REPLY

IOT TREND RESEARCH

THE EVOLUTION OF CONSUMER IOT

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With **SONAR Trend Platform** Reply is able to quantify and rank trends based on comparable trend metrics and ensure sophisticated measurement.
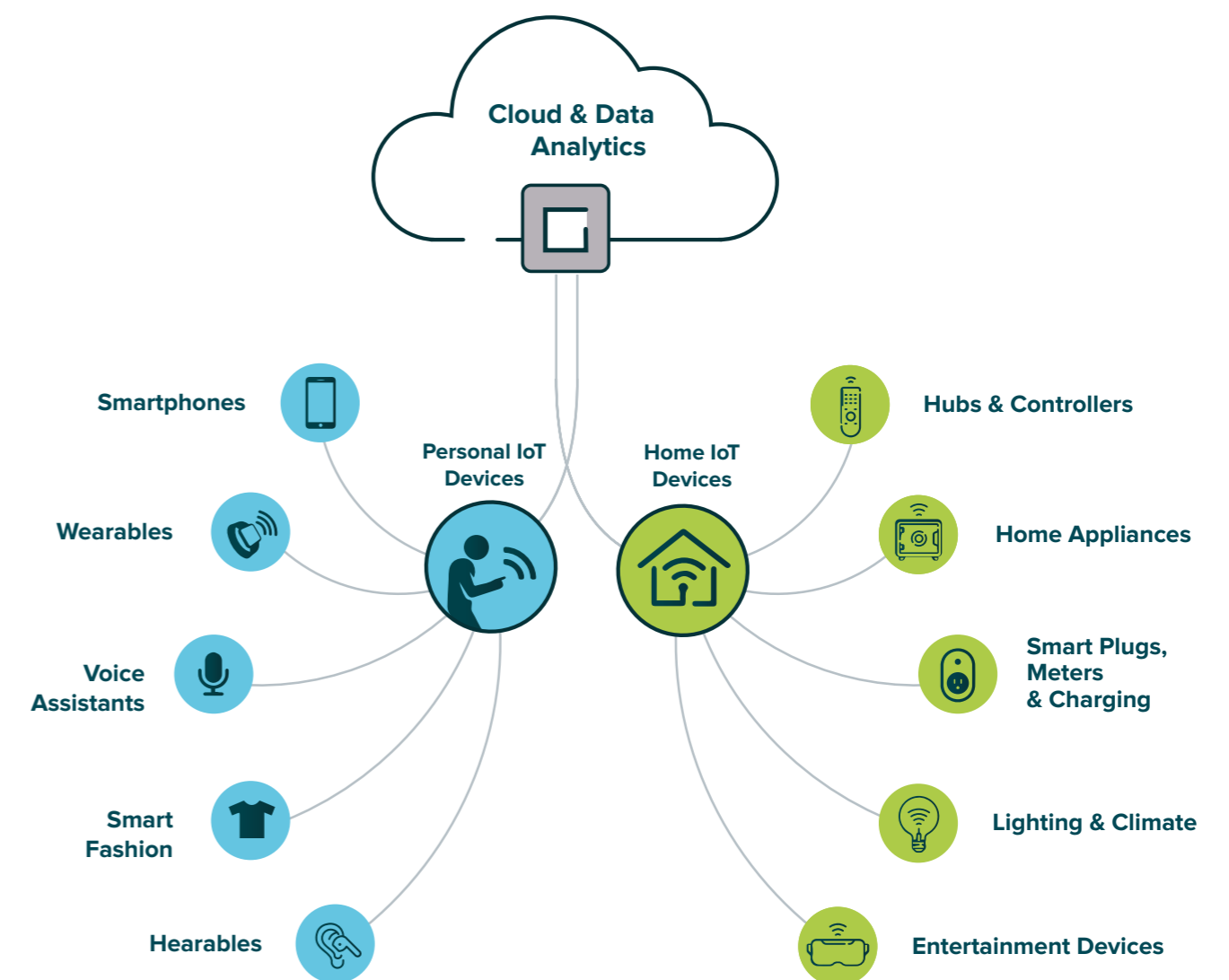
SONAR

SONAR is an innovative, **DATA-AS-A-SERVICE TOOL** for quantified foresight. It recognises, compares and analyses existing trends, and identifies new developments in real-time.

