

[01] CES® 2017: The Internet of Things is getting personal – Bosch focuses on intelligent assistants

[02] CES® 2017 Innovation Awards: Bosch honored with four distinctions for three smart solutions

[03] CES® 2017: Bosch is showing these smart solutions in Las Vegas

[04] Bosch motorcycle systems honored with three CES 2017 Innovation Awards

[05] CES 2017: Bosch will be presenting what a smart home can do today

[06] “Connected Car Effect 2025”

[07] Strong in the U.S.: Bosch increases capital expenditure – 400 million euros for the current year

[08] 2017: Bosch is showing what can and will be done with the Internet of Things

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CES® 2017: The Internet of Things is getting personal – Bosch focuses on intelligent assistants Connectivity is reaching the next phase of development

January 4, 2017
PI 9519 RB Gri/BT

- ▶ Struth, member of the Bosch board of management: "With personalization, Bosch is driving the next trend in connectivity forward"
- ▶ Products are becoming intelligent companions in all spheres of life: smart homes, smart cities, connected mobility and Industry 4.0
- ▶ New concept car: the car is becoming an assistant
- ▶ World premiere: Bosch start-up presents a home robot
- ▶ New IoT platform: Stories, videos and animations about the connected Bosch world at iot.bosch.com

Las Vegas – Imagine you had a personal companion or guardian angel in every sphere of life. Someone who always knew whether you left the oven on – even if you were already on your way somewhere with the car, or even sitting at the office. At CES 2017, Bosch is showing that connected solutions have already made this vision a reality. "Personalization is a growing trend in the realm of connectivity, and we are driving this trend forward," said Dr. Werner Struth, member of the Bosch board of management, during the company's press conference at CES 2017 in Las Vegas. At the world's biggest consumer electronics trade show, the global supplier of technology and services is focusing on the following domains: smart homes, smart cities, connected mobility and Industry 4.0.

With the increasing personalization of products and services, connectivity is now reaching the next phase of development: "The connected world is getting emotional. Devices are becoming intelligent companions that make everyday life easier and safer at home, in the city, in the car and at work." According to a [recent study](#), more than 60 percent of respondents believe that intelligent assistants make sense. "Bosch shapes all spheres of the connected world. Our set-up means we are well-prepared to take on a leading role in the personalization of connectivity," said Struth. Very few industrial enterprises have

comparable expertise at all three levels of the internet of things: Bosch brings extensive experience to the table with sensor technology, software and services, and also has its own IoT cloud. This makes the company a one-stop shop for the Internet of Things (IoT). Data security is playing a central role in this. „Customers and users have full transparency and decide themselves how data are used“.

Moreover, Bosch has a goal of networking 100 percent of its electronic products and offering a connected service package for each product. The customer is the main focus here: “Connected technologies must always have a benefit”, says Struth. “It is becoming increasingly important to offer clever additional functions and services tailored to individual needs and usage habits”, said Struth. Thanks to the personalization of products and solutions through connectivity, this is increasingly possible.

The car is becoming a personal assistant

By 2022, the global market for connected mobility is set to grow by almost 25 percent per year. In just a few years, cars will become an active part of the IoT and will be able to communicate with other modes of transportation as well as with the smart home. At CES 2017, Bosch is presenting a new concept car that shows how different spheres of life will be seamlessly interconnected in the future. “The vehicle will play a central role in cross-domain communication,” Struth said. Personalized communication between the car and its driver will also be expanded: New functions are connecting the car to its surroundings, the smart home and the repair shop. These functions will make highly automated driving possible. “Bosch is working diligently to make sure that mobility and smart services become one,” said Struth. “If the car is connected to the smart home or the smart city via the cloud, there will be measurable benefits. Connectivity is turning the car into an assistant on four wheels.”

What is more, the Bosch concept car comprises a broad range of innovative technologies: The moment the driver sits down, facial recognition technology sets the steering wheel, mirrors, interior temperature, and radio station according to the driver’s individual preferences. The system is controlled via a haptic touch display and an innovative gesture control system, both of which give tangible feedback when they are used. If the car is highly automated, cloud-based services enable videoconferences, or allow drivers and passengers to plan their weekend shopping trips or watch the latest videos. By 2025, highly automated driving will save the average frequent driver in the United States, Germany or China almost 100 hours per year, according to a study that Bosch recently commissioned. In purely technical terms, communication control units such as the Bosch Central Gateway make connectivity possible. The Gateway is a hub that ensures communication with all domains across all data buses. ETAS and

ESCRYPT, which are both part of the Bosch Group, provide the transmission and encryption solutions. These ensure that cloud-based vehicle software updates can be carried out securely throughout the vehicle's service life. If the car communicates with its surroundings, security updates must be carried out on a regular basis.

When communicating with its surroundings, the car also takes on important tasks in the connected city. For instance, with community-based parking, the car is becoming a parking spot locator. When driving along the street, the car detects gaps between parked cars. The data gathered is then transmitted to a digital street map. High-performance Bosch algorithms assess the plausibility of the data and make forecasts on the parking spot situation. A cloud-based service that uses this data to create a real-time parking map saves the driver a great deal of time and money, and also helps reduce stress. Pilot projects in the U.S. are planned for 2017. In cooperation with Mercedes-Benz, Bosch is currently testing the community-based parking concept in metropolitan Stuttgart.

Connected helpers are taking on additional functions at home

In the walls of their own homes, too, users can rely on the internet of things for a broad range of intelligent helpers that make life easier and safer. Some products now even perform several functions at once: for example, the smoke detector also monitors air quality and its siren can be used to scare off unwanted guests.

The Bosch smart home system makes it possible to control connected devices at home via a single app. With the scenario manager, the smart house is becoming even more intuitive. When you leave the house, there is no longer any need to check whether you have turned off the heat, electrical devices or the lights. This makes life safer and more comfortable. By activating scenarios with the tap of a finger, the scenario manager performs such routine tasks through the Bosch smart home app.

Products designed as intelligent assistants from the start

With the personalization of connected solutions, technologies and services are not only tailored to individual needs; Bosch is also developing products that are specifically designed to be personal assistants. These can also communicate with their users. One example is "My kitchen elf" – or Mykie, for short. With this concept, BSH Hausgeräte GmbH has stepped into the world of personal assistants. Mykie is operated with the user's voice. It listens to users, answers their questions, and helps with a number of daily chores. For instance, Mykie immediately knows what is in the refrigerator, how long the cake should stay in the oven, or whether the sun will be shining in the afternoon. With the connected Mykie, the user can control the entire range of Home Connect household

appliances. Mykie can also bring its users together virtually – so they can cook together or exchange recipe ideas, for instance.

World premiere: Bosch start-up presents new home robot

Mayfield Robotics, the start-up that Robert Bosch Start-up GmbH (BOSP) supports, focuses on the home robot business. The company specializes in the development of home robots. At the CES 2017, it is presenting Kuri, its first commercial robot, which is scheduled to be launched in the United States at the end of 2017. The robot is about 50 centimeters tall and is equipped with loudspeakers, microphone, camera and a number of sensors. It can move about the room, all the while taking note of the shortest possible routes. Kuri interacts with residents and when he sees the mother, he reacts differently than when he runs into her young son around the house. For instance, Kuri can play music or inform parents who are stuck in traffic that their children have come home from school. More than 30 robotics engineers and designers work at the start-up's headquarters in Redwood City, California. They benefit especially from the creative freedom and inspiring Silicon Valley start-up culture. "For Bosch, targeted investments in creative start-ups are important, as they allow us to respond to new trends at an early stage. In so doing, we are securing our access to disruptive industry developments," said Struth.

