

# TRENDS 2016



TRENDS ASPIRE TO BECOME  
THE STARTS IN THE NEW YEAR

01 A world without  
cash and with  
real time payments

02 Virtual reality  
explores the senses


03 The impact of  
robots on  
employment

04 "You can make  
almost anything  
smart"

05 INFOGRAPHIC  
Innovation trends for  
2016

01

# A world without cash and with real time payments

Mobile payments is one of the trends that  
will take [center stage in 2016.](#) 



In June 1967 what is considered to be the world's first ATM was installed at a branch of Barclays Bank in Enfield Street, London. Nearly half a century later, cell phones want to unseat ATMs and put a stop to using cash.

José Luis Sancho, managing director of Accenture Digital, highlights in this interview in [Expansión](#) newspaper that "Mobile payments will be the next wave of disruption in world trade" and emphasizes their strength: "In the US, millennials are, right now, the largest population segment in the labor market. In Spain, 40% of millennials constantly purchase online. It is a wave of change that is already here."

The [Accenture report](#) *Real-time payments for real-time banking*

reaffirms this idea of the strength of mobile payments. The adoption of mobile peer-to-peer (P2P) payments - system for making payments through cell phones that makes it easy to send money without the need for an ATM or a card - is a key driver. In Accenture's 2015 North America Consumer Payments Survey, 46% of the 4,000 consumers surveyed had used a real-time mobile P2P service such as Venmo or PayPal, with 15% using them regularly.

Consumers consider being able to make mobile payments vital and they would therefore change bank to get access to immediate payments. Of the over 2,000 people in the UK surveyed by YouGov for ACI Worldwide, almost half (45%)

said the promise of a faster and more convenient electronic payment service would encourage them to move their account to a different bank.



### Some common characteristics of immediate payments:

- 24x7 availability: consumers should be able to make or receive a payment at any time of day or night, any day of the week.
- Immediacy: the funds being transferred should be available in the recipient's account in real-time or near real-time.
- Irrevocability: once a payment has been received, it cannot be revoked.
- Certainty: both payer and recipient must be notified in real-time that the payment has been accepted or rejected by the recipient's bank.

- Richer data standards: most real-time payments schemes across the world standardize data sets to enable greater interoperability, improve payment efficiency and carry richer information with the payment.

ISO 20022 is increasingly becoming the standard for financial processing, including for many of the new immediate payment systems.


- Alias/proxy/tokens: In parallel to the demand for immediate payments, there is demand to proliferate ways to connect and transfer funds real-time between parties in the digital economy. This requires the use of addressing databases linking aliases such as mobile phone

numbers, email addresses, social media ids, or virtual account numbers to bank account information. Paym in the UK is an example of this.

"Placing [real-time payments](#) at the heart of the digital economy" is the title of the post on this report. A text emphasizing that, "Banks have to connect bank accounts, digitally-enable them to make payments, at any point in the ecosystem through any device. **If banks are not enabled in the digital economy, others will step in**, relegating bank accounts into "dumb" accounts to feed the digitally-enabled accounts of others. Banks will lose direct connection and a daily point of interaction with their customers".

# 02

## Virtual reality explores the senses

Over 11 million people will experience virtual reality in 2016. 

In October, the Spanish company Neurodigital Technologie presented Gloveone at The App Date event in Madrid. With this virtual reality glove, users can feel everything they see through the glasses, from rain to fire. Luis Castillo and Francisco Nieto invented the glove a year ago in Almeria,


thinking about the potential therapeutic needs of some patients when using virtual reality in their treatment. Financed by Kickstarter, Gloveone will go on sale in February 2016, priced at around 200 euros. It will be the first glove in the world that complements immersive experiences.



This Spanish glove is another example of the rapid spread of virtual reality. According to figures from [Superdata](#), 11 million users will experience virtual reality next year, but this

will explode with sales of **virtual reality devices reaching 70 million in 2017**.

The report also finds that 76% of users would like to try virtual

reality in their own homes, with 37% preferring to use a PC and 32% a smartphones, whilst only 7% were interested in playing from a [games console](#). 