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WHAT IS CONSUMER IoT?

The Consumer IoT refers to the billions of physical personal devices, such as smartphones, wearables, fashion items and the growing number of smart home appliances, that are now connected to the internet, collecting and sharing data.

Cloud & Data Analytics

Smartphones
Personal IoT Devices
Home IoT Devices
Hubs & Controllers
Wearables
Home Appliances
Voice Assistants
Smart Plugs, Meters & Charging
Smart Fashion
Lighting & Climate
Hearables
Entertainment Devices

WHAT DRIVES THE IoT MARKET

On the one hand, the IoT market is driven primarily by technological innovations. On the other hand, changes in the lifestyle of today's society are also driving developments in the IoT sector.
There are **seven main drivers.**

CHEAPER & BETTER HARDWARE

Digitalisation and the smartphone revolution have led to evermore compact, low-cost processing power, in addition to cheaper but more sophisticated sensors and cameras as well as ubiquitous wireless connectivity.

ADVANCES IN ARTIFICIAL INTELLIGENCE

Advances in machine and deep learning are propelling the development of intelligent self-learning systems. The expected gains due to automation and improved data-driven insights are immense and will further drive progress in this area as well as within IoT.

BETTER NETWORKS & CONNECTIVITY

Bluetooth, 5G, LiFi, NB-IoT or LoRa are just a range of new evermore present network technologies promising better and more network coverage, in addition to longer range and more energy efficient connectivity.

THE RISE OF BIG DATA

Decreasing costs for memory and storage solutions are enabling the collection of big data, as well as subsequent data analytics services.

DIGITAL & MOBILE LIFESTYLE

Around 53% of the global population is connected to the internet, leveraging digital technologies many times daily to manage their lives. Today, 600 million people use voice-activated assistants once a week. As IoT devices are becoming cheaper, consumers are set to further experiment with and adopt all sorts for smart things.

SUSTAINABLE LIVING

Increasing awareness for climate change and resource depletion call for more sustainable and efficient energy generation and management. This in turn leads to a need for advanced IoT solutions that save energy, electricity and costs.
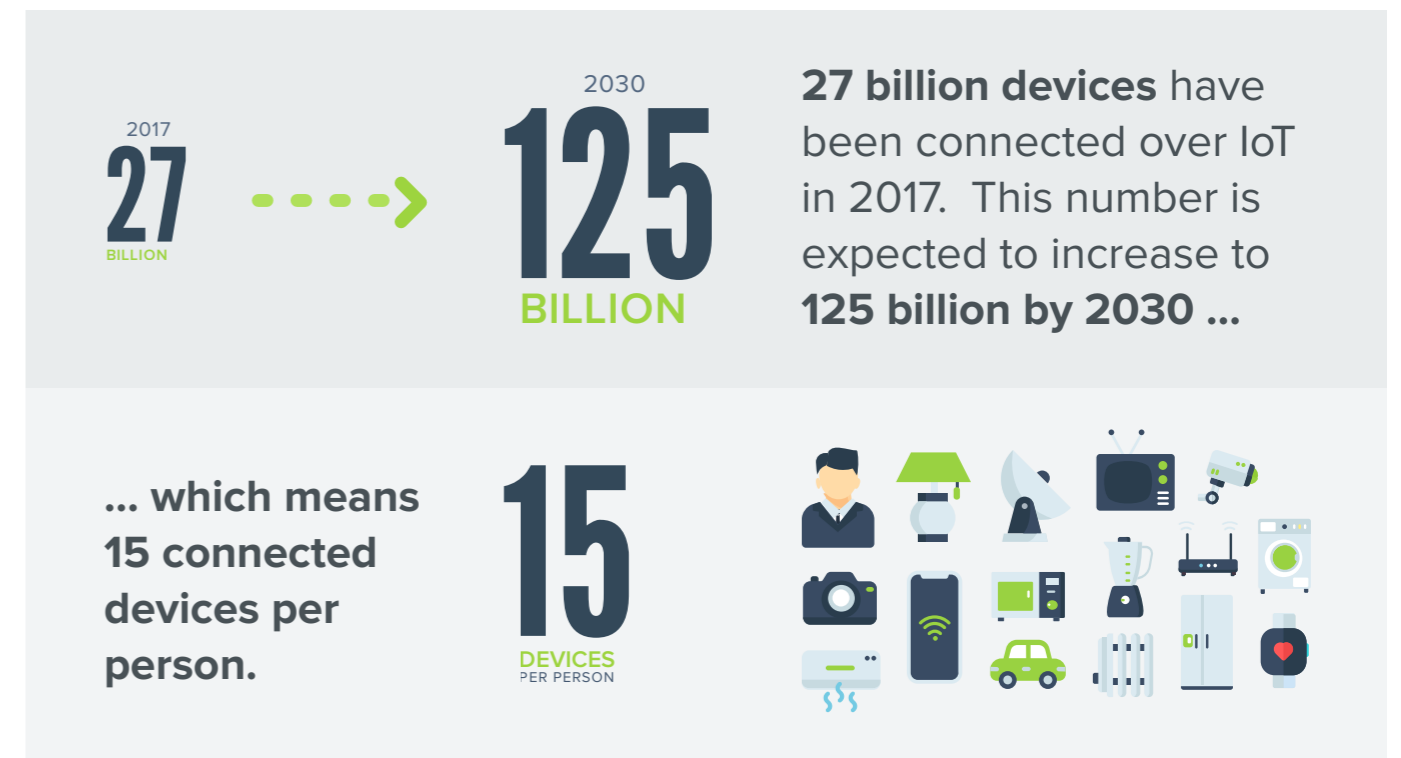
CONVENIENCE & PERSONALISATION

