# BOSCH: A SMART COMPANY

Javier González Pareja
**Representative of Bosch Group Hungary**
29 August 2016

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# Agenda

History & Global presence

A Smart Company

The Bosch Group in Hungary

BOSCH
Invented for life

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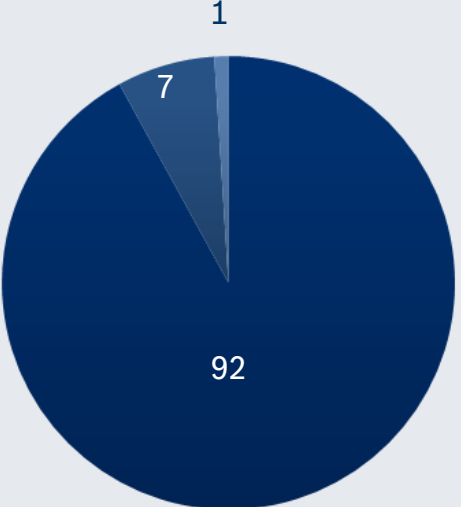# HISTORY AND GLOBAL PRESENCE

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# History and Heritage

*"I have always acted according to the principle that I would rather lose money than trust. The integrity of my promises, the belief in the value of my products and in my word of honor have always had a higher priority for me than a transitory profit."*

**Robert Bosch (1864-1950)**

# Bosch Global

## Shareholders



- 1
- 7
- 92

**1** Robert Bosch GmbH
**7** Bosch family
**92** Robert Bosch Stiftung

## 4 BUSINESS SECTORS

Mobility Solutions

Industrial Technology

Consumer Goods

Energy and Building Technology

### Mobility Solutions

World's largest supplier of cutting-edge automotive technology

### Industrial Technology

Leading in drive and control technology, packaging, and process technology

### Consumer Goods

World's largest power tool manufacturer
Leading the field in household appliances

### Energy and Building Technology

Leading manufacturer of thermo, and building security technology; World's largest supplier of heat pumps

approx. **375,000** associates

**70.6** billion euros in sales in 2015

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# Megatrends in a fast changing world

