How Your Customers Benefit from IoT
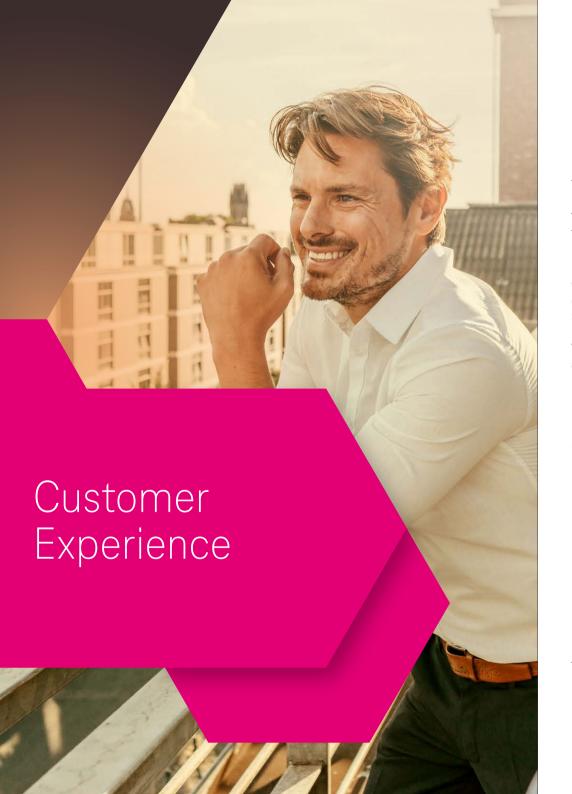
More Success with Satisfied Customers

T···   LIFE IS FOR SHARING.

Deutsche Telekom IoT
connect. digitize. get ahead.

How Companies Create Added IoT Value for Customers

Business customers nowadays expect companies to deliver customer experiences of the kind they are accustomed to as private users. The Industrial Consumerism paradigm transfers features of the user experience from the B2C world into B2B transactions. Industrial customers are increasingly behaving like private consumers. A mechanical engineering company, for instance, expects a supplier of drive motors to provide a similar buying experience to those offered by a smartphone manufacturer or Amazon. What it wants is an understandable product description, a simple purchasing procedure and customer service that is available round the clock – and it doesn't want to have to deal with technical details.

After buying the product, it expects the product to integrate smoothly into its systems. Modeled on the consumer goods industry, the provision of, say, online software updates for a product enhances both its value for the buyer and the buyer's loyalty to the brand and the provider. The availability of digitally supported products and services is fast becoming a decisive factor in successful selling.

Customer experience comes into focus[1]

84 % of companies are convinced that an improved sales and service customer experience will provide them with a competitive advantage.

63 % are finding that their customers are increasingly well-informed and demanding and expect from them increasingly specific industry or practical know-how.

84 % are convinced that business customers expect and appreciate not only quality products and services at a competitive price but also a better customer experience.

Customer Experience

Focus on Customer Satisfaction

Marketing, sales and service must adapt to this buyer behavior, and customer satisfaction is increasingly becoming a focal point of the business model at the development stage and, later, in production. This is where the Internet of Things (IoT) comes into play. It supplies data from sensors, machines and vehicles and enables companies to find out more about their products and the uses to which they are put. Customers too receive valuable information, such as when the shipment will arrive, where the cold chain was interrupted, at which rev count the motor runs most efficiently and which setting saves energy. Answers are provided by the IoT.

Examples from different industries demonstrate how companies successfully enhance the customer experience and secure long-term customer loyalty.

Customer Experience – What Do Business Customers Expect Nowadays?

- ⊕ Swift and constant customer service availability
- ⊕ Mobile, interactive access to products and data
- ⊕ Ease of use for products and services
- ⊕ More transparency about usage data and delivery times
- ⊕ Flexible provision of products-as-a-service
- ⊕ All-round service from a single supplier

Customer Experience – How Customers Benefit from the Customer Experience

- ⊕ More satisfied customers
- ⊕ Long-term customer retention
- ⊕ Higher recommendation rate
- ⊕ Greater readiness to pay
- ⊕ Higher sales
- ⊕ Additional orders

Get more Insights through IoT

Worldwide IoT Connections in 2020[2]:

- ⊕ Transportation 80 million
- ⊕ Manufacturing 490 million
- ⊕ Utilities 1.37 billion
- ⊕ Automotive 470 million
- ⊕ Building Automation 440 million
- ⊕ Retail 440 million

Transport & Logistics

Transparency is essential today in transporting goods, in logistics and intralogistics. When is the truck with the finished components due to arrive? What is the temperature in the refrigerated container? Where is the pallet with the wheel bearings? IoT tracker and sensor modules provide a detailed insight into the supply chain and the warehouse. What that means for the customer experience is that the customer can be supplied faster and that they can precisely identify when the goods ordered will arrive and when and where the cold chain was interrupted or a pallet was stolen.

