



Electronic Devices & Networks Annex
EDNA

EDNA - Electronic Devices and Networks Annex of the IEA-4E and Overview of the EMS Market.

**By: Dr. Adriana Díaz - ECODESIGN company GmbH
IEA - 4E alternate delegate for Austria.**

*Workshop “Searching for efficiency with Energy Monitoring Systems,
promises and opportunities”. Vienna, 8th March 2016.*

We help our clients develop and market eco-products successfully



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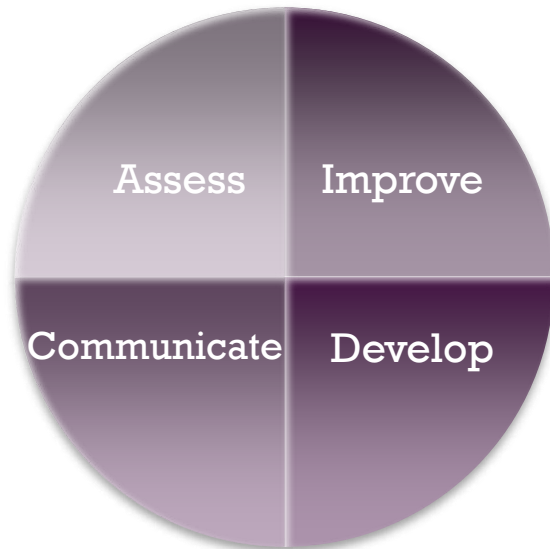
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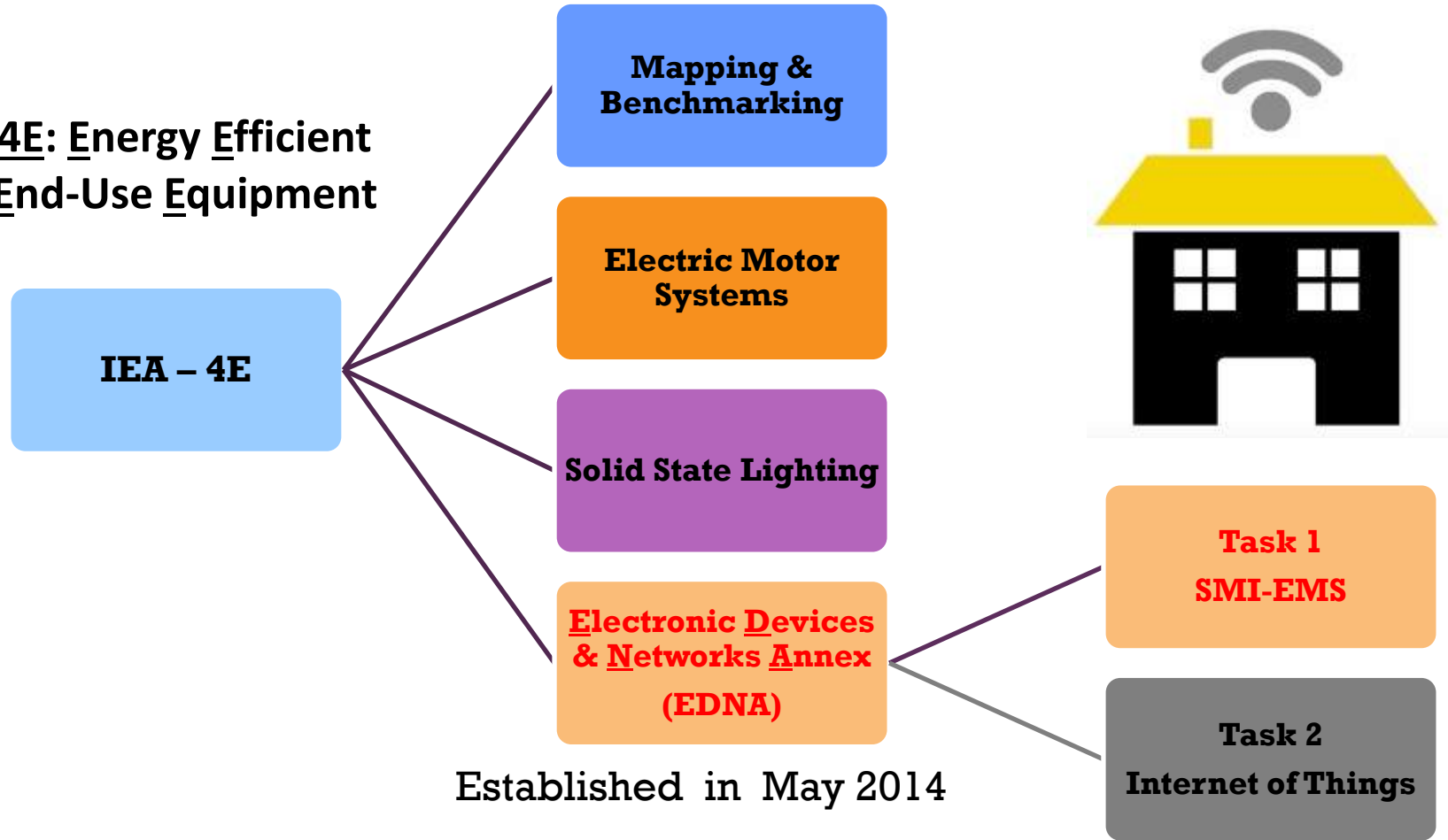
- Life Cycle Assessment (LCA)
- Product Carbon Footprint (PCF)
- Product development
- Environmental communications (EPD)
- Trainings & Workshops
- Research projects
- **IEA 4E Austrian delegate for the Ministry of Technology**