## Mobility
Parking space search is responsible for 30% of the traffic in cities.

## Urbanization
Cities represent 2% of the globe and 50% of the population.

## Connectivity
New ICT, data management and IoTs devices increase the need for governance rethinking.

## Resources
Cities consume 75% of the produced energy, buildings have 40% energy efficiency.

## Demography
Aging of Western countries' population implies new needs

## Quality of Life
Quality of life is a key element for attractiveness in the city.
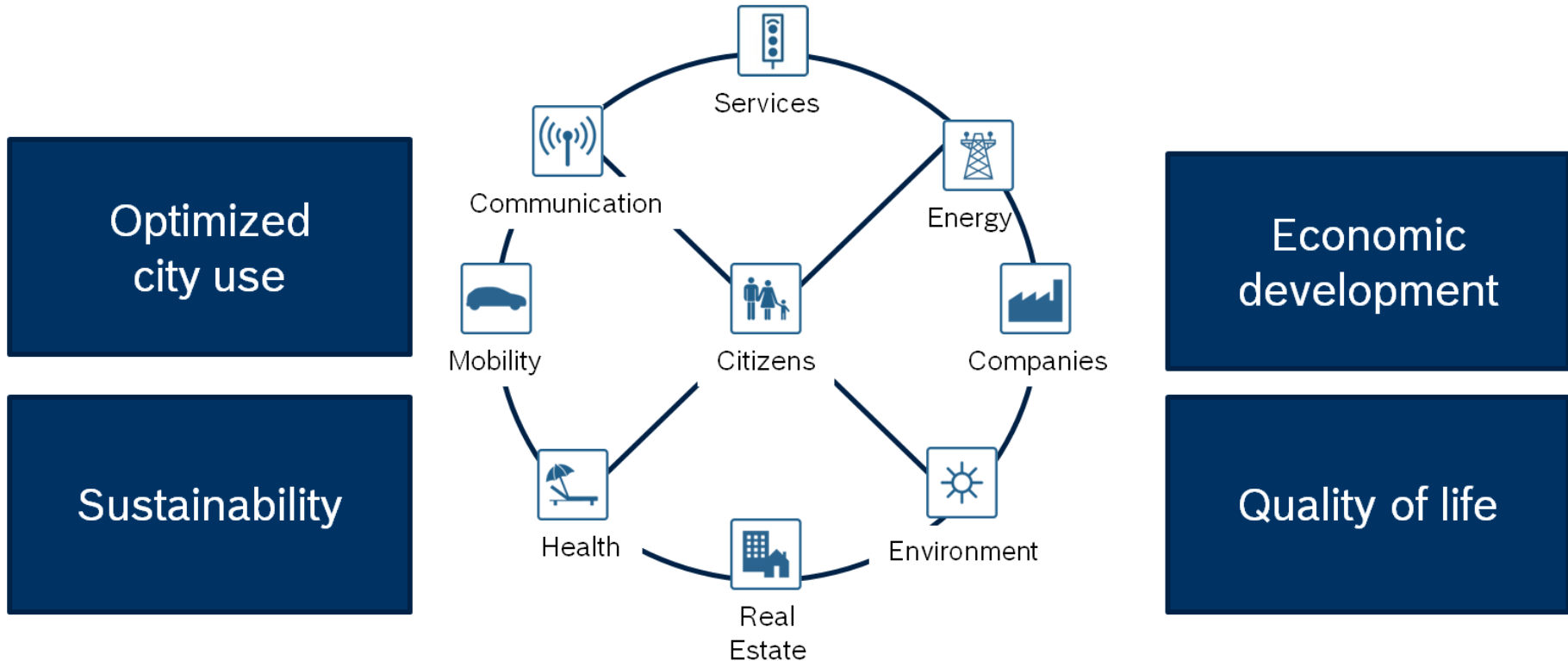
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# Bosch and the Internet of Things



After file sharing, e-commerce, and social media, the next generation of the internet is connecting things and devices: the **Internet of Things (IoT)**. We expect **14 billion connected devices by 2022**.

Connecting devices results in data that open up **new insights**, **business models**, **and revenue streams**. Private users of connected devices will see the **new services** enriching their relationship to the products, **providing higher quality of life**, **comfort**, **security**, and **fun**.

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# Definition of a Smart City

→ A smart city breaks down silos therewith creating an informational and operational web interconnecting disparate systems to optimize performance and create new business models through an integrated technological platform.



Optimized city use

Sustainability

Services
Communication
Energy
Mobility
Citizens
Companies
Health
Real Estate
Environment

Economic development

Quality of life

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Smart City

RESOURCE

**WATER**
**ENERGY**
**METALS**
**OIL**
**PLASTIC**

PRODUCT

**Dishwashers**
Bosch's most efficient dishwasher cleans dishes with only six liters of water per cycle – in 1997, 16 were needed.

**Domestic appliances**
Old refrigerators and washing machines guzzle power - the latest Bosch appliances are very much more efficient.

**Energy-plus house**
Futuristic living: with solar energy systems, modern heating and insulation and economical appliances.

**Machine tools**
Optimized motors and regulated drives dramatically improve the efficiency of production facilities.

**Reconditioned parts**
The reconditioning of starter motors, alternators and other components saves aluminum, copper and steel.

**Diesel hybrid engines**
Combining the internal combustion engine with an electric drive means you don't need to fill up as often.

