The Intel® Smart Home Development Acceleration Platform enables providers to host multiple services, maximize recurring revenue, and deliver an integrated occupant experience.

Executive Summary

Imagine a world in which smart homes are actually intelligent, not just a collection of connected devices—homes that deliver security, convenience, energy savings, health care, and more. Intel is taking a radical new approach to smart home adoption based on proactive research into these opportunities. The resulting multitenant, smart home platform is open, flexible, scalable, and security-enhanced. It allows any solution provider, regardless of industry focus, to connect and deliver benefits to consumers and businesses seamlessly, all on the same platform. With Intel® technology, the vast ecosystem of developers and solutions providers is uniquely qualified to deliver a cost-effective horizontal solution to support highly sophisticated use cases.

Currently, the promise of a truly smart home remains unfilled due to fragmentation across vendors and suppliers, from chip manufacturers, device OEMs, platform vendors, and service providers. The Intel® Smart Home Development Acceleration Platform embraces standards defined by the Open Connectivity Foundation* (OCF), establishing a clear direction for smart home development that profits all stakeholders.

Figure 1. The Intel® Smart Home Development Acceleration Platform (Intel® SHDAP) allows any solution provider, regardless of industry focus, to connect and deliver benefits to homeowners seamlessly.
Solution Benefits

Designed to connect a broad range of home applications on one holistic platform, the Intel® Smart Home Development Acceleration Platform (Intel® SHDAP) provides homeowners and service providers with:

- **A richer homeowner experience.** Analytics-based applications enable utility and service providers to delight customers with applications that work together for true home intelligence.
- **Maximized recurring revenue.** The open platform creates a foundation for unlimited options, making applications such as energy monitoring, home security, automation, and safety accessible and simple.
- **Reduced overall solution cost.** Sharing common hardware, sensors, and data (at the edge and in the cloud) across multiple applications through APIs reduces overall solution costs and development time.
- **Increased average revenue per user.** Providers can offer tiered packages with options from multiple vendors, improving the opportunity to increase revenue.

Business Challenge: Homeowners Want Seamless Solutions

Many large suppliers are currently providing solutions like broadband security and home management services. Smart homes of the future, however, must support multiple services working together in new and intuitive ways in order to anticipate and meet the demands of the homeowner. Smart home customers need solutions that provide peace of mind for health and safety, reduce the time spent on repetitive tasks, save money, connect the home to other smart applications, and provide more options for families and individuals.

Utility and telecommunications suppliers, as well as other multisystem operators (MSO), want to expand their smart home offerings. These providers want a platform that will maximize recurring revenue opportunities, as well as increase average revenue per user (ARPU), while reducing the overall cost to compete. Equally important, they want a platform that delivers an excellent user experience and can adapt to new applications, ensuring their investment will continue to pay off long into the future.

Connecting the Myriad Home Applications on One Holistic Platform

With the variety of smart applications available on the market, the Intel® Smart Home Development Acceleration Platform (Intel® SHDAP) will help homeowners using one platform to connect disparate systems and gain greater value.

These systems include:

- **Security monitoring.** Solutions installed by professional security companies, as well as homeowners, include cameras, door and window sensors, and other security devices that are monitored through a combination of web applications and professionals.
- **Automation.** A variety of solutions are available to automate door locks, lights, appliances, and other systems that make the home more comfortable and secure.
- **Energy management.** Energy-consuming systems, such as air conditioners and furnaces, can be monitored through dashboards and analytics that help homeowners track and optimize their energy usage.
- **Health tracking.** A wide range of wellness applications are available today, such as vital sign monitoring, fall detection, remote pharmacy consultations, and emergency response.

The Intel SHDAP will host nearly any application from any provider, so homeowners can easily take advantage of new solutions as they become available without worrying about compatibility. This also benefits utilities and service providers, as Intel’s platform is built on an open standard, as shown in the next section.

Solution Value: Increase Revenue, Reduce Costs, Delight Customers

Intel’s solution (shown in Figure 2) securely connects home devices to the cloud, while embracing standards defined by the Open Connectivity Foundation* (OCF). OCF’s mission is to create a specification and sponsor an open source project to allow billions of devices to communicate with one another regardless of manufacturer, operating system, chipset, or physical transport. This will open enormous opportunities in the Internet of things market, accelerating industry innovation and helping developers and companies create solutions that map to a single open specification.

