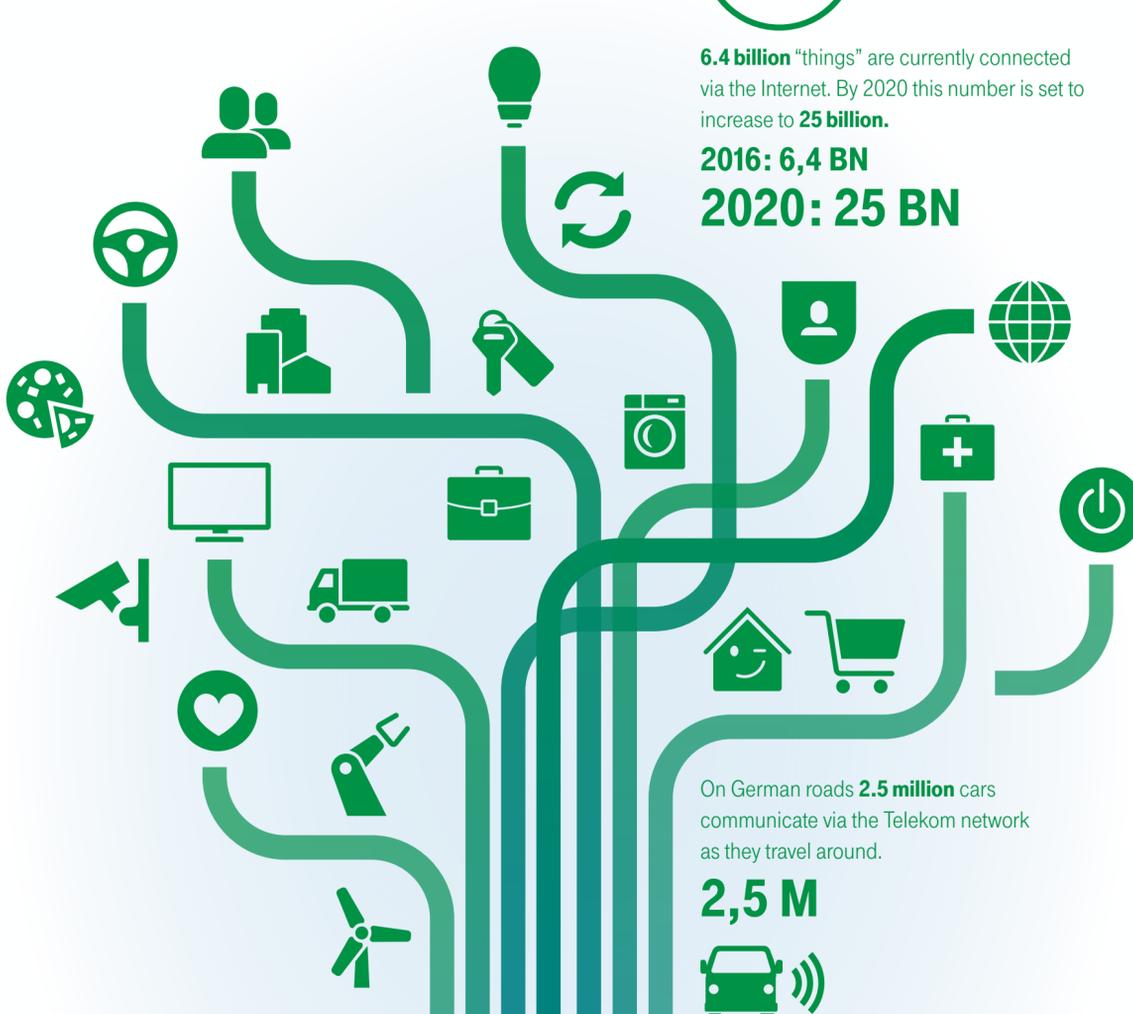# THE EVOLUTION OF THE INTERNET OF THINGS

IoT

6.4 billion "things" are currently connected via the Internet. By 2020 this number is set to increase to 25 billion.

2016: 6,4 BN

2020: 25 BN

On German roads **2.5 million** cars communicate via the Telekom network as they travel around.

2,5 M

EVERYBODY BENEFITS

By 2025 the Internet of Things could lead to a global **economic added value** of up to $11.1 trillion.

+11,1 TRN $

30 percent fewer engineer callouts are expected to result from remote maintenance of connected elevators.

40 percent of inner-city traffic consists of cars looking for somewhere to park. The IoT can help reduce this figure significantly.

−30 %   40 %

DATA VOLUMES ARE RISING RAPIDLY

Data traffic on the IoT is set to rise from **305 million terabytes** now to **1.9 billion terabytes in 2024.**

2016: 305 M TB

2024: 1,9 BN TB

Telekom currently relays more than **1.8 million terabytes** of data a month across its networks. That corresponds to relaying the content of around **14 million iPhones.**

14 M

In **Biere, Germany,** Telekom set up in 2015 a data center covering a **surface area of three soccer fields.** A year later, demand has already risen so fast that the Group is enlarging the facility. By 2018 it is set to cover a surface area of **7.5 soccer fields.**

2015
2018

NO CLOUD, NO INTERNET OF THINGS

The original two data center modules will then be five in number, each with a storage capacity of around **30 petabytes** – enough for **30 billion books.**

2015 2018

30 BN

The data center can receive and process up to **259 terabytes of data traffic per second** (physical). That corresponds to **7.4 billion HD streams running in parallel.**

7,4 BN

DATA NETWORKS NEED EXPANSION AND CONVERSION

For applications that require a high range and low energy consumption **Narrow Band IoT is the best option.** NB-IoT modules can run for up to ten years on two AA batteries.

With a data transmission rate of more than 10 gigabits per second or a short 1-millisecond latency, **5G will become the enabler of data-intensive and time-critical applications** such as connected driving. Blinking, for comparison, takes 100 milliseconds.

With over 400,000 kilometers, Telekom operates **the largest fiber-optic network in Germany.** For comparison: the entire German autobahn network is 13,000 kilometers long.