Constant Focus on Condition of Goods

Condition monitoring is more efficient than ever with the IoT. Charge carriers such as standard or mesh box pallets can be fitted out with sensor modules easily and inexpensively. Vibration sensors notify the sender or recipient instantly if a box has fallen off the pallet or a box has fallen over. Digital waybills keep a record of every incident on-screen so that the receiving department is informed the moment the delivery arrives and, say, a damaged component does not find its way into the production chain. Trackers with comprehensive sensor technology also ensure safety. Attached to the refrigerated container or to the shipment, they document the cold chain in transit and thereby ensure compliance with standards and statutory requirements. GPS positioning, geofencing or triangulation across the mobile network enable precise location of vehicle and goods. Suppliers can optimize routes and tell customers accurate delivery times. Thefts can be tracked.

Transparency at every Stage of Delivery

Plug-and-play digitized

Krones: Pushbutton Collection Service

Krones, a manufacturer of filling and packaging plants for the food and drink industry, offers customers perceptible added value with a relatively simple IoT solution. An IoT service button speeds up intralogistics at Krones and the delivery of spare parts to customers. When an employee has finished work on a spare part, he no longer needs to phone or message his colleagues in the logistics department. He simply presses the digital order button and his colleagues in the logistics department receive an automated message requesting collection of the part. This automation boosts productivity in the supply chain and reduces waiting times to a minimum, showing that digitizing processes does not by definition require heavy investment. There is much that can be retrofitted inexpensively, such as by means of a simple order button.

> " What sets apart these digital solutions that quickly establish themselves? Simplicity.

Holger Blumberg, CIO Krones AG

ᶜ KRONES

Machine
as a Service

Manufacturing

IoT ensures transparency in manufacturing too. Sensors attached to plant and machinery record measurements such as rev count, temperature or pressure and sound the alarm in cases of discrepancy. That provides machinery manufacturers with an entirely new business model opportunity. Instead of just selling the machine, they can offer their customers added value in the form of predictive maintenance. An as-a-service model of this kind generates continuous revenue and strengthens customer loyalty. The user benefits from lower costs if machines are only serviced when necessary. Predictive maintenance can shorten or entirely prevent outages of plant or machinery. And a machine leased or provided on an as-a-service basis means the customer no longer needs to invest heavily and makes costs easier to plan.

Ziehl-Abegg: Connected Ventilators

Another example of how the Internet of Things can fulfill customers' wishes is provided by the motor and ventilator manufacturer Ziehl-Abegg. Customers of the Baden-Württemberg family firm wanted smart connected plant that they can monitor by PC and smartphone. Ziehl-Abegg now offers its customers a predictive maintenance option on an IoT platform. That not only saves them service costs but can also reduce downtime. The system also provides operating data with the aid of which plant and processes can be optimized.

> " Data availability in real time and complex data analyses are essential for customers to further optimize the use of our products.
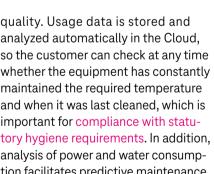
Peter Fenkl, Executive Board Chairman, Ziehl-Abegg

ZIEHL-ABEGG

MKN: Connected Kitchen Equipment

Connected equipment is increasingly used in catering too. In Lower Saxony Maschinenfabrik Kurt Neubauer (MKN) manufactures kitchen equipment such as the Combi Steamer for professional chefs in canteens, hotels and system catering. Equipment is connected with an IoT platform in the Cloud that offers MKN customers many added benefits: cookery books, recipes and cooking programs can be downloaded to the Combi Steamer to ensure that roasts, broccoli and bread rolls can be produced with consistently good quality. Usage data is stored and analyzed automatically in the Cloud, so the customer can check at any time whether the equipment has constantly maintained the required temperature and when it was last cleaned, which is important for compliance with statutory hygiene requirements. In addition, analysis of power and water consumption facilitates predictive maintenance.

Service from the Cloud

Sun, Wind and IoT

Utilities

The energy generation and supply industry is currently subject to four main trends: digitization, decentralization, decarbonization and democratization, the 4 Ds. And the more the market changes, the more important the Internet of Things is in the energy sector. The phase-out of fossil fuel and nuclear power is accompanied by an increase in the use of regenerative energy sources such as solar, water and wind power, which according to the industry association BDEW accounted for half of German energy consumption in the first half of 2020. Diversification is on the increase too. Consumers become producers when they feed solar power from their roofs to the local power grid. A fixed number of coal-fired and nuclear power stations feed a regular, calculable amount of electricity into the grid but the output of tens of thousands of wind turbines and solar panels depends on wind and weather. That is why the power grid of the future needs smart management in which the IoT has a key role to play.