Assistants are also on hand in networked manufacturing

Assistants also play a significant role in networked manufacturing. For instance, the APAS robot makes flexible and efficient manufacturing possible. It takes on strenuous, dangerous and monotonous tasks and is designed to cooperate closely with human beings. Thanks to its sensor skin, the automatic production assistant detects when a person gets too close and then shuts down immediately. Bosch designed the APAS specifically with its use in Industry 4.0 – or Connected Industry – in mind. As a lead provider and lead user of Industry 4.0 technologies, Bosch is set up like almost no other company.

With its new IoT Gateway solution, the company can also offer the benefits of connected industry to operators of older machines. "Many machines are still not connected to Industry 4.0. Among other things, they are lacking the necessary sensors, software or connection to the company's IT systems – which are the prerequisites of networked production," said Struth. "In global terms, the market for retrofit solutions such as the Bosch IoT gateway is worth billions." The IoT Gateway combines sensor technology, software and an IoT-enabled industrial control system. This makes it possible to monitor the status of machines. According to Struth, industry needs connected machines in order to secure lasting success. This is precisely what the Bosch IoT gateway offers – a quick and flexible solution.

Bosch's view on the Internet of Things

"We believe that connectivity is more than just technology. It's part of our lives. It improves mobility, shapes the cities of the future, and makes homes smarter, industry connected, and healthcare more efficient. In every sphere, Bosch is working toward a connected world. A world that opens up possibilities no one could ever have imagined. So let's go beyond building connected devices. Let's build connections with real benefit – around the world, across the web, within the cloud. Let's connect founders with funders, dreamers with doers, parts with the whole. Let's link the virtual and the physical and leave a lasting legacy in our world. Let's be Simply.Connected."

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EXPERIENCE BOSCH AT CES 2017: Thursday to Sunday, January 5-8, 2017
at Central Hall, booth #14128

FOLLOW Bosch's CES 2017 Highlights on Twitter: [#BoschCES](#)

PANELS WITH BOSCH EXPERTS:

Thursday, January 5, 2017; 11:30 am to 12:30 pm (local time): [Conference track "MEMS & Sensors: Personalizing Consumer Technology", Session "Where are Consumer Electronics Taking the Sensors Industry?" with Stefan Finkbeiner, CEO and General Manager, Bosch Sensortec; Venetian, Level 4, Marcelllo 4501](#)

Friday, January 6, 2017; 3:30 pm to 4:30 pm (local time): [Conference track "Vehicle Technology"; Session "Redefining the Automotive Infotainment Experience" with Managing Director of Bosch SoftTec Torsten Mlasko, Las Vegas Convention Center N258](#)

The Bosch Group is a leading global supplier of technology and services. It employs roughly 375,000 associates worldwide (as of December 31, 2015). The company generated sales of 70.6 billion euros in 2015. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiaries and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing and sales network covers some 150 countries. The basis for the company's future growth is its innovative strength. Bosch employs 55,800 associates in research and development at 118 locations across the globe. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life."

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Additional information is available online at www.bosch.com, www.bosch-press.com, twitter.com/BoschPresse



CES® 2017 Innovation Awards: Bosch honored with four distinctions for three smart solutions

From water heater to motorcycles: Bosch drives connectivity in all domains

December 7, 2016
PI 9501 RB Gri/Sekr

- ▶ Bosch presents innovative solutions in the realms of smart homes, smart cities, connected mobility, Industry 4.0, and sensor technology at CES® 2017
- ▶ Smart water heater honored in the Home Appliances category
- ▶ Rider information system takes prize in the In-Vehicle Audio/Video category and is honored in the Vehicle Intelligence category
- ▶ Connected safety solution for small motorcycles and scooters is honored in the Vehicle Intelligence category
- ▶ New IoT platform: Bosch stories, videos, and animations about the connected world at iot.bosch.com

Las Vegas – At CES® 2017, Bosch is presenting connected technologies that aim to make everyday life easier, more comfortable and safer. From January 5-8, 2017, the global supplier of technology and services is showing innovative solutions in the realms of smart homes, smart cities, connected mobility, Industry 4.0, and sensor technology. Prior to the trade show, Bosch was honored at the annual “CES® 2017 Innovation Awards” with four awards for three smart products: a connected flow-type heater and two innovative motorcycle solutions.

The smart water heater

In the Home Appliances category, the new generation of Bosch water heaters was honored. Via an app, users can switch the innovative water heaters on and off remotely, and even regulate water temperature or control the status of their boilers. The internet-enabled Greentherm 9000iSE makes it possible for homeowners and residents to conveniently operate the device via a smartphone or tablet.

Connectivity makes motorcycle riding safer and more comfortable

[Bosch motorcycle systems were honored with a total of three awards.](#) A rider information system that replaces the traditional instrument panel with a display took the prize in the In-Vehicle Audio/Video category, and was also an honoree

in the Vehicle Intelligence category. Moreover, a connected safety solution for small motorcycles and scooters was an honoree in the Vehicle Intelligence category. The **Integrated connectivity cluster** combines all the motorcycle's instrumentation on a single display and makes it possible for riders to use their smartphones. The advantage of this is that the system automatically adapts the display to current usage. This means the rider is shown only the information needed at that particular moment. This reduces distractions and thus enhances safety. For example, at high speeds, all the display information elements are gradually hidden, except for the speed indicator and warning notifications. The display is easy to read in all weather conditions. Even in direct sunlight, the colors are distinct and the contrast is very high. In the dark, the display does not dazzle the rider. What is more, it is rainproof. Regardless of whether the user wants to select music or answer a call, all the main smartphone functions can be operated during the ride via a remote control on the handlebars: there is no need to handle the device directly. After initial linking, which only needs to be performed once, the system connects immediately to the smartphone and helmet headset via Bluetooth.

A connected safety solution for small motorcycles or scooters was also honored in the Vehicle Intelligence category. The **lean connectivity unit** connects the smartphone to small motorcycles or scooters via Bluetooth. Its main components are a handlebar remote control, a box for establishing the connection to the smartphone, and an app. If the driver has fallen off the motorcycle or scooter, the app automatically sends a text message containing the coordinates of the accident to a predetermined emergency contact person. In situations in which the rider feels unsafe, the handlebar remote control can be used to make an emergency call. In this case too, a previously determined emergency contact person is alerted via a text message. In the event of an emergency call, information on the vehicle's position is transmitted at regular intervals. The lean connectivity unit also allows users to unlock the vehicle via their mobile phones. Using the corresponding app, the car owner can also share a smartphone "key". This, for instance, allows other family members to use the vehicle as well. Telephone functions are another option. Among other things, they allow the user to set the lean connectivity unit to reject calls automatically when the vehicle is moving.

About the CES Innovation Awards

The CES Innovation Awards are sponsored by the Consumer Technology Association (CTA)[™]. The CES Innovation Awards are awarded in 28 categories and Bosch has already been honored in the past: in 2016, the global supplier of technology and services won a CES Innovation Award for its neoSense product, a touchscreen with haptic feedback.