**Direct gasoline injection**
Only what's needed: modern gasoline systems inject fuel at high pressure directly into the combustion chamber.
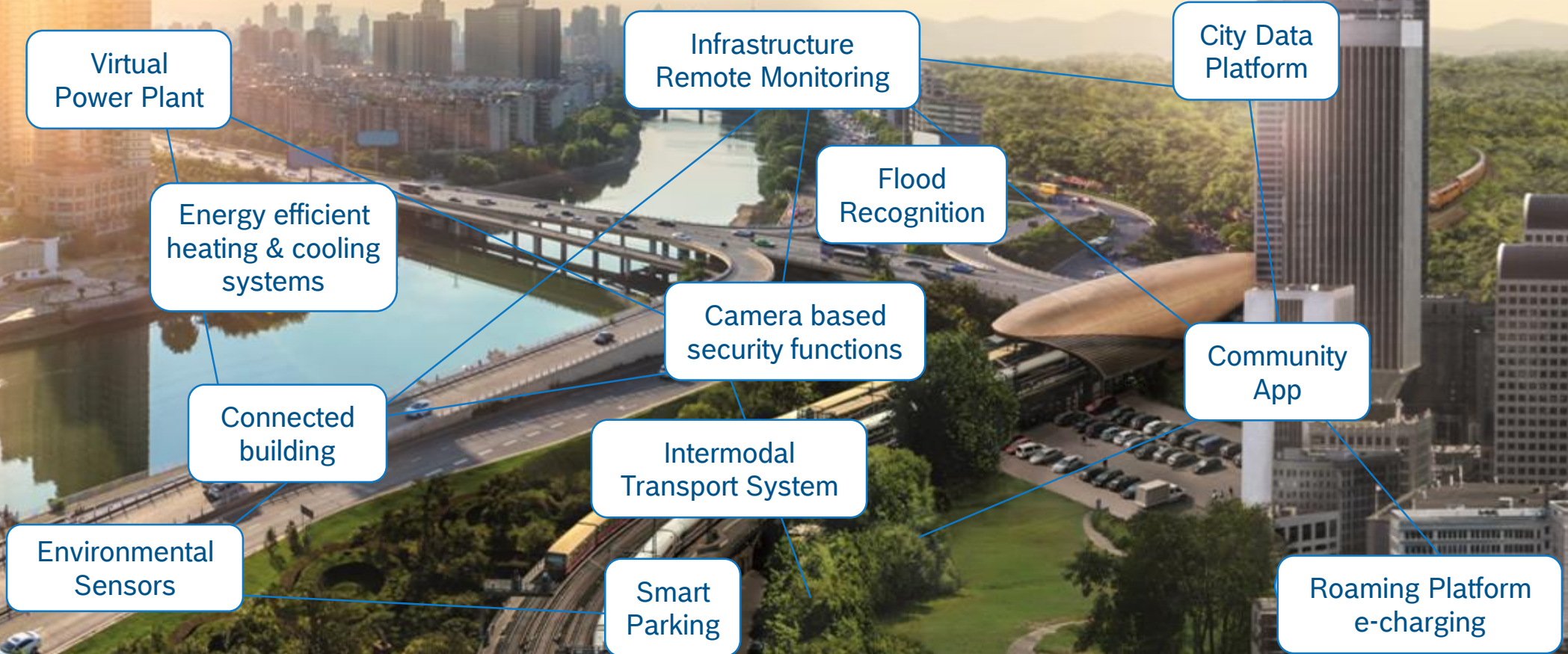
**Flow wrap machine**
Chocolate bars and other candy can be packaged using ultrasound sealing, which requires less materials.
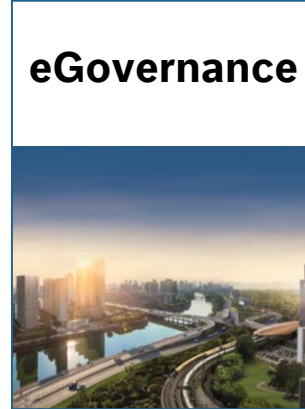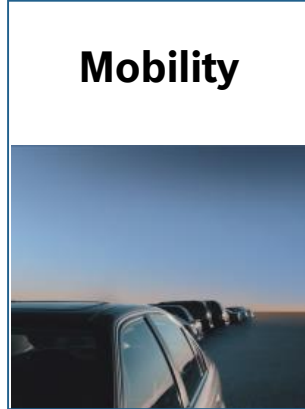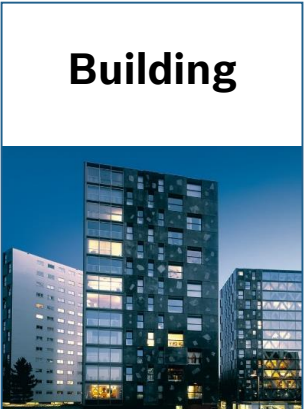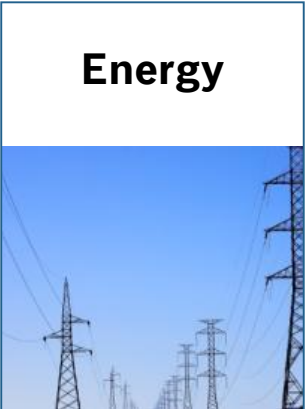
# City Challenges and Solution Examples