In today's fast-paced world, people are looking for products and services that reduce friction, save time and ultimately lead to convenience and comfort gains. Being accustomed to personalised social media feeds, movie recommendations and product marketing, consumers are also expecting unique experiences and tailored products when it comes to physical products or living environments.

TOWARDS A TRULY CONNECTED WORLD

The rise of connected devices in the future, will result in a demand for faster, cheaper and more secure hardware and software.

More integrated solutions will be provided with the help of Artificial Intelligence, Cloud, Big Data and Blockchain.

2017
27
BILLION

2030
125
BILLION

27 billion devices have been connected over IoT in 2017. This number is expected to increase to **125 billion by 2030 ...**

... which means 15 connected devices per person.

15
DEVICES
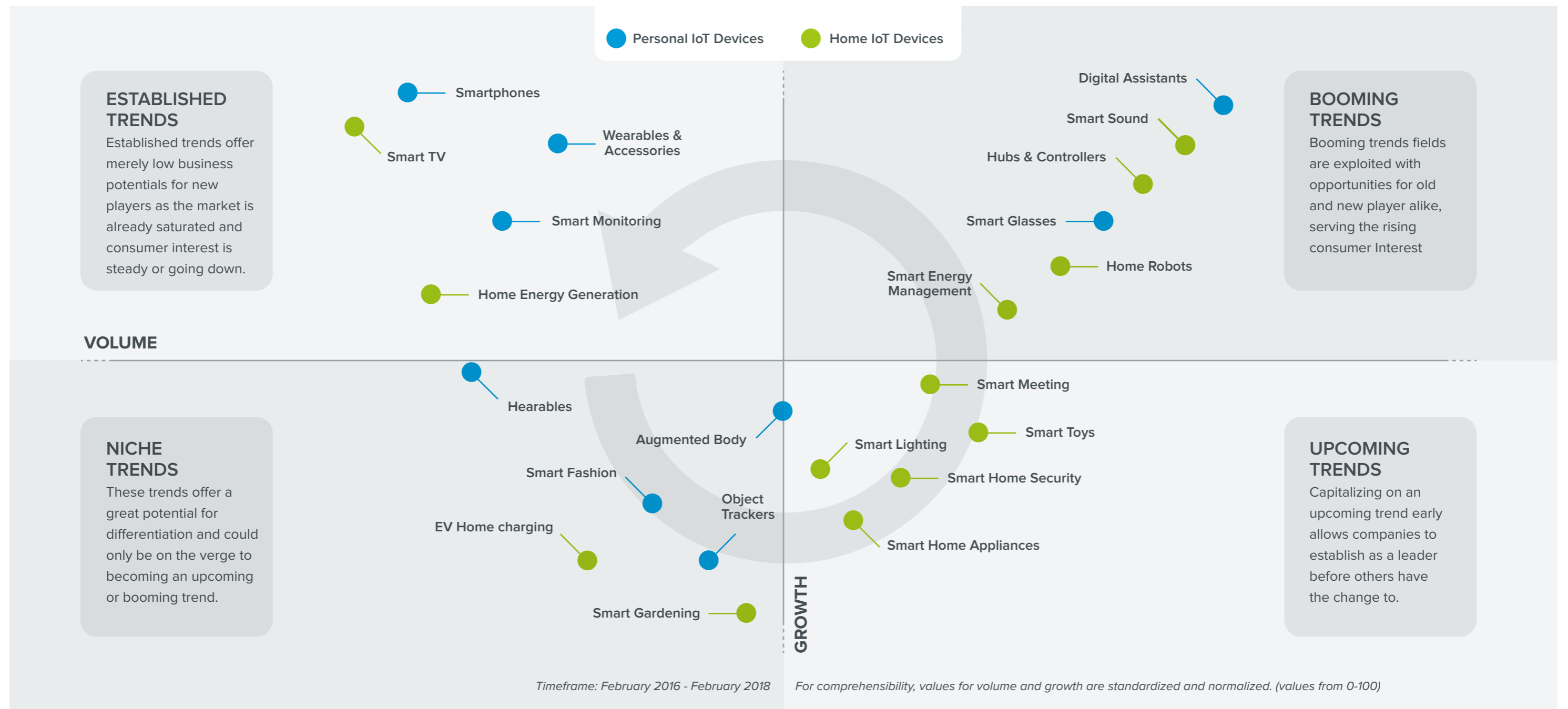PER PERSON

2017 $170BN
2022 $561BN

The IoT market was already a **$170 billion market by 2017.** It is expected to grow to around **$561 billion by 2022.**

WHAT IS TRENDING IN THE CONSUMER IoT MARKET?

Here's an overview and illustration of the **relevant trends** around Consumer IoT, based on their appearance in trade media, mass media, patents and scientific publications.

The arrow in the illustration above implies a typical trend development and a **life cycle from a small and growing trend** - which is discussed in relatively few scientific articles and publications -

to a larger, **established trend** with stagnating growth, which has long been discussed in various media and has shifted from niche circles into the mainstream.

Personal IoT Devices Home IoT Devices

ESTABLISHED TRENDS
Established trends offer merely low business potentials for new players as the market is already saturated and consumer interest is steady or going down.

Smartphones

Smart TV

Wearables & Accessories

Smart Monitoring

Home Energy Generation

VOLUME

NICHE TRENDS
These trends offer a great potential for differentiation and could only be on the verge to becoming an upcoming or booming trend.

Hearables

Augmented Body

Smart Fashion

EV Home charging

Object Trackers

Smart Gardening

GROWTH

Digital Assistants

Smart Sound

Hubs & Controllers

Smart Glasses

Home Robots

Smart Energy Management

BOOMING TRENDS
Booming trends fields are exploited with opportunities for old and new player alike, serving the rising consumer Interest

Smart Meeting

Smart Toys

Smart Lighting

Smart Home Security

Smart Home Appliances

UPCOMING TRENDS
Capitalizing on an upcoming trend early allows companies to establish as a leader before others have the change to.

