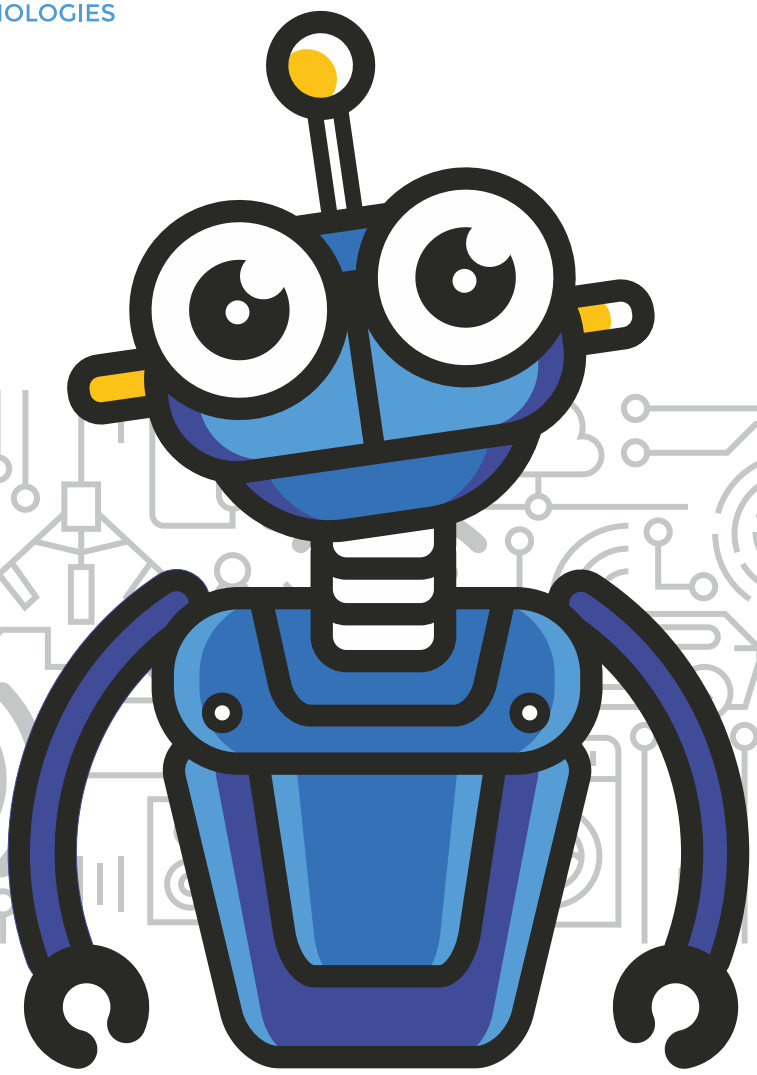
Speridian TECHNOLOGIES



IoT 101

What are the most common consumer IoT devices in use today?

Consumer Devices

Personal Assistants

Alexa | Siri
Google Assistant

Household Devices

Smart Appliances | Home Theater
Smart Door Locks

The Internet of Things describes a world of devices – from sensors to appliances – connected to the internet, but especially objects that "talk" to one other. The innovation of voice recognition now allows us to talk to them, too

THE EVOLUTION AND REACH OF IoT

1926

Nikola Tesla suggests that “the whole earth would be converted into a huge brain” by wireless technology, with instruments so small “a man will be able to carry one in his breast pocket.”

1990

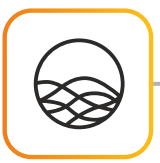
John Romkey invents a toaster that could be turned on and off via the internet

2000

LG announces plans for the first internet refrigerator

2009

The number of devices connected to the internet surpassed the world’s population, and the “Internet of Things” was born

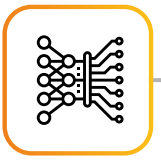


2011

Apple introduces Siri, the first digital assistant

2013

First IoT Devices use sensors to track surrounding environment, enabling smart home devices



2018

There were 7 billion IoT devices

2020

Estimated 30.3 billion IoT devices will be connected worldwide

BY THE END OF 2020

With **60%** of healthcare providers already using IoT solutions, that number is expected to rise

(https://ieeexplore.ieee.org/document/8400064)

There will be **4** internet connected devices for every one human on the planet

(https://www.gartner.com/imagesrv/books/iot/iotEbook_digital.pdf)

More than **30%** of online browsing will be done via voice

(https://www.gartner.com/smarterwithgartner/gartner-predicts-a-virtual-world-of-exponential-change/)

BUSINESS: THE NEXT FRONTIER OF VOICE-ACTIVATED IOT

73%
of companies surveyed view voice-activated technology as valuable to the enterprise but haven't taken steps to adopt it into their processes

85%
of companies surveyed plan to deploy voice-activated technology for customer interaction

88%
believe voice-activated technology can create competitive advantage, with 57% agreeing it would make the enterprise more efficient.

https://www.iotworldtoday.com/2020/03/24/voice-activated-technology-redefines-the-internet-of-things/

