

## SOLUTION BRIEF

Intel® IoT  
Smart Home



# Smart Homes Bring New Revenue to Telecom Service Providers

## Yoga Systems helps service providers turn home automation into profit

“We set out to build a secure, high-performing smart home solution that would empower telecoms to add real value. Intel® IoT Gateways help us deliver that security and performance.”

Priit Vimberg,  
CEO, Yoga AS

### Adding Value through Home Automation

As average revenue per user (ARPU) falls and the demand for infrastructure grows, telecom service providers are looking to add new sources of revenue. Home automation services through Estonia-based Yoga Systems offer the perfect opportunity.

YogaSmartHome\* makes it easy for customers to connect security detectors, cameras, thermostats, smart plugs, lights, and other home devices—and manage them all with a simple smartphone app. Customers can save energy, secure their homes, and lower their utility bills, while service providers collect a monthly subscription fee.

Yoga's platform uses a home central unit based on the Intel® IoT Gateway, which delivers secure, energy-efficient computing in a small form factor. By taking advantage of IoT technologies from Intel, Yoga Systems has developed a smart home system ideal for the mass market.

### Telecoms Explore New Sources of Revenue

In the telecommunications industry, service providers are feeling squeezed. Customers are using more data, forcing telecoms to make large investments in network infrastructure to stay competitive. Meanwhile, among service providers in Europe, ARPU fell by 5.9 percent on average each year from 2009 to 2013.<sup>1</sup> To strengthen their bottom lines, service providers are looking for new ways to generate revenue.

One logical area for growth lies in the “smart home.” The home automation market is estimated to grow 17 percent each year, reaching U.S. \$58 billion by 2020.<sup>2</sup> Smart home solutions have been available for several years, particularly those focused on reducing energy use. However, current platforms are not particularly user-friendly, nor do they give consumers much control or data security. Telecom service providers are uniquely poised to take home automation to the next level by delivering an easy-to-use solution that works directly from the customer's smartphone or any device with an Internet connection.



Figure 1. Customers want smart home solutions that are easy to set up, keep data safe, and save money.



### Smart Homes from the Smartphone

Yoga Systems has developed a cloud-based platform for smart home and building automation that's gaining traction around the world. YogaSmartHome is available only through licensed service providers, who in turn can offer their customers an affordable, user-friendly smart home experience. Service providers have the option to white-label the app for a more cohesive brand experience.

The YogaSmartHome app makes it easy for do-it-yourself customers to control lights, room temperature, and much more from their computer or mobile device. Customers pay for the equipment to set up, which starts at around €200 (approximately U.S. \$223), and a monthly subscription fee of about €10–15. Installing and adding new devices is as easy as installing a wireless router. The app is available on iOS\* and Android\*, with support for Windows Phone\* coming soon.

Service providers Elion in Estonia and Sonera in Finland are already offering YogaSmartHome. TeliaSonera will soon launch the service in seven countries.

### Energy Savings and Home Security

YogaSmartHome is an intelligent system that learns a household's behavior and adapts itself to customer preferences. For example, if a user likes having a night light on, YogaSmartHome will sense the action and keep it on. The system is also proactive; home security is activated when the last person leaves the house. The app features:

- **Location awareness (geofencing):** Users can control their homes based on whether family members are at home or away.
- **Security alerts:** Burglar, fire, and panic sensors can immediately alert multiple users via their smartphones.
- **Video surveillance:** Live video recordings can be programmed manually or started when an event occurs in the home. Video streaming is encrypted.
- **Energy metering and statistics:** Electricity, water, and gas consumption can be measured and monitored in real time, even at the device level. Historical views help identify usage patterns.
- **Device control and monitoring:** Smart plugs and smart relays can switch devices on or off and measure their energy consumption.
- **Temperature monitoring:** Room temperature is logged via sensors in door magnets and motion and smoke detectors. YogaSmartHome combines real-time weather data with user behavior to help manage the home's temperature and save energy.