Timeframe: February 2016 - February 2018

For comprehensibility, values for volume and growth are standardized and normalized. (values from 0-100)

THE FUTURE OF PERSONAL IoT DEVICES

The progress of Personal IoT devices by our longing for real-time support, constant entertainment and instant connection to everything. Moreover, integrated & intuitive personal IoT devices eliminate barriers between digital and physical, human and machine, acting as an interface to everything connected to the IoT, whether it is a human, a car, our home, or retail space. The trends experiencing the highest growth rates since 2016 are Digital Assistants, Smart Glasses and Augmented Body with the biggest players being Amazon, Apple, Google, Fitbit and Microsoft.

The number of **Personal IoT devices in 2017** wasaround 5.2 billion.

5.2 BILLION

600 MILLION people

Today 600 million people worldwide **use voice-controlled assistants** once a week.

The **global market for smart fashion** is expected to grow to $2.9 billion by 2022.

$2.9 BILLION

TOP 3 TRENDS 2017/2018

- Digital Assistants
- Smart Glasses
- Augmented Body

Google Glass explorer edition released

Microsoft reveals Cortana

Google ends sales of Google Glass

Apple's "Hey Siri" Event

Intel, Amazon & others invest $120M in Thalmic Labs

Amazon releases Echo 2nd Generation

Alexa & Google Assistant take over CES 2018

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These are booming or upcoming trends, meaning the number of articles in various media dealing with these phenomena has drastically increased over the past 12 months.

THE FUTURE OF HOME IoT DEVICES

The home of the future will support our living standard and wellbeing with intelligent, interconnected technologies and task automation. Smart home products and services are on the rise, allowing us to easily adjust the ambience of our home, to lower our energy consumption, to take over annoying chores and to recognise individual wishes immediately thus leaving us with more time for the things we love. The trends experiencing the hightest growth rates in 2017/2018 for more comfort and convenience are Smart Sound, Hubs & Controllers as well as Home Robots with the biggest players being Google, Apple, Amazon, Roku TV and iRobot.

The **global smart home market** reached a volume of $35.7 billion in 2017 and is expected to grow to $150.6 billion by 2023.
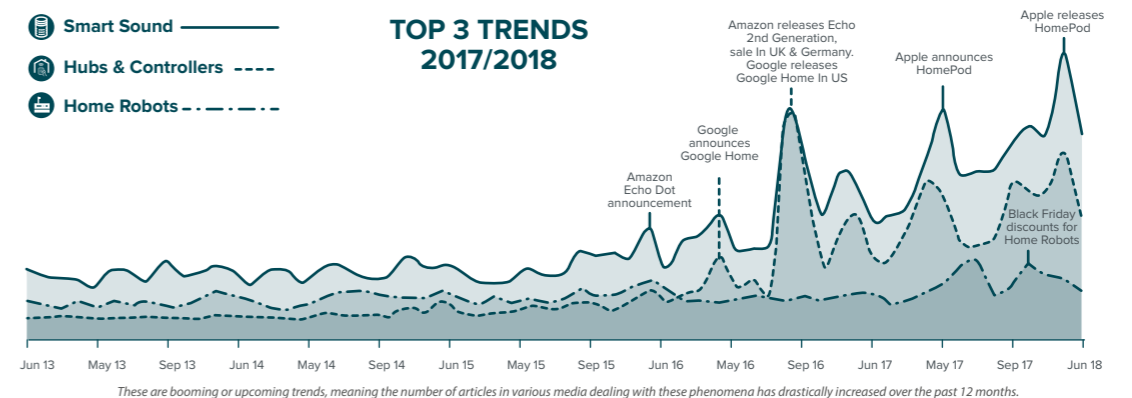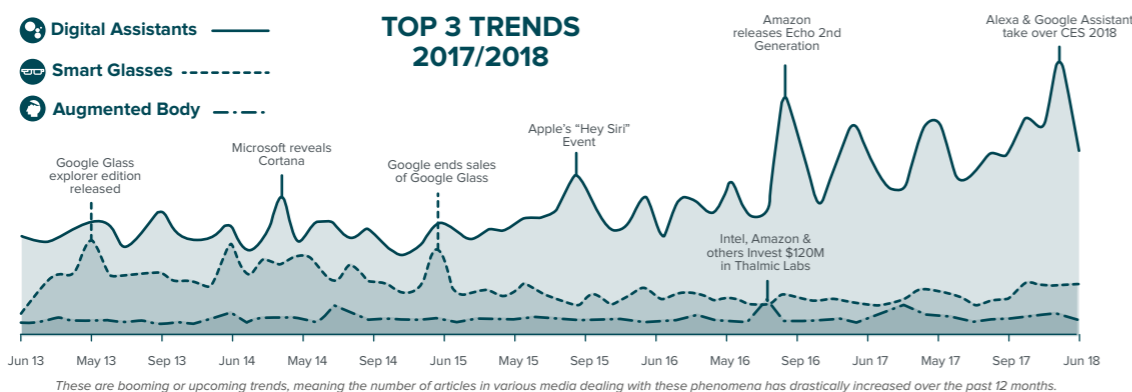
2017
$35.7 BILLION

