Bosch Overview
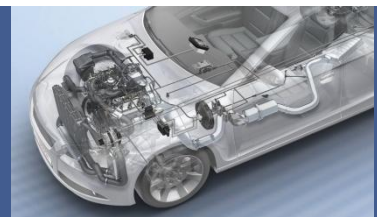
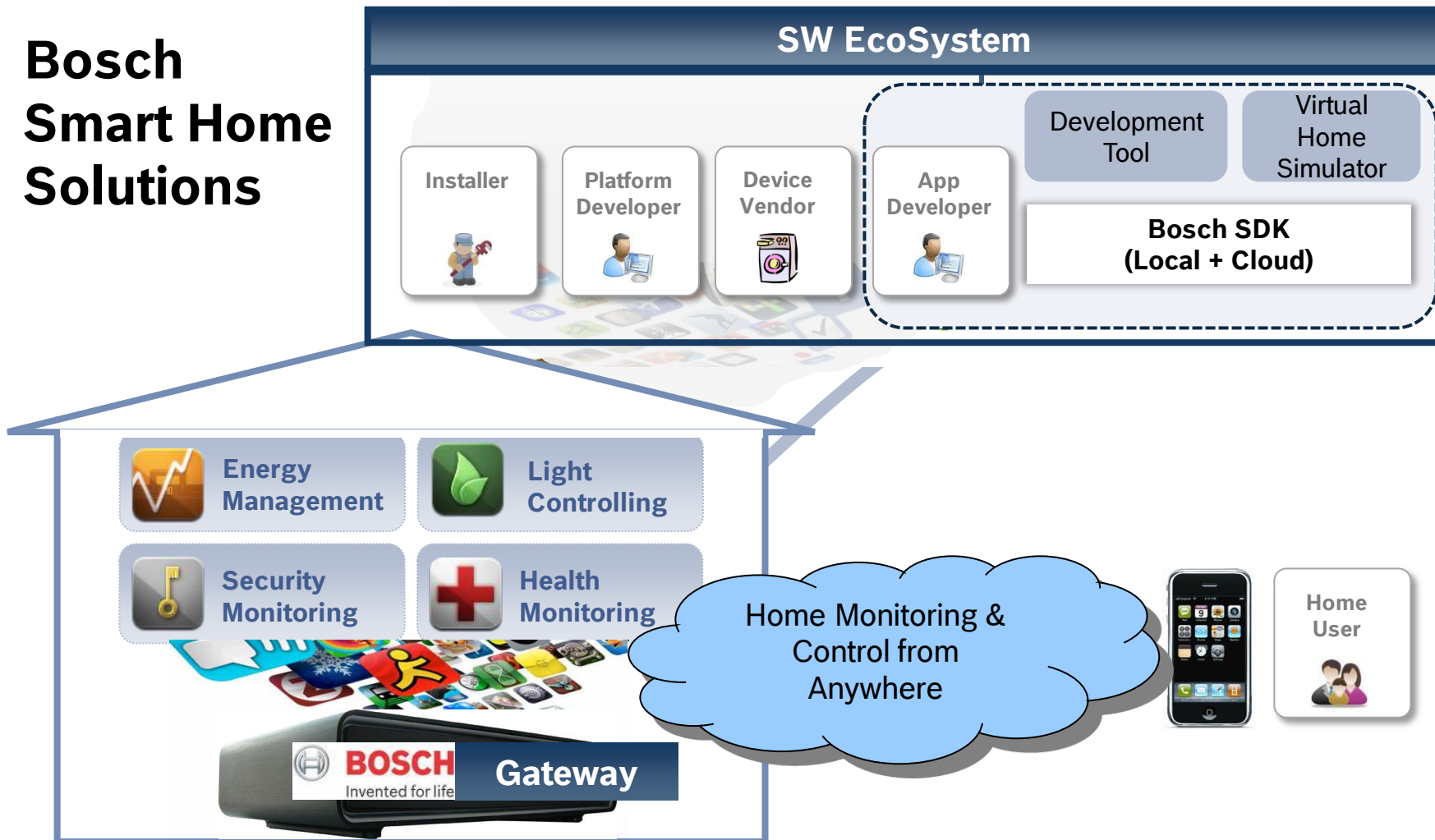| Bosch Group total	➜ 47.3 billion euros in sales ➜ 283,500 associates including 34,200 in research and development	
Automotive Technology	➜ 59% share of sales ➜ World's largest supplier of cutting-edge automotive technology	
Industrial Technology	➜ 14% share of sales ➜ World's leading manufacturer of large gearboxes and of powertrain, packaging, and process technology	
Consumer Goods and Building Technology [1] Including other segments	➜ 27% share of sales[1] ➜ World's largest power tool manufacturer, leading the field in household appliances, heating and cooling, and security systems	

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BOSCH

Bosch Smart Home Solutions

SW EcoSystem

Installer

Platform Developer

Device Vendor

App Developer

Development Tool

Virtual Home Simulator

Bosch SDK (Local + Cloud)

Energy Management

Light Controlling

Security Monitoring

Health Monitoring

BOSCH Invented for life

Gateway

Home Monitoring & Control from Anywhere

Home User

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BOSCH

Bosch Project Overview

The Problems

➔ How to enable the **low cost** 3rd party development of **Apps** and **Services** for the **heterogeneous** smart home environment?

- Easy installation of development environement setup with low cost
- Consistent simulation and testing infrastructure
- Minimum efforts for software validation

The Practicum Goals

➔ The project will provide:

- **Cloud based IDE** with minimum requirements for devices and configurations
- **Flexible framework** for simulation & testing various devices and services
- **Dependency** description for devices and Apps/Services (e.g., automatic manifest description)

Expected Deliverables

WP	WP Name	Priority
WP1	Elicit requirements for a software ecosystem for heterogeneous systems with consideration of different stakeholders	High
WP2	Analyze state-of-the art technologies, approaches and open sources for cloud based IDEs and the elicited requirements	Mid
WP3	Develop software architecture and design for a development environment "in the cloud" concept	High
WP4	Implement a prototype of the concept applicable to an HBA software ecosystem with consideration of extensibility to other ecosystems	High
WP5	Demonstrate the capabilities of the prototype for a couple of applications and new devices	Mid
WP6	Product demo video and documentation	Mid

Expected Benefits for Students

➜ Valuable experience in cutting edge technologies in cloud computing and SW ecosystems

➜ Analysis of existing technologies and integration of the selected technologies to the new architectural solution

➜ Good balance of software lifecycle activities including requirements gathering, architecture development with quality attributes scenarios, itnegration of existing technologies into the project, and tesing

➜ Initiate and contribute a future commercial product

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