Agenda

1. EDNA background goal, members, and tasks
2. EDNA Task 1 SMI - EMS
3. Market overview for EMS
4. Summary

Background: Electronic Devices and Networks Annex - EDNA

**4E: Energy Efficient
End-Use Equipment**



Established in May 2014

EDNA Main goals and members

- **Monitor and report energy consumed by connected devices and networks.**
- **Support the alignment of government policies and program for minimizing energy consumption.**

12 member countries: Australia, Austria, Canada, Denmark, France, Japan, Rep. of Korea, Netherlands, Sweden, Switzerland, UK and USA.

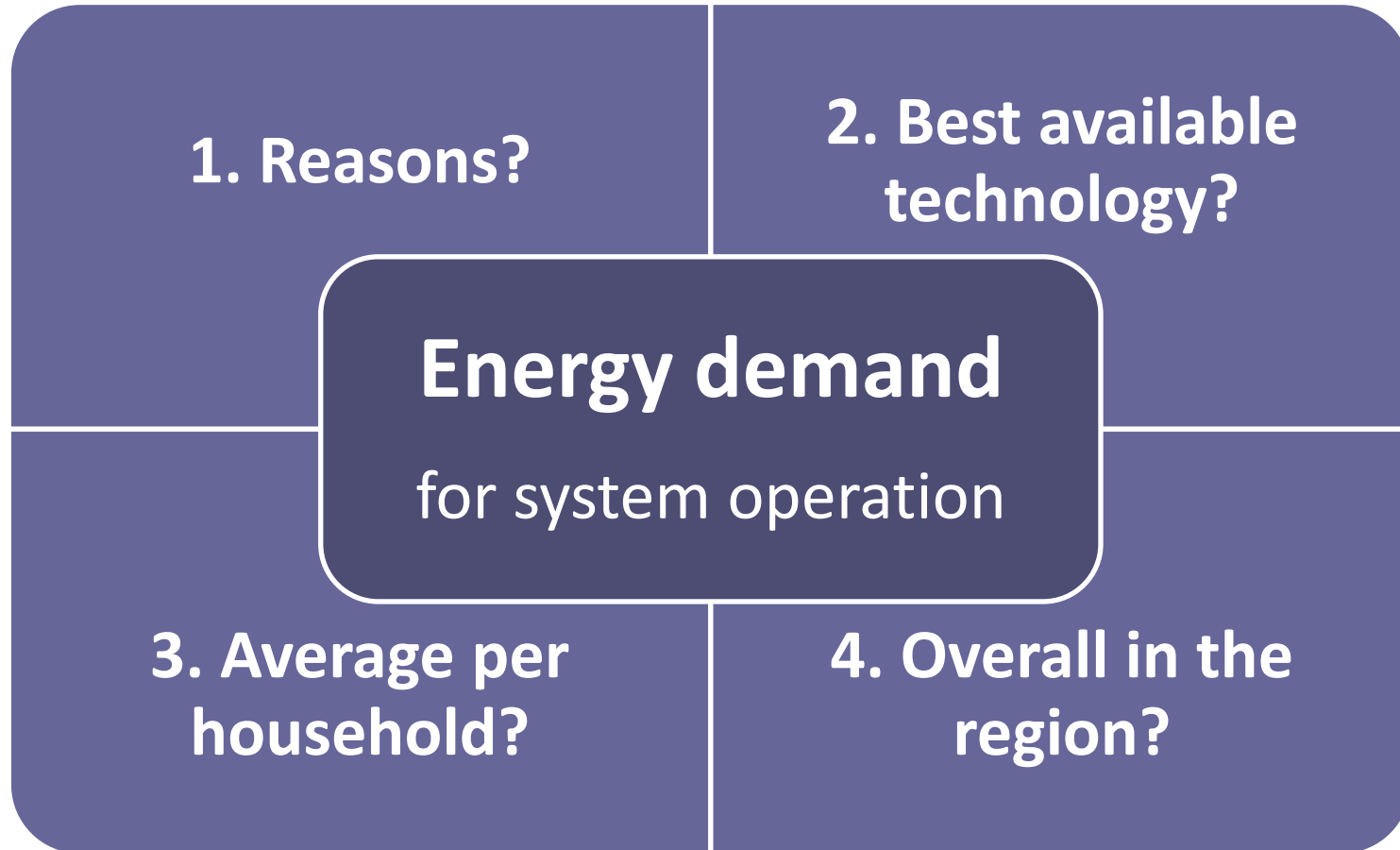
EDNA tasks

- **Task 1: Smart Metering and Energy Monitoring Systems - SMI-EMS:** Lead by the Austrian Federal Ministry for Transport, Innovation and Technology (supported by Ecodesign company GmbH).

- **Task 2 : Energy Efficiency of Internet of Things - EEIoT.**

And various projects under the „G20 Networked devices energy action plan“.

Motivation EDNA Task 1



Why investigating the own energy demand of SMI and EMS?