| Topics | Challenges | Solutions |
|---|---|---|
| Mobility | Reorganize / Revitalize existing infrastructure<br>Connected and efficient public transportation | Smart parking<br>Fleet monitoring and management<br>Intermodal planning, booking, payment |
| Energy | Manage peak demand<br>Reduced environmental impact<br>Improvement of existing infrastructure | Street light management<br>Smart grid (metering, software)<br>District heating |
| Security | Public security (mass events, crime)<br>Reduce impact of natural disasters | Video surveillance<br>Emergency services<br>Disaster response |
| Governance | Market place, data analysis (monitor, control, predict)<br>Share cross segment knowledge necessary | Apps<br>eGovernance<br>City Dashboard |
| Health | Staying at home longer<br>Self-determination | Connected Life |

RBHU/GM Javier González Pareja | 8/29/2016

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# Bosch solutions for Smart City



- Virtual Power Plant
- Infrastructure Remote Monitoring
- City Data Platform
- Energy efficient heating & cooling systems
- Flood Recognition
- Camera based security functions
- Connected building
- Community App
- Intermodal Transport System
- Environmental Sensors
- Smart Parking
- Roaming Platform e-charging

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# Internet of Things & Smart City

| 1 Services & Applications | Energy | Building | Security | Mobility | eGovernance |
|---|---|---|---|---|---|

| 2 Software Platform | Bosch IoT Suite |
|---|---|

| 3 Things | |
|---|---|

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# Parking made easy: Connected Parking