The YogaSmartHome system includes wireless components—smart plugs, motion and smoke detectors, and relays—that are extremely easy to install. Customers can connect wired devices as well, although they may need help from an electrician. Once the devices are in place and switched on, they will appear on the YogaSmartHome app, which runs on smartphones, tablets, and computers. All communications within the home and to the cloud are secured using 128-bit SSL encryption—the same encryption banks use when processing financial transactions.

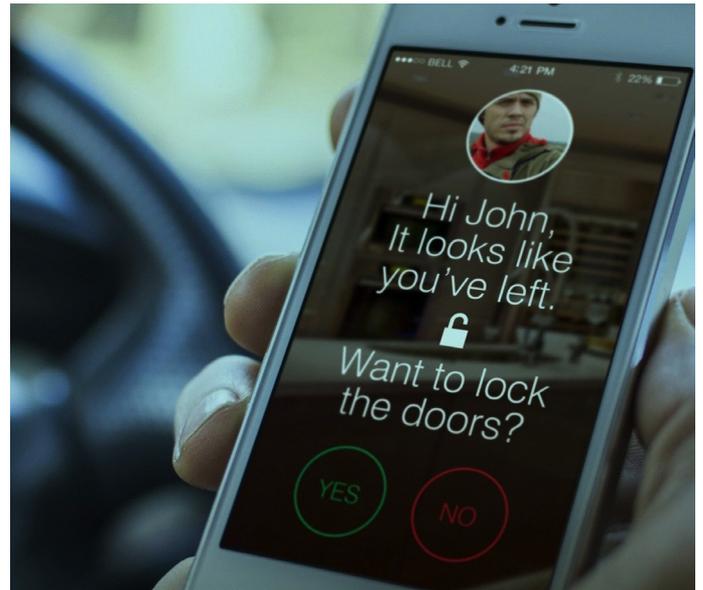
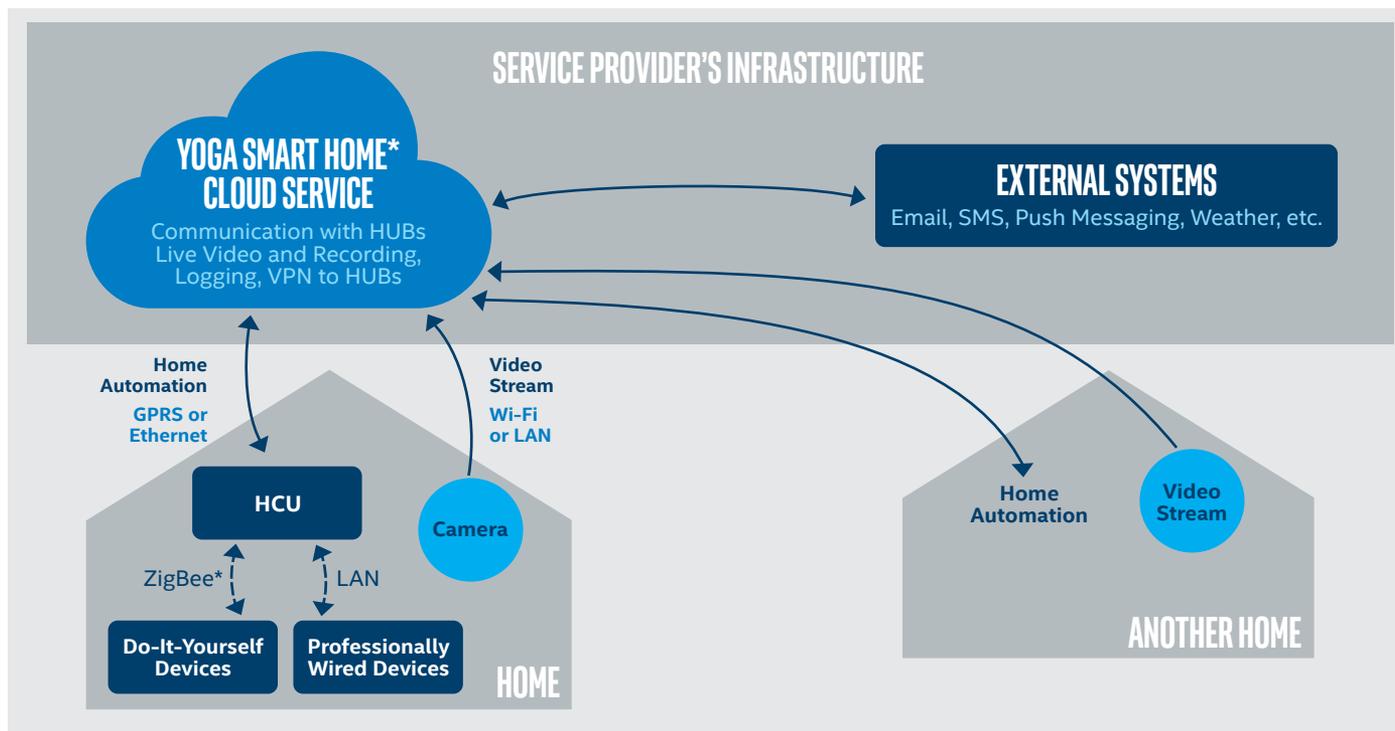