- SMI and EMS promoted by EU Energy Efficiency Directive 2012/27/EU and various national energy efficiency laws.

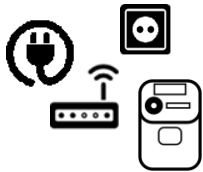
The aim of these devices is to **help consumers better understand and manage the energy consumption**, thereby helping decrease energy demand.



Research suggests that **the energy saving potential is limited.**

*Own energy consumption of SMI and EMS and its trade-offs may become **relevant** and need to be taken into account.*

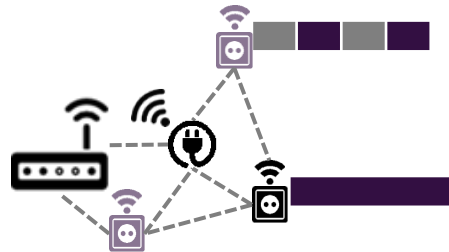
4 Step methodology for SMI & EMS



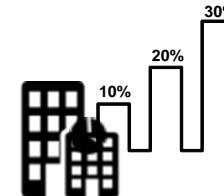
Identify & understand systems



Measure energy consumption of components



Define technical scenarios and use patterns



Extrapolate to market or rollout scenario

1

2

3

4

Systems are available in the **market**?
Components and **features offered**?

Energy consumption of the components in their operating states (modes)?

How are the systems installed in residential settings?
Use patterns?

Demographics?
Penetration rate of SMI-EMS systems?