Smart Utility

Real-time Data for Smart Grids

Smart grids rely on real-time production and consumption data from power stations, the distribution network and its substations, wind turbines, solar panels and electricity meters. The Internet of Things uses sensor technology and connectivity to record and relay this data via the real-time 5G network. IoT platforms with data analytics applications connect and process this heterogeneous data from the grid, from information technology and operation technology, from customer systems and billing. Changes are also under way at the receiving end, such as the increasing electrification of transport. That is why, according to a PwC study, 92 percent of energy industry actors polled are convinced that the IoT will be important or very important for decentralized energy systems.

Smart Thermostats

The energy landscape, consisting of supply and demand or production and consumption, is changing into an increasingly fragmented energy ecosystem. And utilities increasingly see the Internet of Things less from a technology-centered viewpoint and focus more on future business models. That is made possible by the IoT ecosystem, which opens up data silos and brings transparency into the entire supply and distribution process, including the consumer. Smart thermostats, for example, can be controlled by an app or even, as part of a smart home system, by voice control. They identify electricity guzzlers, memorize the user's heating habits and help to save energy.

Smart Meters

In the energy sector, the Internet of Things facilitates further sustainable solutions. More and more utilities are relying on smart meters. Measuring electricity, water or gas consumption, smart meters use the IoT radio standard NarrowBand IoT (NB-IoT) to send consumption data to the Cloud. The advantage is that NB-IoT penetrates even thick cellar walls, enabling meters to be read remotely. Regular on-site readings are no longer required, saving time, personnel and travel costs. The utility can pass this saving on to its customers, who no longer need to stay at home all day waiting for the meter reader. Suppliers can also use the data to give end users an insight into their daily consumption, thereby creating energy-saving potential. Online access to consumption data also makes more precise billing possible.

Automotive

The connected car as a part of the IoT paves the way for the Internet of Vehicles, where the car communicates with passengers, pedestrians, other vehicles, infrastructure and the Cloud. Already, before the age of autonomous driving, more and more vehicles on the road are assisted by video, radar and sensor technology. Cars receive infotainment system updates by mobile data transmission and have built-in SIM card WiFi access for driver and passengers. Automakers are integrating the IoT to their vehicles and offering their customers the digital experience Internet to which they are accustomed in their living rooms. The connected car platform of the future will integrate the customer's app world to provide a seamless user experience.

Connecting In and Around the Car

The car is growing smarter, autonomously suggesting the next service check – and booking a slot in the authorized workshop. It warns drivers to stop them nodding off for a moment and keeps the vehicle in lane by means of sensor technology. It automatically plays your favorite playlist as soon as you get in, and the Internet of Things is increasingly to be found in the infrastructure. Connected parking spaces report their status to apps and navigation systems, thereby enabling

Smart Parking. Spaces for car sharing or charging stations for electric vehicles can also be integrated into an IoT network. In the future, when autonomous driving is a reality, traffic lights and street lamps, road signs and crash barriers, gas pumps and parking spaces will all be part of the Internet of Things. The driver will become a passenger – and a user of digital services for the automobile.

Tesla: Hardware Filled with Software

Tesla has a reputation for being innovative not only because its cars are electric vehicles. The U.S. automaker has transformed the automobile into hardware controlled by software. Tesla owners, for example, regularly receive software updates over the air for all kinds of systems, from the battery to the suspension. Drivers don't have to head to the workshop for every update or issue resolution and their car is always up to date.
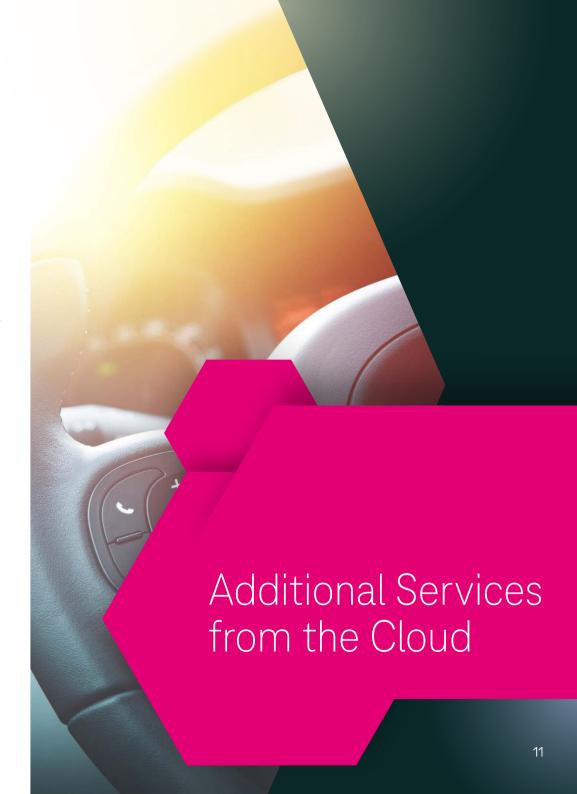
eCall: Connecting to Save Lives