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EXPERIENCE BOSCH AT CES 2017 in Las Vegas, Nevada, USA: At CES 2017, Bosch is showing how the Internet of Things is getting personal – how things can be turned into partners. Connected technologies enable personal assistance in all areas of life: they improve mobility, shape the cities of the future, make the home intelligent, health care technology more efficient, and make work easier. For the fifth time at CES, Bosch is presenting an expanded portfolio of "Simply.Connected" networked solutions.

BOSCH PRESS CONFERENCE: Wednesday, January 4, 2017, 9:00 am to 10:00 am (local time): with [Dr. Werner Struth, member of the Bosch board of management](#) at Mandalay Bay South Convention Center, Level 2, Mandalay Bay Ballrooms BCD

FOLLOW Bosch's CES 2017 Highlights on Twitter: [#BoschCES](#)

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CES® 2017: Bosch is showing these smart solutions in Las Vegas

December 14, 2016

PI 9509 RB Gri/BT

Connectivity makes everyday life easier and is turning things into partners

- ▶ Bosch booth at CES: Central Hall, #14128
- ▶ Smart home: making life at home easier and safer
- ▶ Smart city: improving quality of life in cities
- ▶ Connected mobility: new concept car as a personal assistant
- ▶ Industry 4.0: connecting people, machines, and objects in real time
- ▶ Sensor technology: tiny sensors are enabling connectivity
- ▶ [CES Innovation Awards: four awards for three Bosch solutions](#)
- ▶ New IoT platform: stories, videos, and animations about the Bosch connected world at iot.bosch.com

Las Vegas – From **January 5 to January 8, 2017**, **Bosch** is showing how connectivity is turning things into partners, companions, and assistants **at CES® 2017 in Las Vegas**. The global supplier of technology and services is presenting innovative solutions at the trade show in the following domains: **smart home, smart city, connected mobility, Industry 4.0, and sensor technology**. These technologies make everyday life easier, more comfortable, and safer. Bosch can be found in the **Central Hall at booth #14128**.

Smart home: making life at home easier and safer

Bosch Smart Home System expanded: The smart home system makes it possible to control connected devices at home via a single app. At CES, Bosch is showing how it has enhanced the system with technologies such as smoke and movement detectors, which can take on additional functions, and the scenario manager. The latter makes the connected home even more intuitive. It also makes users' everyday lives easier. For instance, when they leave the house, users no longer need to check whether the heat, electronic devices, or the lights have been turned off. The scenario manager for the Bosch smart home app assumes these routine daily tasks and can be easily activated with the tap of a finger.

More safety at home: In addition to this, Bosch is presenting three new solutions for more safety. With the 360° indoor camera and the Eyes outdoor camera, users monitor what's going on at home at all times, regardless of where they are in the world. Thanks to local, encrypted recording and messaging, users no longer miss any important events, unless of course they want to. The 360° indoor camera's lens easily be pushed into the camera's body at the tap of a finger, and this ensures privacy. The Eyes outdoor camera is more than a camera: it also combines outdoor light, movement sensors, and an intercom system in a single intelligent device. The Bosch Twinguard, a premium smoke detector with air quality sensor, enhances safety in the home. Thanks to its professional dual ray technology, it detects dangerous situations more reliable, and this prevents false alarms.

A personal assistant for the kitchen: "My kitchen elf" – Mykie for short – is a concept for a personal assistant that serves as a smart companion in the kitchen. It is operated via the user's voice. Mykie listens, answers questions, and helps with everyday chores. For instance, he knows exactly how long the cake still needs to bake in the oven, what's in the refrigerator, or whether the sun will be shining in the afternoon. With the connected Mykie, users can control the entire range of Home Connect household appliances.

Connected power tools: Bosch offers professional tradespeople everything from products to full inventory management systems that can be used to optimize work processes and increase productivity. What is more, owners of connected Bosch power tools can personalize them via an app: They can configure their devices to meet their individual needs and save the settings for future use. Users can also receive information on the status of their tools as well as tips to correct malfunctions, for instance when a device turns itself off due to overheating. In addition to this, the app shows the user how long a device has been in use. In some cases, the app can also be used as a remote control, and this saves tradespeople time.

Smart city: improving quality of life, energy efficiency, and safety

Solutions for the intelligent city: At CES, Bosch is showing solutions in the areas of mobility, energy and building technology, security, and digital city administration. When it comes to mobility, the technologies on display include environmental monitoring systems and connected parking technologies, as well as fleet management, e-mobility, and intermodal transportation solutions. When it comes to energy, virtual power stations, energy efficient heating, hot water, and cooling systems, and energy storage technology are on display. Security systems include fire protection technologies, access control systems, and video

surveillance solutions. For residential buildings, Bosch offers smart home technology and connected household appliances.

Smart technology for new neighborhoods in San Francisco: As an example of an ongoing smart city project, at CES Bosch is providing a look at how the site of a former navy shipbuilding site and football stadium are becoming the The San Francisco Shipyard and Candlestick Point, two new, attractive neighborhoods. As technology partner to FivePoint, the community master developer, Bosch is working on smart solutions for the modern neighborhoods.

Vivatar: The new Vivatar app is a digital guardian angel for people on the move – for instance when they are on their way home late at night, or when they are doing outdoor sports on rough terrain. Via GPS and a chat function, users can stay in touch with friends and family if they are feeling unsafe when they are out and about. In the event of an emergency, they can get quick help at the tap of a finger through the Bosch emergency service function.

Community-based parking: Especially in urban residential areas, curbside parking spots are in high demand. With community-based parking, Bosch is taking over the search for a parking spot, thus easing the burden on drivers. When a car is driving along the street, ultrasound sensors detect available spots and measure the size of the space between parked cars. The data gathered is then transmitted to a digital street map. High-performance Bosch algorithms assess the plausibility of the data and make forecasts on the parking spot situation. A real-time map is available to cars in the vicinity, and drivers can thus drive directly to available parking spots. Pilot projects in the U.S. are planned for 2017. In cooperation with Mercedes-Benz and other automobile manufacturers, Bosch is currently testing the community-based parking concept in German (and European) cities.

Connected mobility: turning the car into a personal assistant

How will the driving of the future look? Bosch is presenting its vision at CES 2017 with a new concept car. Alongside home and work, connectivity is turning the car into the third living space. With the help of personalized communication between the car and the driver, increasingly high performance and comprehensive services will be safe to operate in the future as well. In addition, automated driving will soon give drivers more time to dedicate to other tasks. For instance, drivers and passengers will be able to use time spent in the car to write emails, or entertain themselves with streamed music or videos. In the new concept car, Bosch is presenting a broad range of innovations, including:

- Face recognition and intelligent personalization: The Driver Monitor Camera makes quick face recognition and personalization possible from the moment

the driver is in the car. For instance, the car sets the steering wheel, mirrors, interior temperature, and radio station according to the driver's personal preferences. While on the move, driver drowsiness detection helps enhance safety: if the driver risks falling asleep or is very distracted, the car issues a warning and helps prevent critical situations.