![Figure 2. The Open Connectivity Foundation* is developing standards to connect billions of devices regardless of manufacturer.](image-url)
An End-to-End Solution

The Intel® Smart Home Development Acceleration Platform (Intel® SHDAP) lays the foundation for today and into the future. Several smart home solution suppliers provide application software built on the Intel SHDAP that support multiple services and devices. Solution providers can partner with these innovators to deliver a single, holistic solution to smart home customers.

For example, platform customers can connect additional smart home technology, such as doorbell cameras, door locks, motion sensors, and smart meters. Data collected from these devices can be integrated with existing applications to create a holistic customer experience in which consumers enjoy increased security, improved communication, and greater energy efficiency in one easy-to-use environment. The same data also enables utility and service providers to gain individual home as well as municipal and regional usage patterns, providing opportunities for creating new and successful offerings.

The Intel SHDAP is a multitenant, unified smart home platform that will address the market requirements today and into the future. Intel and its vast ecosystem of partners and solution providers are developing an end-to-end smart home solution that spans the breadth of applications from home devices and gateways to the cloud. Through its research, Intel has gained important insights into how to improve the smart home user experience, as well as how people react to and adopt technology. Intel is sharing these findings with application developers and service providers.

The Intel SHDAP is designed to connect a broad range of home applications on one holistic platform, providing homeowners as well as utilities and service providers the following benefits:

- **Improves homeowner experience.** Imagine a smart home that recognizes family members by voice and allows them to adjust settings with verbal commands. With high-end computing capabilities, applications can learn preferences and then personalize settings; for example, turning on specific lights, adjusting the temperature, and turning on TVs or other devices.

- **Maximizes recurring revenue.** The platform will support a broad array of solutions, and it’s open to all service providers and solution vendors. The multitenant solution enables cross-industry opportunities. For example, utility providers that struggle to capture interest in less-glamorous energy monitoring services can bundle it with home security to attract more customers. It’s easier to upsell customers on energy monitoring and electricity demand response programs when it requires no additional effort to purchase such services as home security, home automation, and home safety.

- **Reduces overall solution cost.** The multitenant solution platform enables different services to share common hardware, from reusing sensors across multiple applications that save on deployment costs, to being able to add future services. The platform also shares a single security software suite across all applications instead of requiring each application to have its own. Repurposing hardware and software reduces the overall cost as well as development time.

- **ARPU.** The platform allows providers to offer tiered service packages that increase ARPU.

The Intel SHDAP, which is designed as a software development kit (SDK) using modular components with well-defined APIs and hardware abstraction, is composed of three primary components. The platform gateway provides connectivity and interoperability for edge devices. Intel API management tools and resources provide cloud connectivity for edge devices. And third-party application developers using Intel SDKs, tools, and resources provide features and benefits to homeowners.

Solution Architecture: End-to-End Smart Home Development Platform

The Intel SHDAP is an end-to-end solution based on the Intel® IoT Platform that connects smart devices to the cloud. The Intel SHDAP (Figure 3, shown on next page) takes advantage of many of Intel’s core competencies, such as:

- **Breadth and scale.** Intel’s broad product line and world-renowned ecosystem of developers and solution providers are integral to developing an industry-wide horizontal solution.

- **Security and device management.** With Intel’s security-focused software applications from McAfee® and Wind River*, the platform provides fundamental, built-in security features.

- **Analytics.** Intel’s high-performance processors can run compute-heavy analytics functions on a multitenant hardware platform.
Conclusion

Today’s smart home market is beginning to reveal its potential for utilities and service providers to offer new services as well as gain consumer insight. As a multitenant, unified platform, the Intel SHDAP enables utilities, telecommunications, MSOs, and others to deliver a richer homeowner experience, maximize recurring revenue, reduce overall solution cost, and increase ARPU. Intel is investing significantly in this market with a strong roadmap for success. With Intel, developers and providers can create a competitive advantage and increase smart home adoption.

Find the solution that is right for your organization. Contact your Intel representative or visit intel.com/smarthome.