EMS market - First insights

Wide range of solutions for **controlling, monitoring and automating functions in the home**, with/without Apps and websites → Smart Home and Home Automation

Six categories:

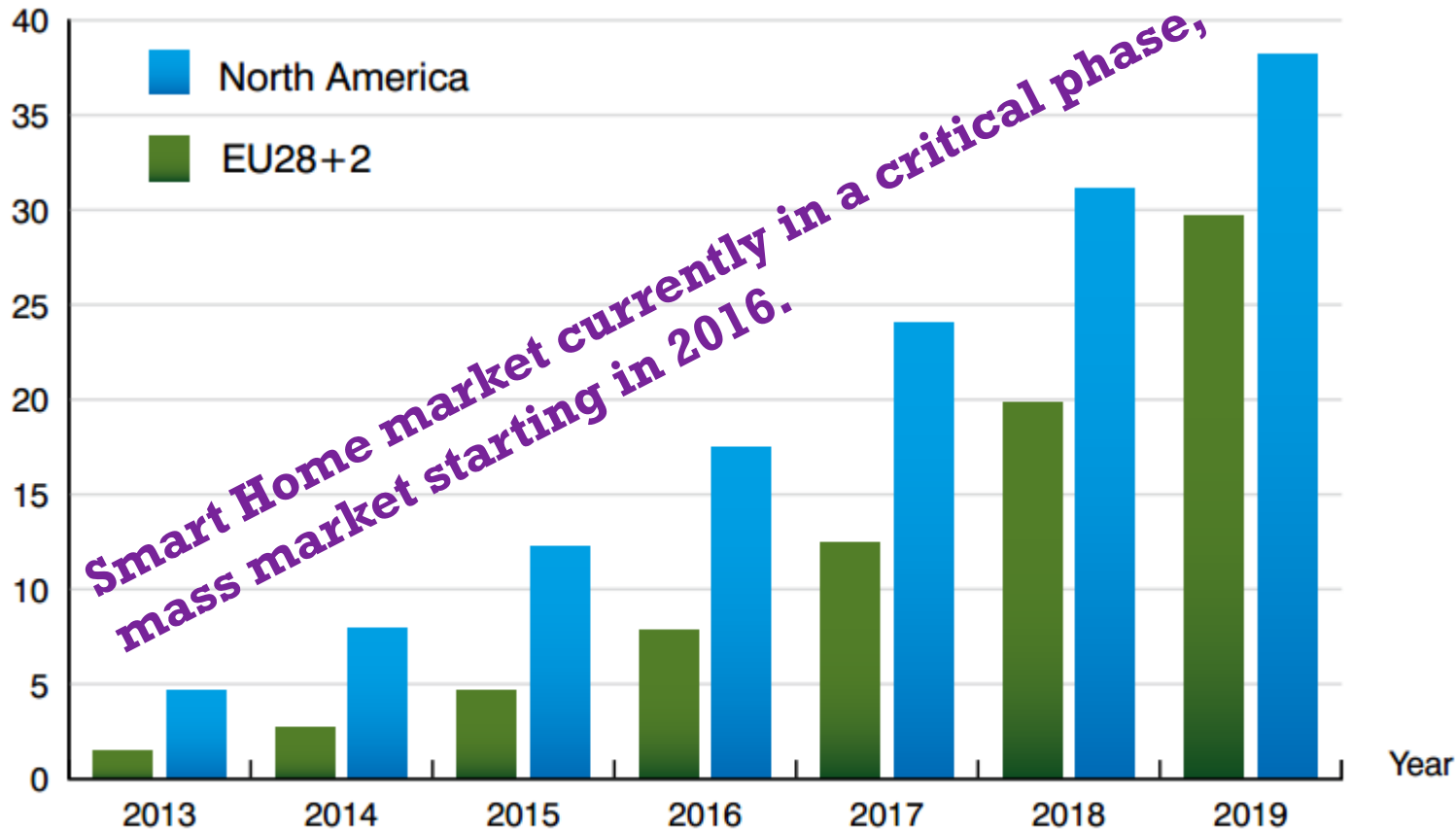
- Energy management & climate control
- Security & access control
- Lighting, window, & large appliance control
- Home appliances, audio-visual & entertainment
- Healthcare & assisted living systems.



Market is growing in the EU and North America

Million Homes

Berg Insight AB, Smart Homes and Smart Automation.