- Haptic feedback with neoSense: Thanks to the touchscreen with haptic feedback, the buttons that appear on the touchscreen feel like real buttons. In many instances, this makes it possible to operate the infotainment system without looking. Drivers can thus keep their eyes on the road, and this improves safety. This technology was honored with a CES Innovation Award in 2016, and has since taken major strides toward series production.
- A crystal-clear display thanks to OLED: With the concept vehicle, OLED (organic light-emitting diode) displays have been integrated into the car's cockpit for the first time. These enable a crystal-clear display.
- Digital exterior mirrors, now also in the car: The mirror cam system is a camera-based solution that replaces both exterior mirrors. The video sensors can be integrated into the vehicle interior, and images are shown on displays close to the A-pillars on the right and left sides of the car. Moreover, the digital technology enables a context-specific display. When a car is on the highway, for instance, the view is concentrated mainly behind the car. In contrast, in city driving, a broader view helps improve safety. Good contrast improves the view when driving at night.
- Communication between the car and the driver: In the future, the human machine interface (HMI) will play an increasingly important role in the car – especially when it comes to automated driving. For instance, it lets the driver know whether automated driving is possible on a specific route. To hand over responsibility for driving to the car, the driver must then press two buttons on the steering wheel for several seconds. During the automated drive, the HMI shows the driver what the car's environmental sensors detect and how much time is left until the driver needs to start driving again.
- Communication between the car and the home: With automated driving, drivers have a greater number of infotainment functions at their disposal via the vehicle's central display than when they are driving themselves. Thanks to the internet connection, drivers can now review upcoming appointments or plan shopping trips, for instance. The smart home app also makes it possible for drivers to operate the awnings at home or adjust the heating. Furthermore, he can check whether there is enough food in the refrigerator. At the touch of a button, the app can transmit the shopping list to the delivery service.
- Communication between the car and the bicycle: Thanks to vehicle-to-vehicle-communication, the cars of the future will be informed of other road users long before they are in view. Bicycles in particular are easily overlooked in road traffic because they are hidden by buses or trucks. At CES, Bosch is showing

a communication link between the new concept car and a bicycle. With it, vehicles can constantly exchange information about their location and direction of travel. This reduces the risk of collision.

- Bosch Integrated Payment Solutions: Bosch developed this ePayment solution, which offers new services via the IoT ecosystem, including a standardized payment function. To enable this, the required agreements have already been signed with many payment systems, including PayPal.

Communication between the car and the workshop: At CES 2017, Bosch is also showing how the connected workshop works in the interplay with web-based services and augmented reality applications. In the future, drivers and workshop operators will be able to plan visits to the workshop more easily, and this will improve work processes when it comes to service.

Retrofittable emergency call service for the car: Bosch is presenting the Retrofit eCall at CES, a retrofittable adapter for the eCall emergency call service. It can easily be placed directly into the cigarette lighter and offers real benefits: An acceleration sensor detects the collision and triggers an emergency call. Via a smartphone app, data on details such as the car's position are transmitted. The severity of the impact is also analyzed, and corresponding measures are automatically initiated. If the collision is only of moderate severity, the control center calls to speak to the driver directly and determine whether a service vehicle or ambulance is required. If the driver fails to answer, an ambulance is alerted immediately.

Firmware updates "over the air" (FOTA): Connected functions and especially highly automated driving call for consistently reliable functioning throughout the vehicle's entire life cycle. This requires software updates that can be carried out via the cloud. Bosch offers the appropriate communication control units and the central gateway computer, while ETAS and ESCRYPT (both parts of the Bosch Group) provide the necessary transmission and encryption technologies. These ensure functional safety and data security.

Industry 4.0: connecting people, machines, and objects in real time

IoT Gateway: With the IoT Gateway, Bosch is bringing the advantages of connected industry to the operators of older machines that still lack the prerequisites of networked production, such as sensors, software, or a connection to the company's IT connection. The connected system combines sensor technology, software, and IoT-enabled industrial management, and thus makes it possible to monitor machine status.

Automatic production assistant (APAS): Bosch is presenting the APAS at CES, which makes flexible and efficient manufacturing possible. It performs strenuous, dangerous, or monotonous tasks and is best used in areas of manufacturing in which close cooperation with human beings is called for. At the trade show, APAS is serving up coffee and cotton candy to visitors at the Bosch booth. Thanks to its sensor skin, the robot detects when people are too close to it and shuts down immediately.

Augmented reality and live streaming in manufacturing: In the maintenance of machines such as the APAS, employees can now also receive the support of new Bosch augmented reality solutions. Digital information on technical details, for instance, enhances live recordings. Without even opening up the digital production assistants, users gain an exact picture of their insides. At CES, a ruptured cable is being simulated. Animations with repair instructions guide the user through the maintenance process step by step. As a result, service employees without expert knowledge can detect and repair errors quickly and reliably. With Bosch video analysis services, employees can visualize manufacturing processes remotely and in real time. These recordings can then be used for data mining purposes, for instance in the long-term analysis of errors that occur sporadically.

Smart sensor technology: Tiny sensors make connectivity possible

MEMS sensors: Tiny Bosch MEMS sensors (Microelectromechanical systems) are in vehicles, smartphones, game consoles, tablets, and countless other devices. They make many applications in consumer and electronics and the car possible. Although they are tiny, they are extremely effective: They help save lives and energy, and they make driving more comfortable. Bosch MEMS sensors are the eyes and ears of millions of electronic devices. At CES 2017, Bosch is showing it a new MEMS sensor for applications in gaming, sports and health.

XDK sensor platform for the development of new IoT solutions: With the XDK sensor platform, Bosch offers a comprehensive hardware and software platform with different types of sensors as well as a Bluetooth and WiFi connection. Components include acceleration and yaw rate sensors, a magnetometer, as well as sensors that measure noise volumes, humidity, air pressure, temperature, and digital light. Companies can use the sensor platform to develop the IoT solutions that best suit their needs. The XDK sensor platform is easily installed and can be adapted to individual applications.

CES Innovation Awards: Four awards for Bosch solutions

Motorcycle solutions honored: Bosch motorcycle solutions were honored with a total of three awards. The integrated connectivity cluster (ICC) driver information system took the prize in the In-Vehicle Audio/Video category and was honored in the Vehicle Intelligence category. The ICC combines all the motorcycle's instrumentation on a single display and makes it possible for riders to link their smartphones with the bike and thus use selected apps. The system automatically adapts the display to current usage. This means the rider is shown only the information needed at that particular moment. Besides the ICC, the lean connectivity unit safety solution was also honored in the Vehicle Intelligence category. It connects the smartphone via Bluetooth to small motorcycles and scooters.

Connected water heater: The Greentherm 9000iSE water heater also received a CES Award. Via an app, the device can easily be turned on or off remotely from a smartphone or tablet. Users can also regulate water temperature or monitor the water heater's operating status. In the event of a malfunction, the heater alerts users on their smartphones.

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EXPERIENCE BOSCH AT CES 2017 in Las Vegas, Nevada, USA: At CES 2017, Bosch is showing how the Internet of Things is getting personal – how things can be turned into partners. Connected technologies enable personal assistance in all areas of life: they improve mobility, shape the cities of the future, make the home intelligent, health care technology more efficient, and make work easier. For the fifth time at CES, Bosch is presenting an expanded portfolio of "Simply.Connected" networked solutions.

