Will our Smart Home be a secure home?

We don’t like everybody to have access to our home! We want to be in control of our home!

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Smart Home will penetrate our homes

Smart home is a key issue of our digital future. Computerizing our homes will offer and provide lot of benefits: comfort for our daily life, savings of energy and money for light and heating, security of our home ( alarming and controlling), improved media access (including TV, video and music). Many of us are just starting to use such functions and to like their benefits. Companies do offer more and more products and related advertising has increased significantly.

The technical base of smart home is rather simple. In our homes we have powerful networks and it is easy and cheap to equip technical devices with digital intelligence and with access to wireless networks. The range of technical devices covers light switches as well as heating systems, kitchen appliances, video cameras and door locks. A central server gets signals from these devices, observes theirs states and controls them. We can access these functions from everywhere via Internet. Service providers will offer additional benefits with regard to functionality and money savings. These are the building blocks for an unlimited number of possibilities and for a huge range of benefits.

Even most of those people who do not welcome this part of our digital future will enjoy these benefits one day or at least use them as hidden functionality. Some years ago we did not want and expect computers at home and motor cars filled up with digital functions, but today we have them and we need and enjoy them more and more. Therefore, the key question is not whether we all will use it but what and how much we will use it.

Smart Home has to be secure and a lack of security at home is more than an economic issue.

In general, we are lacking awareness of potential dangers without having experienced some personally. Burglary is a common problem, but most of us need an event for sufficient concern about the problem. Some damage to a neighbor prompts us to implement some safety at home. Some damage to us can even cause everlasting psychological problems resulting in moving to another apartment. It is easy to present further examples. Publicity material for smart home equipment shows that at leaving home automatic smart home functions can lock the doors, control light and heating adequately and activate alarm systems. But what about criminal persons or viruses using the same functions for unlocking doors and deactivating alarming systems? What about other persons accessing our video cameras (including those in computers and TV sets) as well as further devices and controlling what is going on in our home? What about viruses and malware causing further and dangerous trouble via kitchen appliances, heating or alarms? The scenarios of possible dangers are as unlimited as the possible benefits. Both will increase dramatically the more smart home covers technical functions in our homes.

If awareness starts late and is based on major and obvious big deficits after purchase and installation of a huge number of devices it could be impossible or very expensive to add security later on to products or to our specific home. Therefore, we need to include security very early and it has to be implemented from the very beginning.
Who cares about Smart Home security? Findings and recommendations of the ENISA study ‘Security and Resilience of Smart Home Environments’

In December 2015 ENISA (European Union Agency for Network and Information Security) has published a report ‘Security and Resilience of Smart Home Environments’ (see www.enisa.europa.eu). This excellent study highlights the present situation and covers security measures for improving the security of smart home devices. The study is primarily aimed at professionals dealing with products and with their development. Yet, major parts are easy to read for a broader audience and can help to improve knowledge and awareness of other persons. As ENISA says ‘The good practices apply to manufacturers, vendors, solution providers for hardware and software, and developers. It can be used to assess their current security level, and evaluate the implementation of new security measures. European citizens, standardization bodies, researchers and policy makers could also find an interest in this study.’

The ENISA report shows that there are many stakeholders who are or who should be interested in Smart Home security. But obviously there is an urgent need for improved awareness. In particular, the related demands of consumers, the long-term marketing views of producers and service providers and the work of national and international governmental and non-governmental institutions should cause awareness about the issue.

The study clearly says that the need for security in smart home environments is still underestimated, that vendors lack incentives to enhance security and that presently devices and services implement few security measures. On the other hand, there are good practices for many issues available that can improve the situation. The study provides a lot of details of these good practices as well as further recommendations for many stakeholders.

What will happen? What should be done?

Consumers and markets will be stimulated enormously by the benefits of Smart Home devices and services. Certainly, we have to face this reality. Simultaneously, sufficient security is a big challenge. Many stakeholders will have to contribute. Of course, market rules will cause the provision of a major contribution.

At present, the marketing of Smart Home products and services strongly focuses on functionality and benefits. Considering security might confuse many consumers. But responsible producers, dealers and service providers should in addition take a different view as security incidents would cause sales problems. As explained above, with regard to his home the consumer will be very sensible. Therefore, early care might be the cheaper way and a better strategy.

Furthermore, measures for improved awareness of all groups of stakeholders including consumers and politicians are necessary in any case. CECUA will contribute to this and keep an eye on the issue. Contact and co-operation with ENISA is a building block for this purpose.

Welcome to comments

This article can only outline some basic issues.
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