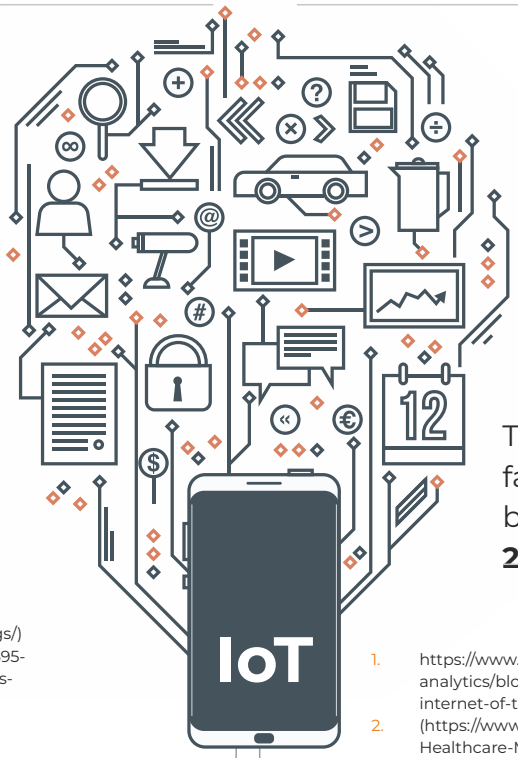
Personal voice-activated IoT devices are becoming integral to day-to-day life:

Almost **55** million people in the U.S. already own at least one voice-enabled IoT device [1]

Market for VE-IoT devices expected to grow more than **20**x by **2022**

Wearable devices are projected to exceed **27** billion in global sales for more than **233** million units by **2022** [2]

The global smart home market is expected to grow from **$78.3** billion in **2020** to **$135.3** billion by **2025** [3]



1. (https://www.iotworldtoday.com/2020/03/24/voice-activated-technology-redefines-the-internet-of-things/)
2. (https://www.ccsinsight.com/press/company-news/3695-success-of-apple-watch-means-more-growth-in-sales-of-wearable-technology/)
3. (https://www.marketsandmarkets.com/Market-Reports/smart-homes-and-assisted-living-advanced-technologie-and-global-market-121.html)

Businesses are only beginning to discover the potential value of this technology:

Voice is projected to capture up to **12%** of industrial IoT applications by **2022** [1]

The healthcare IoT market is expected to be worth **534.3** billion by **2025** [2]

By the end of **2016**, **60%** of healthcare organizations were using IoT devices [3]

Manufacturing IoT grew **84%** between **2016** and **2017**, the highest of any industry. [4]

The "Smart agriculture" or "smart farming" market is predicted to be worth [5] **$13.5** billion globally by **2023**

1. https://www.strategyanalytics.com/strategy-analytics/blogs/enterprise/iot/iot/2016/02/19/the-role-of-voice-in-the-internet-of-things)
2. (https://www.reportlinker.com/p05741281/Internet-of-Things-in-Healthcare-Market-Size-Share-Trends-Analysis-Report-By-End-Use-By-Component-By-Connectivity-Technology-By-Application-And-Segment-Forecasts.html)
3. (https://ieeexplore.ieee.org/document/8400064)
4. (https://www.verizon.com/about/sites/default/files/Verizon-2017-State-of-the-Market-IoT-Report.pdf)
5. (https://www.marketsandmarkets.com/Market-Reports/smart-agriculture-market-239736790.html)

THE ROLES OF VOICE IN IOT APPLICATIONS

Convenience

- With a device taking clinical notes, preparing documents and prescriptions, doctors can give patients undivided attention
- Smart home devices improve energy use
- One single device can control a number of systems

Cost-Savings

- Reducing operational inefficiency, improves business output, reduces time to market, and minimizes workplace injuries
- Optimized supply chain efficiency drives bottom line
- Smart home devices improve energy use

Accessibility

- Mobility-impaired individuals can perform smartphone tasks by voice
- Smart locks give disabled individuals and caretakers keyless access to homes
- Visually-impaired users can use navigation apps

THE TYPES OF VOICE IN IOT APPLICATIONS

Bi-directional

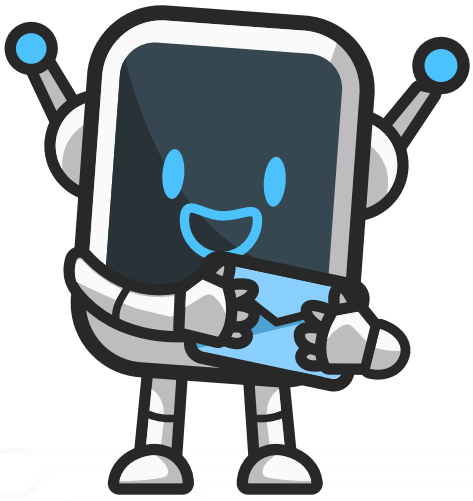
- Voice-integrated video monitoring surveillance systems
- Wearable healthcare device integration
- Performing complex tasks while driving
- Virtual staff to greet, seat, and take orders

Mono-directional

- Automated, responsive lights and temperature in office buildings
- Voice recognition door entry
- Public transportation system notifications
- Opening additional retail lines to relieve congestion

Voice recognition

- Home automation such as lighting and thermostat control
- Home security systems
- Command and control vehicular functions
- Smartphone, PC, wearable, and tablet voice assistants



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