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Friday, January 6, 2017; 3:30 pm to 4:30 pm (local time): [Conference track "Vehicle Technology"; Session "Redefining the Automotive Infotainment](#)

Experience” with Managing Director of Bosch SoftTec Torsten Mlasko, Las Vegas Convention Center N258

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Additional information is available online at www.bosch.com, www.bosch-press.com, twitter.com/BoschPresse



Bosch motorcycle systems honored with three CES 2017 Innovation Awards Bosch gets the motorcycle connected

November 11, 2016
PI 9472e RB IEh/KB

- ▶ Bosch motorcycle systems honored with three CES Innovation Awards in two categories
- ▶ Rider information system winner and honoree in the In-Vehicle Audio/Video and Vehicle Intelligence categories
- ▶ Connected safety solution for small motorcycles and scooters is honoree in the Vehicle Intelligence category
- ▶ Bosch presents both products for powered two-wheelers at CES in Las Vegas

Enhanced safety and more infotainment for powered two-wheelers was Bosch's formula for success at the CES 2017 Innovation Awards. On November 10, 2016, the judges honored the company's motorcycle systems with a total of three awards. A rider information system that replaces a traditional instrument cluster with a display impressed the judges twice, becoming a winner in the In-Vehicle Audio/Video category and an honoree in the Vehicle Intelligence category. In addition to that, a connected safety solution for small motorcycles and scooters made it to the winner's podium – it too was declared an honoree in the Vehicle Intelligence category. "With its dedicated connectivity solutions, Bosch makes motorcycles safer and more convenient," says Manfred Baden, President of the Car Multimedia division at Robert Bosch GmbH.

Infotainment on the vehicle display

The rider information system, known as the Integrated connectivity cluster, combines all the motorcycle's instrumentation on a single display and makes it possible for riders to use their smartphone. The advantage of this is that the system automatically adapts the display to current usage. That means the rider is shown only the information needed at that particular moment. This in turn reduces distraction, thus enhancing safety. So, for example, at high speeds, all the display information elements with the exception of the speed indicator and warning notifi-

cations are gradually hidden. The display is easy to read in all weather conditions. Even in direct sunlight, the colors are distinct and the contrast is very high; and in the dark the display does not dazzle the rider. What is more, it endures rain.

Regardless of whether the user wants to select some music or answer a call, it is possible to operate all the main smartphone functions using a handlebar remote control during the ride without ever having to handle the device directly. After one-time initial pairing, the system connects immediately via Bluetooth to the smartphone and helmet headset.

Enhanced safety saves lives

The connected safety solution, known as the Lean connectivity unit, connects the smartphone to small motorcycles or scooters via Bluetooth. The product was developed in India with a clear focus on the needs of users in the Asia/Pacific region. After all, braking control systems for powered two-wheelers, like ABS and MSC, are still only a rarity there. And so, the number of road traffic fatalities among riders of powered two-wheelers continues to rise. Analyses of accidents in Indonesia and Thailand have shown, for instance, that approximately 21,000 people die in motorcycle accidents in these two countries every year. India will for this reason make ABS a legal requirement for all new motorcycle types from 2018 and will be one of the first newly industrialized countries to take this step.

The main components of the Lean connectivity unit are a handlebar remote control, a box for establishing the connection to the smartphone, and an app. If the driver has fallen off the motorcycle or scooter, the app automatically sends a text message containing the coordinates of the accident to a predefined emergency contact. In situations in which the rider feels unsafe, the handlebar remote control can be used to send an emergency call. In this case too, a previously defined emergency contact is alerted via a text message. The emergency call transmits the vehicle's position at regular intervals. The Lean connectivity unit also allows users to unlock the vehicle via their mobile phone. Using the corresponding app, the owner can furthermore share a smartphone "key" and so, for instance, allow other family members to use the vehicle too. Telephone functions are an option as well, allowing the user, for example, to set the Lean connectivity unit to reject calls automatically when the vehicle is moving.

The CES Innovation Awards are sponsored by the Consumer Technology Association (CTA)TM and honor the best products at CES every year in advance of the show. The CES Innovation Awards are awarded in 28 categories. In addition to the motorcycle systems, a new line of highly efficient and app-controllable gas tankless condensing water heaters for the residential and commercial buildings

was also honored in the Home Appliances category. In 2016, Bosch already won a CES Innovation Award for its neoSense product, a touchscreen with haptic feedback.

EXPERIENCE BOSCH at the CES 2017 in Las Vegas, Nevada, U.S.: At CES 2017, Bosch will show how the Internet of Things is getting personal – turning things into partners. Connected technology enables personal assistance across all domains of people’s lives: improving mobility, shaping the life in the cities of the future, making homes smarter, healthcare more efficient and working holistic. Exhibiting at CES for the fifth year, Bosch will introduce an extended portfolio of solutions that are “simply.connected.”

BOSCH PRESS CONFERENCE: Wednesday, January 4, 2017, 9:00 – 9:45 AM (local time) with **Werner Struth**, member of the board of management of the Bosch Group at Mandalay Bay Hotel, South Convention Center, Ball Rooms B, C & D

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Mobility Solutions is the largest Bosch Group business sector. According to preliminary figures, its 2015 sales came to 41,7 billion euros, or 59 percent of total group sales. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector

combines the group's expertise in three mobility domains – automation, electrification, and connectivity – and offers its customers integrated mobility solutions. Its main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

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CES 2017: Bosch will be presenting what a smart home can do today Survey on the preferences for smart homes

December 9, 2016
PI 9502 RB Ho

- ▶ The Scenario Manager for the Bosch Smart Home app makes everyday routines easier – simply activation with the touch of a finger
- ▶ Survey conducted by Bosch and Twitter in six different countries on the preferences for smart homes
- ▶ Energy savings, automatic processes and security are the most convincing arguments worldwide
- ▶ The British and the Americans want to control their home “on the road”
- ▶ Privacy of great importance for a third of the respondents
- ▶ New IoT platform: Bosch stories, videos, and animations about the connected world at iot.bosch.com

Stuttgart / Las Vegas – Bosch offers smart home solutions for many different areas of the home. The Bosch Smart Home System works interoperable: the devices are connected via the Smart Home Controller and can talk to each other. The Bosch Smart Home App allows you to control and monitor the lighting, heating, smoke and motion detectors by tablet or smartphone. At [CES 2017](#), Bosch will be presenting extended functions of the Bosch Smart Home System with the addition of a smoke alarm and motion detector, as well as the Scenario Manager. When it senses smoke, the smoke detector activates a siren in the device and sends the homeowner a message over the app. A clever additional function also allows the siren to be used to scare off unwelcome guests. The Scenario Manager makes running your connected home even more intuitive and it supports everyday tasks: for example, by checking that the heating, electrical appliances, and lights are switched off when you go out.

The British and the Americans want to control their home “on the road”

Recently, Bosch has conducted a survey on the topic of smart homes together with Twitter in Germany, France, Great Britain, Austria, Spain and the US. The

results show that an intelligently connected home can do more today than the majority of respondents considered possible.

The connected home has a place in everyday life for the British and the Americans. At least this is the case if you ask them in what situations they would want to be able to control their smart home while they are on the road. 60 percent of the British and Americans feel this desire, when they are traveling by train or car, for example. Among the Spaniards, Germans and Austrians, this figure is only about half as high, but with the French, it is at least 45 percent. The country comparison is quite similar when respondents are in a hurry. Incidentally, being in a hurry is a situation in which mostly women believe they can reap the benefits of a smart home. They have this in common with the youngest respondents (16 to 24 years), who also want a smart home, particularly while they are lying on the sofa. The idea of being able to have access to your home while you are on vacation has a certain fascination across countries, ages and genders that increases with age, whether it's to look after things or to turn up the heat before returning home.