IoT also ensures more safety on the road. Since 2018 the eCall system has been mandatory for all vehicles newly registered in the European Union. eCall recognizes an accident automatically and notifies the emergency services. Sensors and SIM cards are the nucleus of the system. eCall functions independently of the rest of the vehicle. The system recognizes a crash if, for instance, the airbag is activated and acceleration sensors kick in. After an accident eCall calls the Europe-wide emergency number 112.

In an emergency the call center can even communicate with the driver and passengers via the mobile network. If they are unconscious the rescue chain uses the data that eCall transmits. The system records the location and direction of travel, thereby guiding first responders to the scene of the accident anywhere in Europe.

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NGeCall = Next Generation eCall: Future developments in eCalls voice technology will enable video communication and other services via LTE.

Additional Services from the Cloud

Building Management

The task of a building manager is easy to describe but much harder to carry out. People must feel comfortable in the building, be it a school, a hospital or an office block, at all times. They must not notice the technical systems that keep it up and running. The building manager must have the answers to a wide range of questions at the ready. Which rooms are occupied when, and how can occupancy be optimized? When must the heating or central heating system be operational and, above all, when not? When is the best time for the cleaners? And, at present, how do I ensure that there are not too many people in a room and that rooms are ventilated regularly? The IoT answers questions of this kind reliably by means of sensor technology that records air quality, humidity, temperature, room usage or door and window status – and an IoT platform that evaluates the data and makes it available to the building manager and building users on mobile devices and their PCs.

ISS: Transparent Building Insight

The building service provider ISS Facility Services uses an IoT platform as a central control element for all buildings that ISS manages around the world. The platform receives data from over 20,000 sensors that record measurements such as room temperature or carbon dioxide readings. The system analyzes and visualizes this data and initiates counter-measures if limits are exceeded. It regulates heating and air conditioning or uses an app to recommend ventilation. IoT also creates transparency about room utilization. Empty conference rooms don't need to be heated but can be ventilated. Usage data also indicates the best time for sending in the cleaners. ISS customers benefit from energy savings, cost reduction and enhanced room comfort.

IoT that makes you feel Good

Enhance the Retail Experience

Retail

In no industry is the customer's shopping experience as important as in retail. This means, for example, that the merchandise must (also) be available online. Yet the retail sector is lagging behind others in digitization as shown in the findings of the Digitalisierungsindex Mittelstand 2019/2020 benchmark study. Digital transformation is part of the business strategy at only 40 percent of German SMBs. One reason why is that small businesses account for a large proportion of retail enterprises – and the level of digitization is low among SMBs in all industries. Thirty-six percent of retailers shy away from the cost of digitization, 30 percent have IT security misgivings and 29 percent say they simply don't have the time. In day-to-day business with long opening hours and overtime they have little time in which to think about suitable digital solutions.

Digital Order Buttons and Price Tags

Yet the Internet of Things offers many benefits for retail – with simple, upgradable solutions that don't require heavy investment. A digital order button, for example, reports empty shelves in the clothing store, full reverse vending machines in the supermarket, or defective beverage dispensers and refrigerated counters. Digital price tags tell the customer more about the product, such as where it is grown, production conditions or ingredients. They enable pricing to be made flexible in the course of the day by means of discounts and special offers and guide the customer to the right shelf by means of an app. Free in-store WiFi is inclusive, of course. By scanning the QR code on the tag, customers can order missing sizes and colors, have the goods delivered to their home, or pay immediately, thereby avoiding the checkout line. And if the shopping carts are connected, the customer's route round the store can be tracked, enabling products to be placed in a more customer-friendly way.

Would you like to know more?

Would you like to know more about how you can increase your customers' satisfaction with you by means of digital services and the Internet of Things? Contact us without obligation and together we will find a solution that is a perfect match for your business case.

Read in our e-book "**Your IoT Boost für Business Success**" how companies operate more efficiently and more sustainably with the IoT.

List of Sources:

[1] Accenture, "Industrial Consumerism"
[2] Gartner, IoT Endpoint Market by Segment, 2018–2020, Worldwide

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