Figure 2. YogaSmartHome\* uses location awareness to alert users.

### YogaSmartHome and Intel® IoT Technology

The Yoga platform includes a suite of cloud-based applications and services with full end-to-end data security. The most important device in the system is the home central unit (HCU). The HCU is an Intel IoT Gateway-based product that connects to wireless and wired devices. The cloud-based service provider infrastructure communicates with the HCU and provides a number of services, such as live video recording and weather updates.

Yoga offers two Intel® processor-based HCUs. The highly secure home HCU is Yoga Tiny\*, which uses the Intel® Quark™ SoC X1000 series with special security features. The gateway delivers secure, energy-efficient computing in a small form factor. It's ideal for service providers who want to enter the smart home market with a solution that connects to existing routers in plug-and-play fashion.



**Figure 3.** An Intel® processor-based home central unit (HCU) routes data to the cloud-based service provider. The solution can scale to serve multiple homes from the same app.

“We set out to build a secure, high-performing smart home solution that would empower telecoms to add real value. Intel IoT Gateways help us deliver that security and performance,” said Priit Vimberg, CEO of Yoga.

Yoga also offers a solution designed to manage large buildings. Yoga PRO1\* is ideal for professionally wired installations, such as high-end smart homes, large commercial offices, and industrial buildings. Yoga PRO1 has all the same security features as Yoga Tiny, plus direct onboard inputs, outputs, and automation bus interfaces.

Thanks to application whitelisting software—a key capability in McAfee Embedded Control\*—only authorized code can run on Yoga’s HCU’s. Once a whitelist is enabled, the system is locked down to the selected baseline; no program or code outside the authorized set can run, and no unauthorized changes can be made. The approach is a secure and reliable alternative to traditional antivirus solutions that continually scan for malicious code.

### INTEL® IOT GATEWAY

Along with providing essential connectivity, the Intel® IoT Gateway acts as a data router and filter between data-generating sources—such as sensors and intelligent equipment—and the cloud. It enhances data security, accelerates actionable insight, and more importantly, saves money. With the Intel IoT Gateway, companies can securely transfer only data that has operational relevance to the cloud, lowering costs for data transmission and cloud storage.



### Better Services, Higher Revenues

Home automation offers a key area of revenue growth for telecom service providers. By taking advantage of IoT technologies from Intel, Yoga Systems developed a secure smart home system that service providers can feel comfortable offering to a mass market. With an intuitive, easy-to-use smartphone app, customers have a great way to curb their energy costs and keep their homes secure.

## Learn More about IoT

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To learn more about Intel® solutions for smart buildings, visit [intel.com/iot/smartbuilding](http://intel.com/iot/smartbuilding).

For more information about Yoga Systems solutions for building automation, visit [yogasystems.com](http://yogasystems.com).



1. Giles, Mark. "Market consolidation aims to address rising investment costs for European operators." May 6, 2014, Mobile World Live, <http://www.mobileworldlive.com/market-consolidation-aims-address-rising-investment-costs-european-operators>.

2. MarketsandMarkets. "Smart Homes Market—Trend and Forecast to 2020." February 2015, <http://www.marketsandmarkets.com/PressReleases/global-smart-homes-market.asp>.

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