Saving energy worldwide an important selling point

The smart home takes care of annoying routine tasks automatically, enables control even far away from home and thus conveys a reassuring feeling. Nevertheless, the respondents were even more convinced by the potential for saving energy, when the heating switches off automatically as soon as the windows are opened, for example. The Spanish, French and English, in particular, seem to be very interested in saving money. Between 71 and 75 percent considered saving energy a convincing argument in the survey. While this was also the most popular answer the Germans surveyed gave, they come in last place here by country comparison with 59 percent of the mentions. This is quite surprising because the Germans are normally known for their environmental consciousness. Presumably more financial than ecological aspects make energy saving possibilities so interesting in countries like Spain, France and England, however.

Going on vacation without worrying

Reassurance and security come in second and third place in total as arguments and were named by 59 and 58 percent of the respondents. A smart home that automatically sounds an alarm when an intruder breaks in and warns the residents by sending a push message to their smartphones is just as impressive as the idea of being able to look after things at any time via a connected camera. Security plays a particularly important role for women. While they are generally less convinced of all of the other arguments than men, the situation here is exactly the opposite. Only a third of those surveyed find it especially convenient

to be able to brew the cappuccino already while they are still lying in bed. This is where the French set the tone: 42 percent greatly appreciate being able to find their café au lait ready when they walk into the kitchen.

The French have the greatest confidence in the connected home

A smart home helps make our everyday lives more convenient, saves energy and money and protects the home better. And yet many Twitter users are not yet aware of what a connected home is already capable of doing. For instance, while two thirds of the respondents know that the smart home can turn the lights off automatically when they leave the house, only 22 percent can imagine that the oven can already suggest the perfect recipes. By country comparison, it is worth noting that Twitter users from France are most confident of what smart home technology can do compared to the British, the Americans and the Austrians, for example. Germans and Spaniards, on the other hand, consider much of what is already possible today to be a vision for the future.

It is particularly striking that especially the 25 to 34-year olds come closest to the reality with their assessments. The fact that awareness of the possibilities decreases with age is not as surprising as the fact that many digital natives do not know what functions are possible today. Especially for the 16 to 24 year-olds who don't even know a world without the Internet, networking at home is still surprisingly unknown. The reason for this could be the lack of relevance that home topics have for this age group. This reasoning does not apply for women, however, who were generally more cautious about what a smart home can do in their assessments than men were.

Furthermore, only 50 percent of the surveyed are aware that today's smart home systems are interoperable, meaning that different devices can communicate with each other, even independent of the manufacturers.

Many suspect high costs, data protection a high priority

When asked about the reasons why they have not yet linked their home, more than half of the respondents cited high initial costs, whereby this factor becomes less important with age. Especially the Spaniards (70 percent) and the French (68 percent) say that the technology is too expensive for them. Data protection, a topic that Bosch is working closely on, is a major concern for a third of the respondents. In fact, all smart home solutions from Bosch meet the highest security standards. Every user can decide for himself whether his data should remain inside the house or be loaded into the cloud for certain services.

31 percent of those surveyed have never even thought about a connected home before. This is quite surprising, especially in view of the many different areas in which a smart home can be quite useful for its inhabitants. But at least around

one in ten people in Germany and Austria have already allowed themselves to be convinced, and thus already live in a connected home or at least plan to do so, more than in all other countries that participated in the survey.

The Internet is the number one source of information

Two out of three of the Twitter users surveyed indicated that they would visit the manufacturers' and dealers' websites before purchasing smart home applications. 42 percent rely on blogs and forums. The Internet is thus clearly the most important source of information. Shops and brick-and-mortar retailers only come in third place at 35 percent. The stationary trade plays a subordinate role in the UK and the US, in particular. Only half as many respondents seek information here as in the other countries. It is also worth mentioning that the very youngest among those surveyed check more offline and would go to a store.

About the study:

This survey of Twitter users was conducted between July 26 and August 3, 2016. 6 265 respondents from Austria, Germany, Spain, France, the UK and the US participated in it; more than 1 000 Twitter users per country and close to 500 from Austria.

[Overview Survey Results](#)

Additional information is available online at:

[Smart Home comforts!](#)

www.bosch-smarthome.com

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“Connected Car Effect 2025”

Bosch study shows: more safety, more efficiency, more free time with connected mobility

December 2016

PI 9512 BBM Ks

- ▶ Model calculations for the year 2025 show the benefits of connected and assisted driving for the US, China and Germany
- ▶ 260,000 accidents avoided, nearly 400,000 tons of CO₂ emissions saved, considerable time gains
- ▶ EUR 4.43 billion lower material and damage costs
- ▶ 350,000 fewer traffic accident injuries

After a long drive on the highway comes a moment of sudden fear: a traffic jam behind the next curve. Once you've reached your destination later on, there's no parking anywhere in sight. These days, this is everyday life behind the wheel. In fewer than ten years though, there will be completely new possibilities: highly automated driving will ensure relaxed highway travel, cars driving ahead will send advanced warning of slowing traffic, and your own vehicle will ease off the gas before a dangerous situation can arise. At the end of a journey, navigational devices will guide the driver directly to a free parking area or the car will even find its way through the parking garage completely independently.

With the integration of cars into the Internet, this vision is not science fiction but becoming reality. The study “Connected Car Effect 2025” by Bosch and the consulting firm Prognos investigated more closely what this trend will mean specifically for the US, Germany and the major cities of China. The result: safety systems and cloud-based functions can prevent around 260,000 injury accidents, save 400,000 tons of CO₂ emissions and offer drivers many hours of more time for other activities. “Connected mobility will mean fewer accidents, less fuel consumption, less stress,” says Dr. Dirk Hoheisel, member of the Bosch board of management, summarizing the results of the model calculations.

Known assistance and safety systems will become data sources

“The hidden heroes of the connected revolution are assistance and comfort systems, which we are often already familiar with,” says Hoheisel. According to the model calculations, the Electronic Stability Program (ESP), for example, will be available in up to 90% of all vehicles in the three countries covered by the study by 2025, with sensor-based automatic emergency braking and lane assists in up to 40 percent of the car fleet. Systems for more comfort and connectivity will also be found in the majority of cars: in 2025, smartphones will be integrated into approximately every other vehicle’s infotainment system.

The increasing number of such systems and their increasing connection to the Internet make them far more than the sum of their parts – for everyone involved. ESP sensors will report upcoming sections of icy road, cameras will collect data on speed restrictions and fog, functions such as Internet-based parking solutions and wrong-way driver warnings in virtually real-time will be in widespread use.

Individual findings from the study “Connected Car Effect 2025”

“Our study shows that the effects of connectivity will have a perceptible impact on every driver in 2025,” says Hoheisel. For the study, Bosch and Prognos have produced calculations for the US, China and Germany. Here is a selection of the individual findings:

- Over 260,000 accidents involving personal injuries (US: 210,000, China: 20,000, Germany: 30,000) will be avoided annually – as many accidents as occur within two years in Germany’s capital city of Berlin.
- 350,000 fewer people injured by traffic accidents – the same as 12 years without traffic injuries in Los Angeles. In the US alone, there will be 290,000 fewer (China: 25,000, Germany: 37,000).
- About 11,000 people could be saved through connected assistance systems, 4,000 of whom in the US (China: 7,000, Germany: 300).
- Up to EUR 4.43 billion in material and damage costs will be saved by connected assistance systems. This is nearly double the sum spent by the Chinese government in 2016 to improve air quality in Beijing. These sums mean considerable savings for insurance companies, keeping a little more money in the purse or wallet of every individual vehicle owner. Of the EUR 3.6 billion attributable to US’s savings (China: EUR 380 million, Germany EUR 450 million), smartphone integration alone will contribute over EUR 100 million.
- Nearly 400,000 tons of CO₂ will be spared thanks to connected mobility functions – as much as the Black Forest national park in Germany can process in three years. Concepts such as community-based parking and

active parking lot management will reduce parking traffic by up to 480 million kilometers, while highly automated driving saves additional fuel.