**-30%** Traffic

*Community-based Parking*

*Active Parking Lot Management*

*Automated Valet Parking*
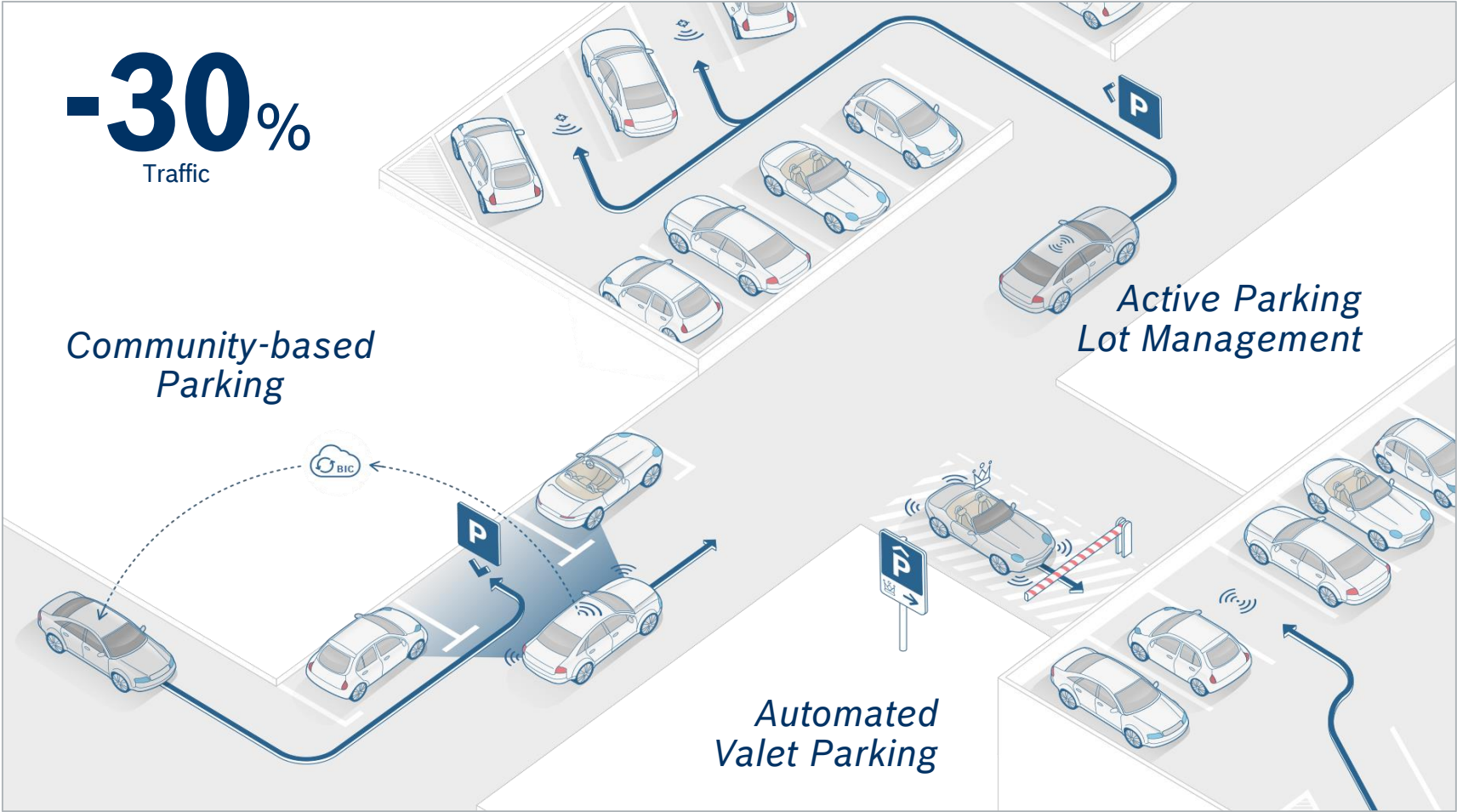
Things

Bosch IoT Suite

Ultrasonic Sensor

Connectivity Control Unit

Park sensor

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# Smart Home