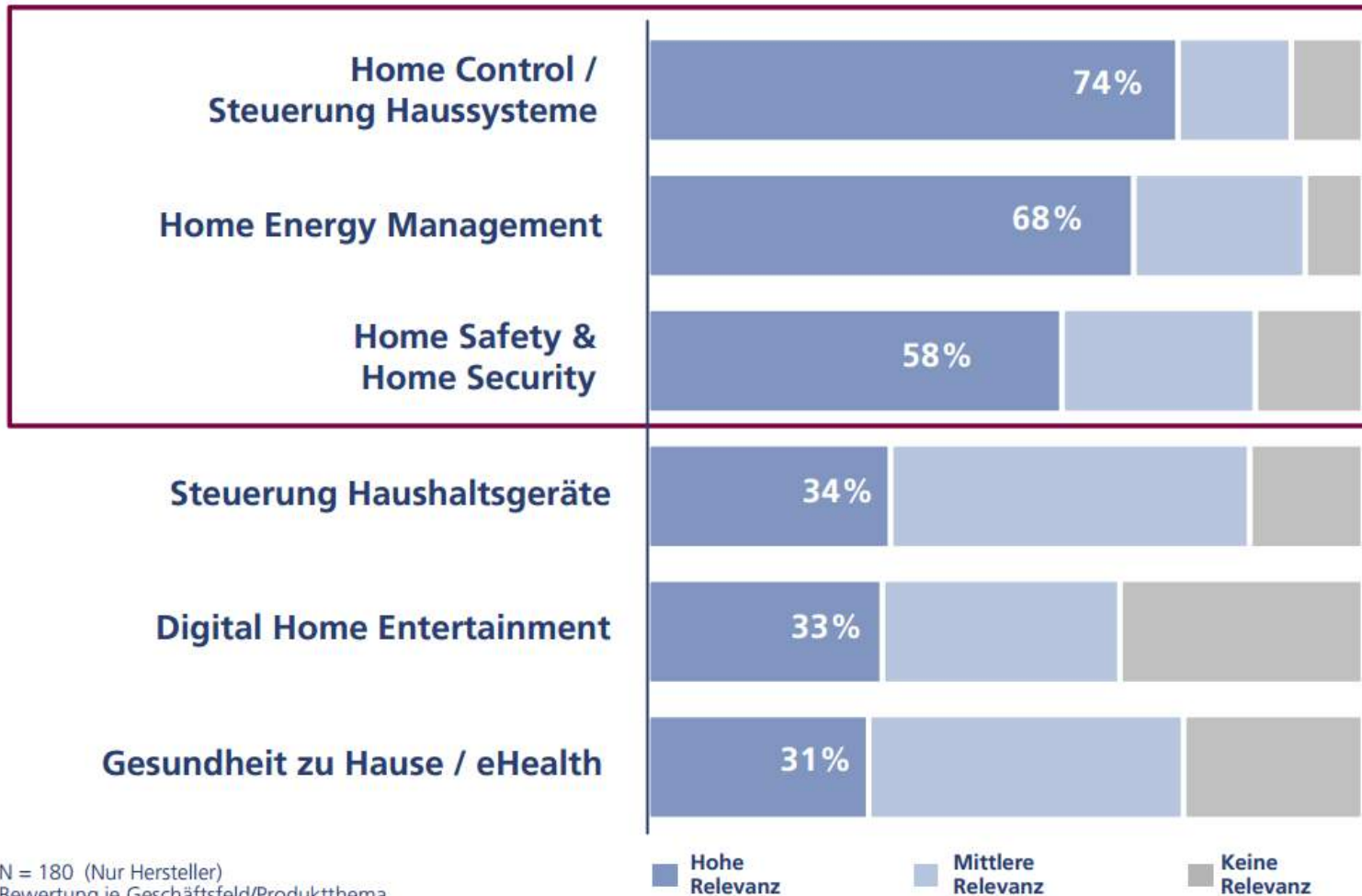


*Total number of smart homes
(Europe and North America 2013–2019)*

Different companies in this growing market



Companies focusing their offer on...