- Approx. 70 million driving hours will be shed by connected parking functions in the US, China and Germany. That is as many hours as 40,000 employees work in a year.
- 31 hours of free time on the highway: US citizens spend 43 hours per year on interstates (China: 26 hours on expressways, Germany: 39.5 hours on highways). Highly automated driving and simultaneous Internet connection will make free around 80 percent of time behind the wheel to be used for something other than driving: reading, emails, video conferencing, films, for example. Frequent drivers who reach 40,000 kilometers of driving a year could benefit from 95 extra hours of productivity during their journeys.

Bosch is the driver of connected mobility

There is hardly another company with as much drive toward connected mobility as Bosch. The technology and service company is developing the necessary connectivity technologies, sensors, and cloud solutions. Its portfolio also extends to a variety of different services through intuitive display and operating concepts.

Investigative methodology

Bosch and Prognos assessed a total of eleven technologies for private passenger transport, particularly their dispersion and impacts by 2025 in the US, Germany, and metropolitan areas in China. “In model calculations, we simulated the speed at which the new technologies would be adopted into the vehicle fleet,” explains Prognos mobility expert Stephan Kritzinger. The model is based on international statistics on vehicle inventories, accident data and current research, as well as estimates by Bosch and Prognos.

Since 1959, Prognos has been advising decision-makers across Europe from politics, business and society on questions about the future. Grounded in neutral analyses and well-founded forecasts, experts in Basel, Berlin, Bremen, Brussels, Düsseldorf, Freiburg, Munich and Stuttgart develop practical decision-making grounds and future strategies for companies, contracting authorities and international organizations.

More information on „Connected Car Effect 2025“

- ▶ [YouTube-Video “Connected Car Effect 2025”](#)

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Mobility Solutions is the largest Bosch Group business sector. In 2015, its sales came to 41.7 billion euros, or 59 percent of total group sales. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector combines the group's expertise in three mobility domains – automation, electrification, and connectivity – and offers its customers integrated mobility solutions. Its main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

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Additional information is available online at www.bosch.com, www.bosch-press.com, twitter.com/BoschPresse



Strong in the U.S.: Bosch increases capital expenditure – 400 million euros for the current year Innovation driver U.S. offers a promising market

November 14, 2016
9476 Bö/KB

- ▶ Headcount also growing: 18,800 Bosch associates in the U.S. by 2017
- ▶ Plans to expand production capacity for automotive components in Charleston, SC
- ▶ Major potential for connectivity business, whether smart cities or Industry 4.0

Palo Alto, U.S. / Stuttgart, Germany – The Bosch Group is expanding in the U.S.: the supplier of technology and services plans to invest nearly 400 million euros (around 450 million dollars) in the U.S. over the course of the current year, about one-fifth more than in 2015. Bosch's headcount is also expected to rise, from 17,800 associates at present to more than 18,800 by early 2017. Speaking at a press conference in Palo Alto, the Bosch board of management member whose responsibilities include the Americas, Dr. Werner Struth, said: "This underscores our confidence in the United States as an established market and a strong driver of innovation."

The company also announced its plans to continuously expand its oldest plant in the U.S.: the manufacturing facility in Charleston, SC, and the occupational training and professional development activities there. The more than 1,700 associates currently employed at the plant manufacture original equipment for vehicles, including components for the ABS and ESP® automotive safety systems.

Bosch also recently intensified its development activities in the U.S. For instance, it expanded its engineering center in Pittsburgh, PA, and consolidated its local activities at a new, central location. The associates there will develop internet and security technologies for the internet of things (IoT). Bosch also expanded its technical center in Plymouth, MI, where developers are working on key technologies for the mobility of the future, such as automotive electronics and driver assistance and safety systems. Over the past five years (2011 to 2015),

the company has invested a total of 1.5 billion dollars (just under 1.2 billion euros) in the United States.

Bosch is pursuing its expansion strategy in the U.S. with acquisitions as well: “The U.S. market is a highly promising one. Moreover, U.S. companies are among the most innovative in the world. For this reason, we will continue our high level of acquisition activity in the United States.” Just recently, Bosch purchased Skyline Automation, a leading specialist in building automation located in Clifton, NJ, in a move that increased the company’s market presence. Skyline Automation specializes in building automation and systems integration, which includes the installation and networking of various technical systems in buildings. This follows Bosch’s 2015 acquisition of Climatec, a leading U.S. provider of energy-efficiency, building-automation, and security solutions.

Major potential for business in connectivity

With a population of more than 320 million, the world’s biggest economy by gross domestic product offers enormous potential for Bosch, especially in the IoT sector. The company expects this market to be worth some 250 billion dollars (or about 280 billion euros) by 2020, and 35 percent of this to be generated in America. According to an OECD study, the U.S. is one of the top five countries as ranked by the number of connected devices – making it a key market for IoT business. “There are so many different opportunities for Bosch to generate genuine value with connected solutions that make everyday life easier and enhance quality of life,” Struth said. The goal, he continued, is to offer solutions in many areas – such as smart cities, homes, energy, industry, and mobility – that offer more safety, convenience, and efficiency.

On the road to the smart city

The trend towards smart cities opens up new possibilities for connected solutions. The energy efficiency potential in cities is enormous: cities consume 75 percent of the energy produced globally, with buildings alone accounting for 40 percent. Market experts estimate that by 2019, cities could cut approximately 11 billion dollars or about 12 billion euros) in energy costs.

One such project can be found in San Francisco, where new, attractive, waterfront communities are being built on the site of a Navy shipyard and the Candlestick Park stadium: [The San Francisco Shipyard](#) and Candlestick. With plans for 12,100 homes, over 350 acres of parks and open space, an urban outlet shopping mall, up to five million square feet of commercial space comprised of research/development, makers space and office space, along with nearly 300 artists’ studios. This is the biggest urban redevelopment project in San Francisco since the 1906 earthquake. FivePoint and Bosch technologies are

working together to bring connectivity to The SF Shipyard, offering a taste of life in a “smart city” with solutions for smarter homes and communities and widespread mobility and connectivity. Bosch is working as a technology partner to FivePoint, on smart solutions for these modern districts, including a Smart Community app, which will provide residents with localized, real-time information on public transport as well as access to intelligent surveillance solutions. There are also plans for future-oriented solutions for efficient traffic management and smart buildings, which will promote a high quality of life.

Connected manufacturing improves efficiency

Bosch is driving connectivity forward in manufacturing as well, and is also implementing Industry 4.0 solutions in its own plants in the United States. In its 23 facilities across the country, Bosch makes products for its four business sectors. Seven of these plants manufacture components for industrial production. The associates in the Anderson, SC, plant were the first at Bosch to employ smartwatches for data communication and the description of conditions in manufacturing operations. Connected solutions are also applied in the Charleston plant in the same state. With respect to Industry 4.0, the company favors open standards, since they make it easier to connect machines and software made by various manufacturers between companies and across national borders. This is why Bosch welcomes the recently adopted collaborative agreement between Germany’s Industrie 4.0 platform and the U.S.-based international Industrial Internet Consortium. The company is represented in both bodies and is thus playing a role in promoting the cross-border implementation of standards.