...is the idea of an intelligent interconnected home, which responds individually to your needs and makes your life more comfortable. Combine different devices and benefit from a higher quality of housing and living, from peace of mind and from saving energy…
And all of that with the Bosch Smart Home App.
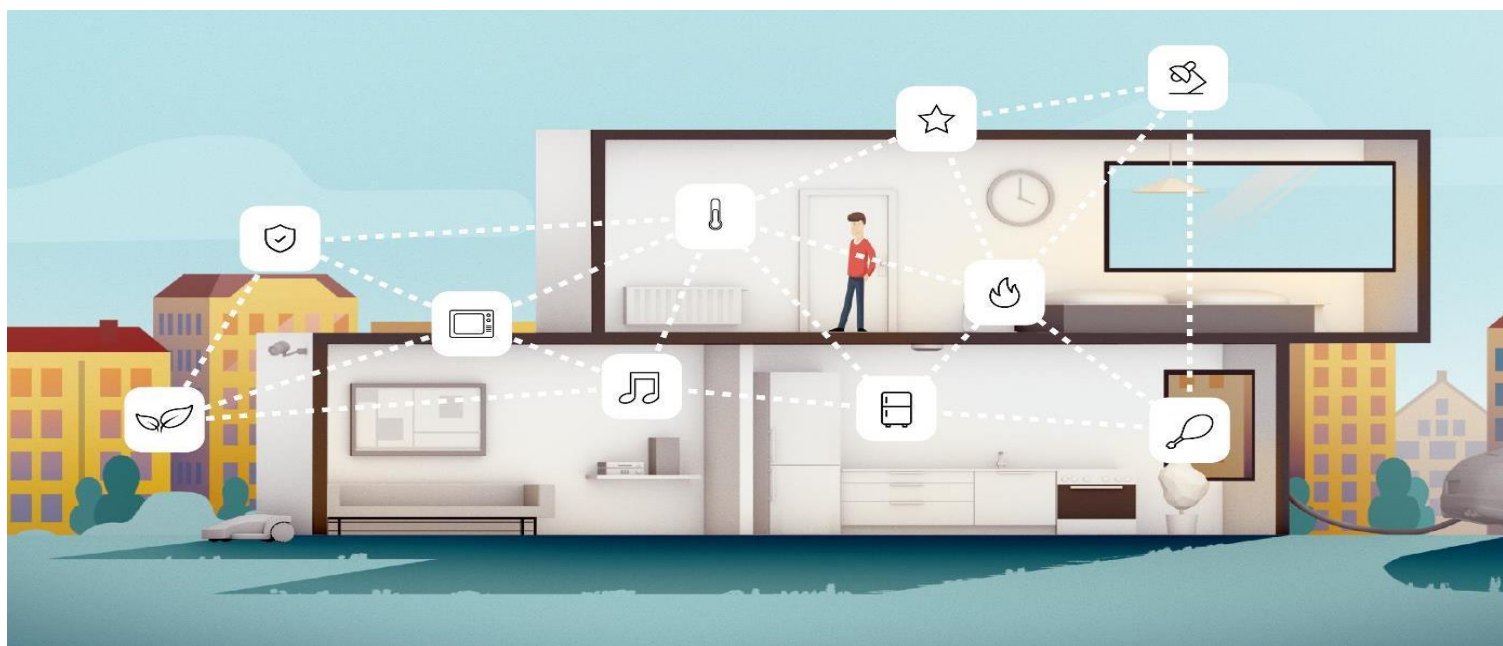