N = 180 (Nur Hersteller)
Bewertung je Geschäftsfeld/Produktthema

Over 20 systems identified in Austria



Monitoring

4 Systemanbieter

20%



Management

**9: EVU, Systemanbieter und
Photovoltaik Systemanbieter**

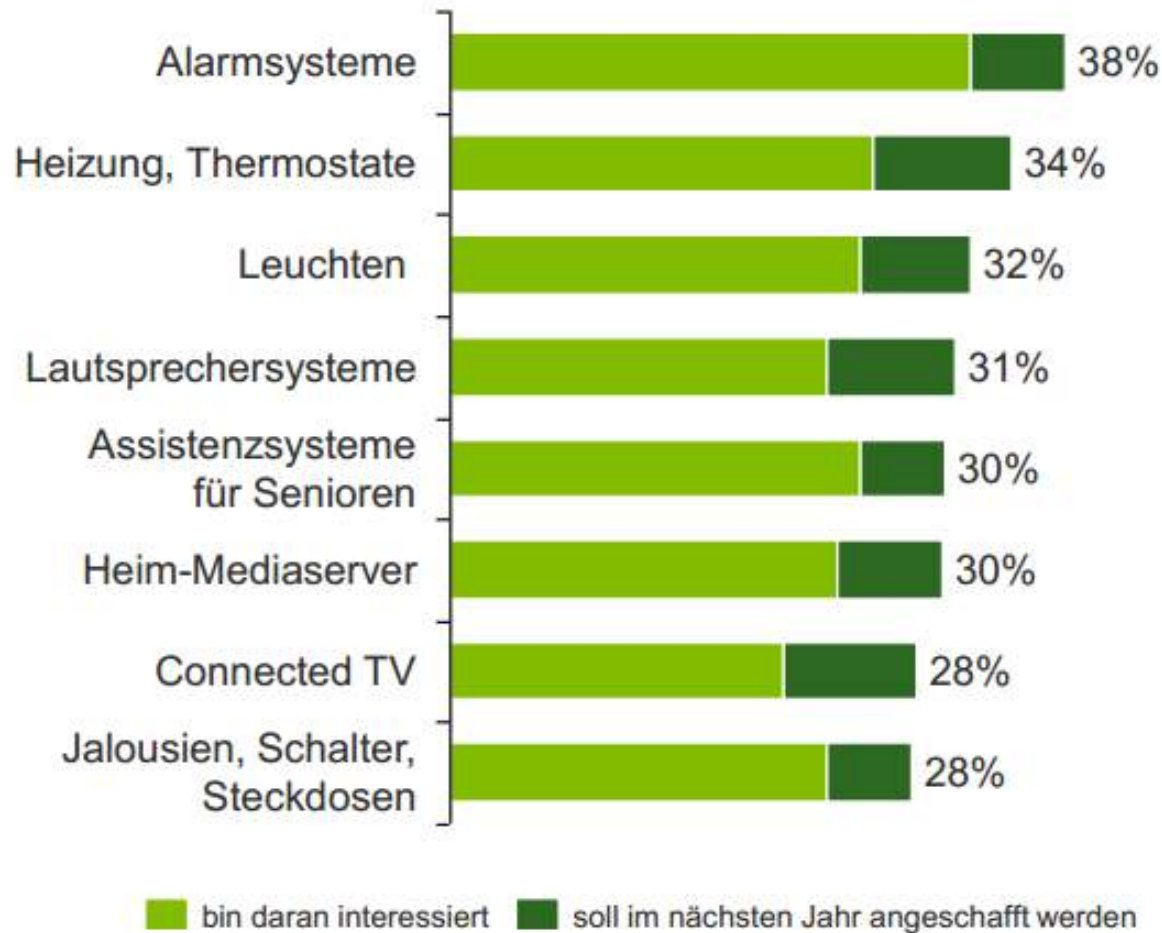
80%



Automation

7 Systemanbieter

The users are interested in...



