and dryers. Smart household monitors. Household system monitors can, for example, sense a power surge and turn off appliances, sense water failures or freezing pipes and turn off the water so the home doesn't flood. Smart plugs. These smart plugs can be used to control smart devices that make our homes better and more functional. Right now, I'd say that's the biggest reason to consider not adopting the smart home in its current form. Today's smart home is mainly about remote control and programming devices to help you. You can use voice control to turn lights off when you're lying in bed so you don't have to get up. You can schedule a robot vacuum to run every day at 10AM so you don't have to think about sweeping your floors. But the smart home of tomorrow has the potential to become proactive and do things for us without our prompting — or even, perhaps, without us even knowing. Here is where artificial intelligence could transform the smart home. We already have hints of it today. A smart leak detector that knows when the dishwasher is overflowing can shut off the water. A smart thermostat that knows when no one is home can adjust the temperature to save energy. Amazon's Astro home robot can recognize and find people in the home. But many of these experiences are siloed, relying on specific hardware and software. By deploying its predictive capabilities on unifying smart home platforms, AI could be used to collect, analyze, and interpret data from different smart home devices so you don't have to. Even if you don't like the idea of a "smarter" home, how about a better one?For example, today, you can set up an automation that will unlock your door, turn on your lights, start your sprinklers, shut off your HVAC system, and have your cameras start recording video when a smoke alarm goes off in your house. But the key word is you — all that will only happen if you put in the work to set up the automation. In the future, a smart home could have the intelligence to do all of these things automatically, and — crucially — only if there is an actual fire, not just when you burn the toast.For this interoperable future to be a reality, however, we need a common connectivity protocol so that all devices can talk to each other and not be limited by only working with certain platforms. This is where Matter becomes key to the future smart home. The other major piece of the puzzle is data collection. A smart home is only as smart as the information it has. Today, we have to stick motion and contact sensors in our rooms to tell us when things move or open and close, but newer, less intrusive technologies, such as smart locks, smart fridges, washing machines, and ovens can tell us when you're home, when you're not, and when you're asleep. A multitude of appliances can send the data to a central hub, which can then use that information to make decisions. It's a natural evolution. And, even if you don't like the idea of a "smarter" home, how about a better one?Photography by Jennifer Pattison Tuohy / The VergeSee More: AmazonAmazon AlexaAppleGoogleGoogle AssistantSmart HomeTech Home Enterprise internet of things A smart home is a residence that uses internet-connected devices to enable the remote monitoring and management of appliances and systems, such as lighting and heating. Smart home technology — also often referred to as home automation or domotics from the Latin word domus, meaning home — provides homeowners security, comfort, convenience and energy efficiency by letting them control smart devices, often using a smart home app on their smartphone or another networked device. A part of the internet of things (IoT), smart home systems and devices often operate together, sharing consumer usage data among themselves and automating actions based on the homeowners' preferences. How does smart home technology work? A smart home isn't a collection of disparate smart devices and appliances, but rather ones that work together to create a remotely controllable network. All devices — such as lights, thermostats, security systems and appliances — are controlled by a master home automation controller, often called a smart home hub. This hub is a hardware device that acts as the central point of the smart home system and can sense, process data and communicate wirelessly. It combines all the disparate apps into a single smart home app that homeowners can control remotely. Examples of smart home hubs include Amazon Echo, Google Home and Wink Hub. While many smart home products use Wi-Fi and Bluetooth to connect to the smart home network, others depend on wireless protocols such as Zigbee or Z-Wave. Smart home devices can be either programmed to follow specific schedules or commands or they can be set to respond to voice commands through home assistants such as Amazon Alexa or Google Assistant. For example, a smart thermostat can learn the homeowner's habits and automatically adjust the temperature based on their position in the house. Smart home systems can also be controlled through applications, such as on-demand video and music. Some smart TVs also include voice or gesture recognition. Smart lighting systems. In addition to being able to be controlled remotely and customized, smart lighting systems can detect when occupants are in the room and adjust lighting as needed. Smart lightbulbs can also regulate themselves based on daylight availability. Smart thermostats. Smart thermostats, such as Google Nest, come with integrated Wi-Fi, letting users schedule, monitor and remotely control home temperatures. These devices also learn homeowners' behaviors and automatically modify settings to provide them with maximum comfort and efficiency. Smart thermostats can also report energy use and remind users to change filters. Smart door locks and garage door openers. Homeowners can use smart locks and garage-door openers to grant or deny access to visitors. Smart locks can also detect when residents are near and unlock the doors for them. Smart security cameras and sensors. With smart security cameras and doorbells, such as Ring, residents can monitor their homes when they're away. Smart motion sensors can identify the difference between residents, visitors, pets and burglars and can send notifications to authorities if suspicious behavior is detected. Smart pet and lawn care. Pet care can be automated with connected feeders. Houseplants and lawns can be watered using connected timers. Smart kitchen appliances. Brands such as LG, GE and Samsung offer smart kitchen appliances of all sorts. These appliances include smart coffee makers that can brew a fresh cup automatically at a programmed time; smart refrigerators that keep track of expiration dates, make shopping lists or even create recipes based on ingredients currently on hand; slow cookers and toasters; and, in the laundry room, washing machines and dryers. Smart household monitors. Household system monitors can, for example, sense a power surge and turn off appliances, sense water failures or freezing pipes and turn off the water so the home doesn't flood. Smart plugs. These smart plugs can be used to control smart devices that make our homes better and more functional. Right now, I'd say that's the biggest reason to consider not adopting the smart home in its current form. Today's smart home is mainly about remote control and programming devices to help you. You can use voice control to turn lights off when you're lying in bed so you don't have to get up. You can schedule a robot vacuum to run every day at 10AM so you don't have to think about sweeping your floors. But the smart home of tomorrow has the potential to become proactive and do things for us without our prompting — or even, perhaps, without us even knowing. Here is where artificial intelligence could transform the smart home. We already have hints of it today. A smart leak detector that knows when the dishwasher is overflowing can shut off the water. A smart thermostat that knows when no one is home can adjust the temperature to save energy. Amazon's Astro home robot can recognize and find people in the home. But many of these experiences are siloed, relying on specific hardware and software. By deploying its predictive capabilities on unifying smart home platforms, AI could be used to collect, analyze, and interpret data from different smart home devices so you don't have to. Even if you don't like the idea of a "smarter" home, how about a better one?For example, today, you can set up an automation that will unlock your door, turn on your lights, start your sprinklers, shut off your HVAC system, and have your cameras start recording video when a smoke alarm goes off in your house. But the key word is you — all that will only happen if you put in the work to set up the automation. In the future, a smart home could have the intelligence to do all of these things automatically, and — crucially — only if there is an actual fire, not just when you burn the toast.For this interoperable future to be a reality, however, we need a common connectivity protocol so that all devices can talk to each other and not be limited by only working with certain platforms. This is where Matter becomes key to the future smart home. The other major piece of the puzzle is data collection. A smart home is only as smart as the information it has. Today, we have to stick motion and contact sensors in our rooms to tell us when things move or open and close, but newer, less intrusive technologies, such as smart locks, smart fridges, washing machines, and ovens can tell us when you're home, when you're not, and when you're asleep. A multitude of appliances can send the data to a central hub, which can then use that information to make decisions. It's a natural evolution. And, even if you don't like the idea of a "smarter" home, how about a better one?Photography by Jennifer Pattison Tuohy / The VergeSee More: AmazonAmazon AlexaAppleGoogleGoogle AssistantSmart HomeTech Home Enterprise internet of things A