2023
$150.6 BILLION

$11 BILLION

Home robots are expected to have a share of $11 billion of the entire **American robotics market** by 2020.

The **global market for smart home security** is growing by 27% annually.

27% ANNUAL growth

TOP 3 TRENDS 2017/2018

- Smart Sound
- Hubs & Controllers
- Home Robots

Amazon Echo Dot announcement

Google announces Google Home

Amazon releases Echo 2nd Generation, sale in UK & Germany. Google releases Google Home in US

Apple announces HomePod

Black Friday discounts for Home Robots

Apple releases HomePod

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NEW BUSINESS OPPORTUNITIES

We are already aware that things are becoming smarter around us, however, increasing smarter things are on the horizon. And with every new smart thing comes a new business opportunity.

INTUITIVE PRODUCTS & SEAMLESS SERVICES

Successful IoT products will **integrate seamlessly** into our lives and our homes until we forget that they are there and that we once did these tasks manually. Opportunities arise from **invisible hardware** which works (together) autonomously, automatically adjusts settings or intuitively via voice control.

One innovative idea is the **Fitness Tracker Plus,** a combination of a fitness tracker, a smart home hub and a task-automation app: The Fitbit Fitness Tracker can be connected to a Smart Home Hub such as Wink to act as a personal sensor. In combination with the task-automation app IFTTT, your smart home can automatically make coffee, play music or start the shower when you wake up and lock the door once you leave the house.

MORE DATA POINTS & INSIGHTS

The IoT brings us a new market for solutions that store, merge, process and protect data from smart home devices and personal gadgets. Companies can nourish this emerging market with their data and **use the insights** gained from IoT products and services to **better understand their customers** and improve their business processes.

This is what **Neura** had in mind when creating an **AI engine** that turns IoT environments (home, personal, travel,...) into intelligent personal worlds. The engine connects to multiple data channels to provide a situational awareness. This allows the AI to get to know the habits and needs of its users in order to enable automated, seamless experiences.

NEW TOUCHPOINTS & VALUE CHAINS

The IoT promises to **change the value chains** of many industries once again. With smarter products, companies will be able to monitor and predict usage or buying behavior. This enables them to bypass intermediates and **provide goods directly to the customer** at the push of a button or by automatic ordering.

Like **Amazon Echo Look,** a new voice-controlled selfie camera that allows AI assistant Alexa to give you fashion tips and help you discover new clothes. The app uses a combination of machine learning and advice from fashion industry experts and helps Amazon to increase sales of its own fashion line.

SERVICE ECOSYSTEMS & TAILORED EXPERIENCES

To differentiate themselves in the growing consumer IoT market, suppliers must concentrate on **the added value of smart solutions.** In addition to collaboration between companies, **personalised services are becoming more important.** Both aspects increase the usability, perceived benefit and efficiency of an IoT product or service.

One example for this new business opportunity is **Whirlpool's acquisition of Yummly** to expand its food & curated cooking ecosystem. Consumers are now able to use Yummly and its image recognition app to discover recipes or order food and equipment. Afterwards, consumers can cook their meals using Whirlpool's smart kitchen appliances.

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