## Advantages
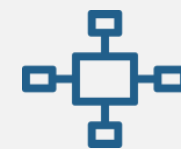
Interoperability with other SH systems

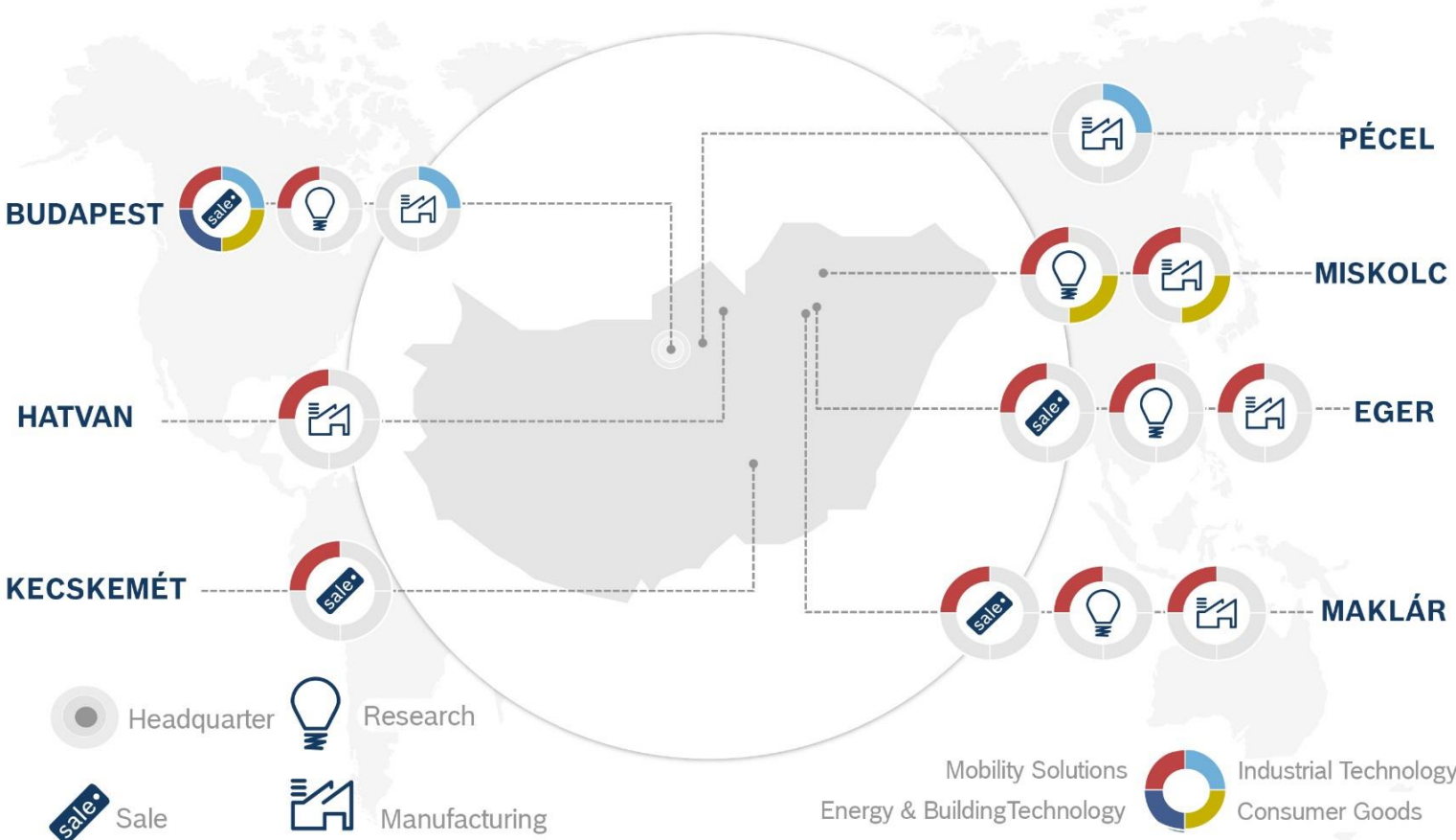Intuitive and appealing usability

Data stays in the home network

Highest quality of products

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# Bosch Group in Hungary



**BUDAPEST**

**HATVAN**

**KECSKEMÉT**

**PÉCEL**

**MISKOLC**

**EGER**

**MAKLÁR**

Headquarter | Research

Sale | Manufacturing

Mobility Solutions
Energy & BuildingTechnology | Industrial Technology
Consumer Goods