Quelle: Deloitte Smart Home Survey 2015

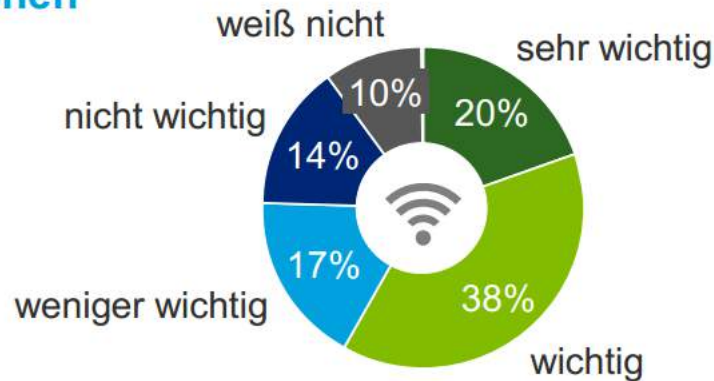
Because they want...



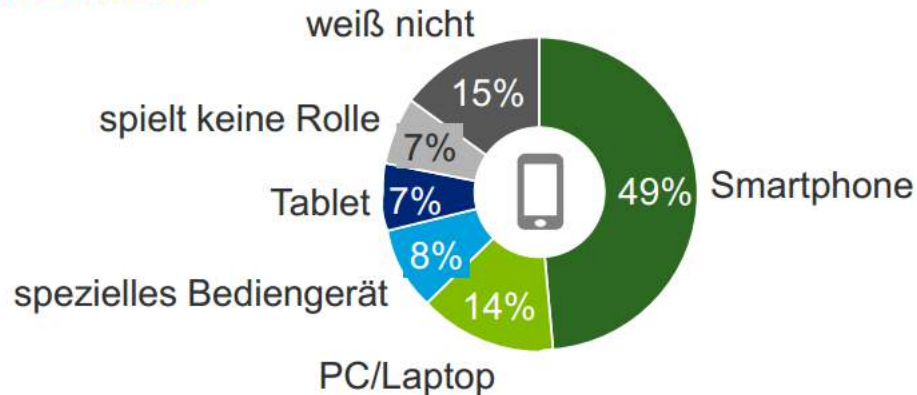
Quelle: Deloitte Smart Home Survey 2015

Remote access & control via smart phone

Wichtigkeit der Fernbedienbarkeit von Smart Home-Funktionen



Bevorzugtes Steuergerät für Smart Home-Funktionen



Quelle: Deloitte Smart Home Survey 2015

EMS Market – Summary

- Deloitte, Kotschi Consulting and Icontrol Networks all agree: **“growing smart home market”**.
- Penetration of EMS is projected to rise from 2% of homes today **to 40% by 2034 without additional intervention.**
- **68 million homes** in Europe and North America will be smart by 2019.
- Break-through to **mass market by 2016.**

EMS Market – Summary (2)

- **A variety of companies**, e.g., utilities, IT and manufacturers of electronics, are positioning themselves and their offers in this market.
- Main product categories in the market: **home control, home energy management and home security**.
- **Comfort and safety drives the adoption** of products.
- Users currently purchasing **single point solutions**.
- **Remote access and control via mobile phones** are important for the users.



Further considerations

- Policy measures, e.g., EU's Energy Performance of Buildings Directive and the Energy Efficiency Directive have an influence in the adoption of EMS systems.
- The Smart Appliances Prep. Study for Ecodesign regulation concentrating on the Demand-Response features of smart appliances - SMI-EMS are not the main focus.
- EU Ecodesign Measures for Network standby are already in force – EMS products really complying with energy consumption limits?
- Possible “Rebound effects” from a wide adoption of EMS and smart home technologies are unknown.



Thank you for your attention.

International Energy Agency (IEA) www.iea.org

Energy Efficient End-use Equipment (4E) www.iea-4e.org

BMVIT IEA Forschungs Kooperation:

<http://www.nachhaltigwirtschaften.at/iea/index.html>

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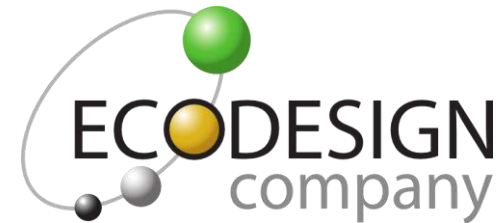
<http://edna.iea-4e.org>

Questions?

Contact information

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