U.S. as a driver of innovation for Bosch

Bosch employs more than 2,300 researchers and developers in the United States. In 1999, Bosch’s corporate research and advance engineering opened its first branch outside Germany, the Research and Technology Center (RTC) in Palo Alto. Today, some 100 highly qualified associates research future trends there. These include web technologies, automated driving systems, and robotics. In its research and development activities, Bosch relies on the expertise of its associates and its long-term partnerships with renowned U.S. universities, such as Carnegie Mellon or Stanford.

Start-up culture in California

The Bosch Research and Technology Center in Palo Alto also benefits from its proximity to many high-tech companies. Through its internal start-up platform and its subsidiary Robert Bosch Venture Capital (RBVC), the Bosch Group manages to keep its finger on the pulse of Silicon Valley's vibrant start-up culture. Some 55 percent of the world's venture capital is invested in the United States. "Silicon Valley is a mecca of the American start-up scene, so it's no wonder that start-ups spring up like mushrooms there," Struth says. "Bosch believes it is important to regularly share information and make well-judged investments, since this allows it to respond early on to new trends and in this way acquire access to disruptive industry developments." One example is the start-up Aimotive, which receives funding from RBVC. Like Bosch, it is working on further developing automated driving. Overall, RBVC holds a stake in 30 start-ups around the world. Eight of them are located in the U.S., and four of those in Silicon Valley.

Bosch has also achieved success with its own start-ups, such as Bosch eBike Systems, whose portfolio includes drive systems and on-board computers for pedelecs. Founded in 2009 as a start-up within the Bosch Group, it is now a global market leader. In March 2014, the company penetrated the U.S. and Canadian markets by establishing Bosch eBike Systems Americas in Irvine, California. Key technologies for e-bikes include the lithium-ion battery, which Bosch is working to refine in Palo Alto and elsewhere, as well as motors and their control units.

Bosch's success story in the U.S.

Bosch has a long history of success in the United States. As a young man, Robert Bosch voyaged to the New World back in the 1880s, and found a job at Edison Machine Works in New York City. One decisive milestone in his company's journey from start-up to global corporation was its entry into the U.S. market in 1906. After all, at the start of the 20th century, the American automotive market was 40 times larger than Germany's. Today Bosch is ideally positioned in the U.S. to tap the potential of this highly promising market. Its business saw excellent growth there over the past year (2015), with sales rising to 12.2 billion dollars (or 11 billion euros). And despite some economic challenges, the Bosch Group expects its business to have developed steadily in the region in the current year.

Experience Bosch's connected solutions in Las Vegas, Nevada, U.S.

At the CES 2017, Bosch will show how the Internet of Things is getting personal – turning things into partners. Connected technology enables personal assistance across all domains of people's lives: improving mobility, shaping the life in the cities of the future, making homes smarter, healthcare more efficient

and working holistic. Exhibiting at CES for the fifth year, Bosch will introduce an extended portfolio of solutions that are “simply.connected.”

BOSCH PRESS CONFERENCE: Wednesday, January 4, 2017, 9:00 – 9:45

AM (local time) with **Werner Struth**, member of the Bosch board of management at Mandalay Bay Hotel, South Convention Center, Ball Rooms B, C & D

FOLLOW Bosch’s CES 2017 highlights on Twitter: [#BoschCES](#)

BOSCH BOOTH: Thursday until Sunday, January 5-8, 2017: Central Hall, #14128

BOSCH EXPERTS AT PANELS:

- Thursday, January 5, 2017; 11:30 AM – 12:30 PM (local time): [Conference track “MEMS & Sensors: Personalizing Consumer Technology”, Session “Where are Consumer Electronics Taking the Sensors Industry?” with Dr. Stefan Finkbeiner, CEO and General Manager, Bosch Sensortec; Venetian, Level 4, Marcelllo 4501](#)
- Friday, January 6, 3:30 – 4:30 PM (local time): [Conference track “Vehicle Technology”; Session “Redefining the Automotive Infotainment Experience” with Mr. Torsten Mlasko, Las Vegas Convention Center N258](#)

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The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as “Workshop for Precision Mechanics and Electrical Engineering.” The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

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2017: Bosch is showing what can and will be done with the Internet of Things

The “Connected World” content hub makes users of connected products and services a central focus

January 2017

PI 9528 RB FF/BT

- ▶ Product platform: Bosch shows product highlights from all spheres of the Internet of Things
- ▶ Platform for visionaries: in the future, experts will be able to share their views in the connected world
- ▶ Content marketing: From a story to an IoT product in just a few clicks
- ▶ Link to the website: <https://iot.bosch.com/>

Closing the front door and leaving the house is all homeowners need to do – the smart home does the rest. It turns down the heat to reduce costs and turns on the alarm system on its own. This example shows that billions of things are already communicating with each other, sharing information, and acting independently. And that’s not all: devices and technical hardware are also connected to one another via the cloud. The Internet of Things (IoT for short) is set to become a megatrend. For the Bosch Group, connectivity is a central part of corporate strategy and thus also a focus of corporate communications.

Just in time for the Consumer Electronics Show (CES) in Las Vegas, the leading trade show for connectivity, Bosch has launched a corporate content hub. “Connected World” pools all of the company’s IoT-related content at a single digital location. “With the ‘Connected World’ platform, Bosch has created an attractive content hub on all things of the IoT. We provide explanations, entertain, and offer access to the entire Bosch product catalog,” says Dr. Christoph Zemelka, head of corporate communications at Bosch.

Discussing the benefits and challenges of new technologies

The new Internet platform is geared to opinion leaders, media professionals, and influencers as well as interested customers. “We at Bosch not only want to pave the way to the connected world with technology, we also want to provide support through communication,” says Zemelka. “The benefit of IoT solutions must be emphasized even more. We must have an open discussion about the challenges

of new technologies, while at the time demonstrating their potential.” In the coming months, “Connected World” will thus become a central online point of contact for topics related to the IoT. The platform will continue to grow, and it will eventually present a comprehensive overview of the Bosch portfolio of products and services. At the same time, external experts and thinkers will be invited to share their views as thought leaders on the “Connected World” platform. Moreover, the page will collate a number of discussions and posts from social networks such as Facebook and Twitter.

Tightening the links between communication and the IoT business

In designing the “Connected World” platform, special attention was paid to the content marketing strategy. A storytelling approach serves to attract users to the Bosch IoT universe while at the same time showcasing the company’s broad portfolio of products and services. “For the first time, we are offering a central overview of the Bosch IoT business. In so doing, we are highlighting the company’s connectivity expertise across spheres – from building technology and mobility to industry and connected energy systems,” says Florian Flaig, co-project manager for public relations and media communication.

Content marketing will also pave a direct path to the product. Customers and online influencers will be able to contact Bosch directly. “With the new platform, Bosch is making the links between communication and the IoT business tighter than ever,” says Katharina Sorg, who is in charge of the project in the “Digital Communication” department. To this end, the company is linking its entire product catalog to the “Connected World” content hub. Visitors and potential customers can thus access everything from the IoT story to available products and services in just a few clicks. The “Connected World” concept tightens the links between communication and conversion as much as possible, and shows how the digital transformation of communications can support corporate success.

Press photo: #940075, 455948

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