**9 legal entities, 8 locations**

**Total Net Sales: 3 095 Mio €**
**Headcount: >12 000**

**BOSCH**

# Engineering Center Budapest
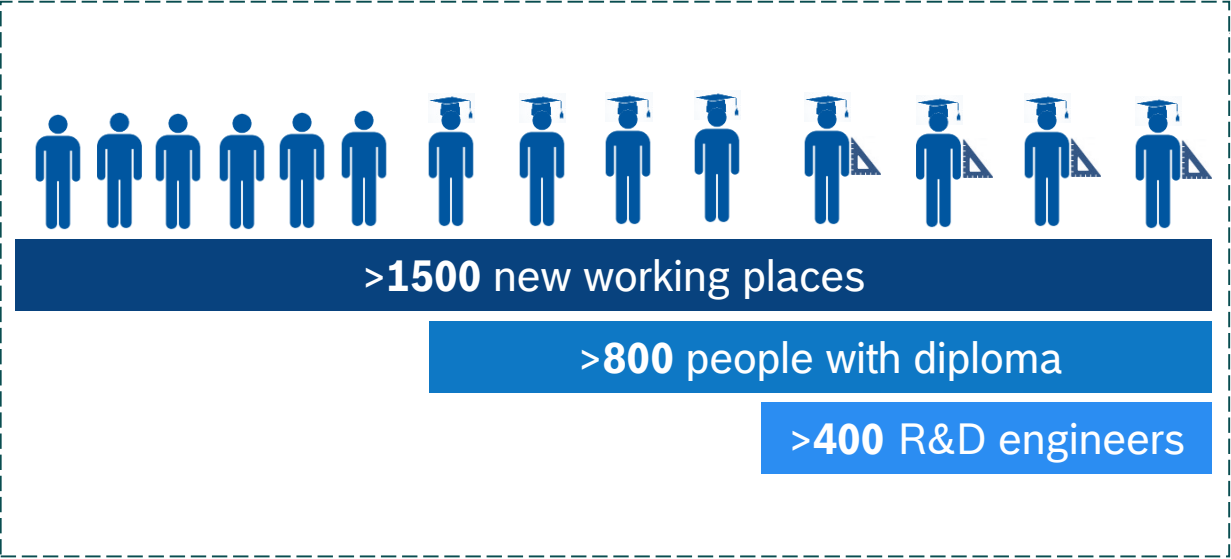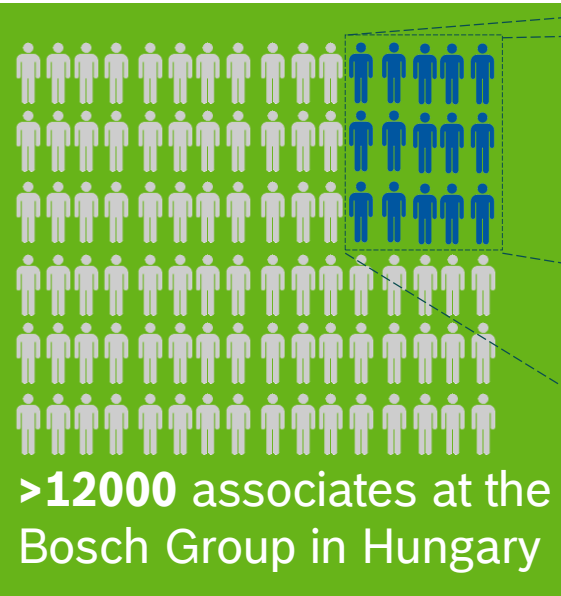
## ...working on Megatrends

augmented reality

internet
of things

eHorizon  Car2Car

smartphone integration

## connected

car2infrastructure  cloud

services  fleet management

entertainment  eCall

legislation  assistance systems

emergency brake assist  autopilot

## automated

highway pilot  sensors

redundancy  electrical steering

Digitale Umgebung

valet parking

costs  hybrid  e-motor

roaming  power electronics

eBike

fun

to drive  plug-in  charging infrast.

## electric

market ramp-up battery

smart charging  range

eScooter

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# Bosch Group in Hungary: 2015

8 projects > 74 billion HUF



>12000 associates at the Bosch Group in Hungary

>1500 new working places

>800 people with diploma

>400 R&D engineers

Made in 🇭🇺 ... Invented in 🇭🇺 ... and Developing 🇭🇺

BOSCH

INVENTED FOR A
**CONNECTED WORLD**
**EVERYWHERE**

THANK YOU
FOR YOUR ATTENTION!

Javier González Pareja
**Bosch Group Hungary**
29 August 2016

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