## Startling figures

The trigger for this spectacular growth in virtual reality was Facebook's 2014 announcement that it had bought Oculus. Mark Zuckerberg spent 2 billion dollars (1.45 billion euros) to snap up this company that develops virtual reality headsets for videogames. "In the long-term, immersive, virtual and augmented reality will become a part of people's everyday life", Zuckerberg said after buying the company, saying it was **"different from anything I have ever experienced in my life"**.

Two years later, and Zuckerberg is repeating his message, "I tried

Oculus a couple of years ago and, although I had already tried virtual reality, this was something else. I didn't want to take it off. This is the way of connecting the future. Facebook's mission is to connect the world in every possible way. **The world is changing.** The ways we share are becoming ever richer. First it was text, then photos and video, and virtual reality will be next. It has gone from being a promise to a reality really quickly. Facebook is committed to this creativity. Thank you for being part of our journey".



Between buying Oculus and Zuckerberg's latest message, virtual reality has spread into the realm of the senses: having achieved the sensation of being in a place, companies now want people to be able to feel and interact. This is shown by


Gloveone and cabins that seek to achieve teleportation through smells. Virtual reality is expected to reach the public in 2016. It has been pursuing this take off for years, but it is still not yet [reality](#). [in](#)





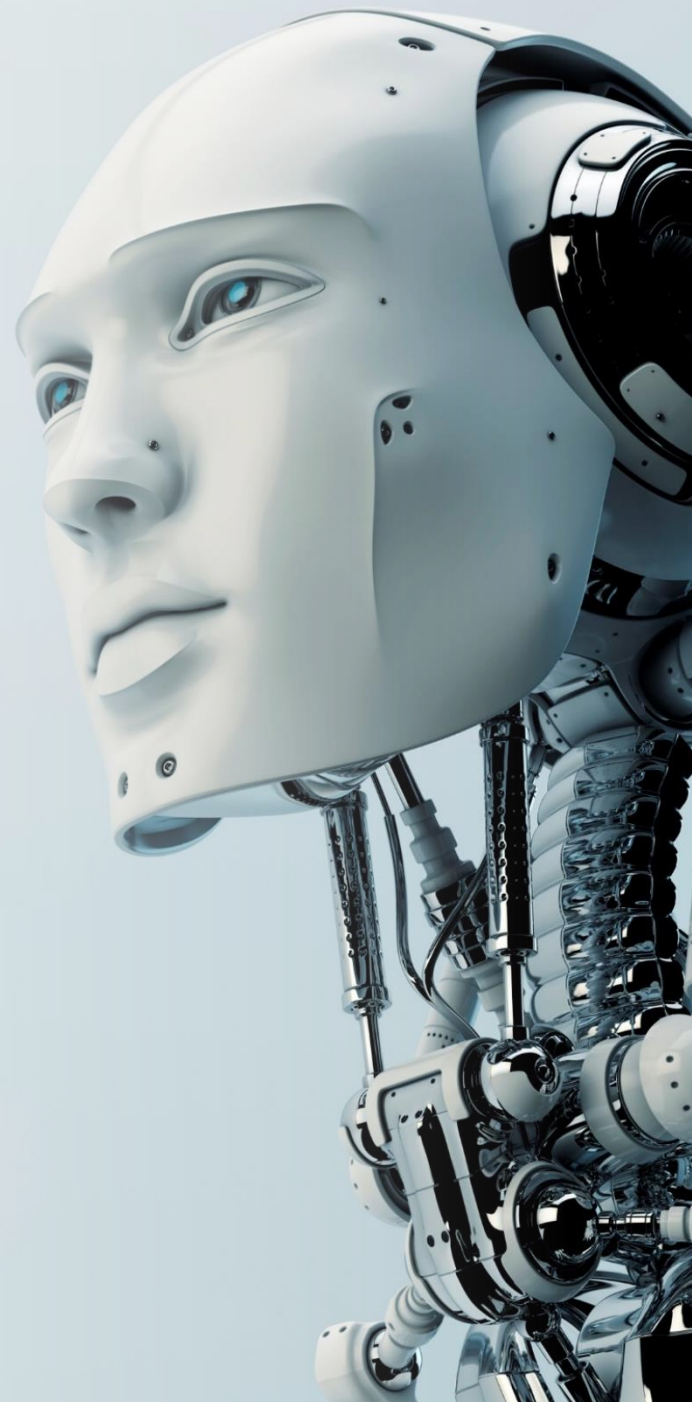
# 03

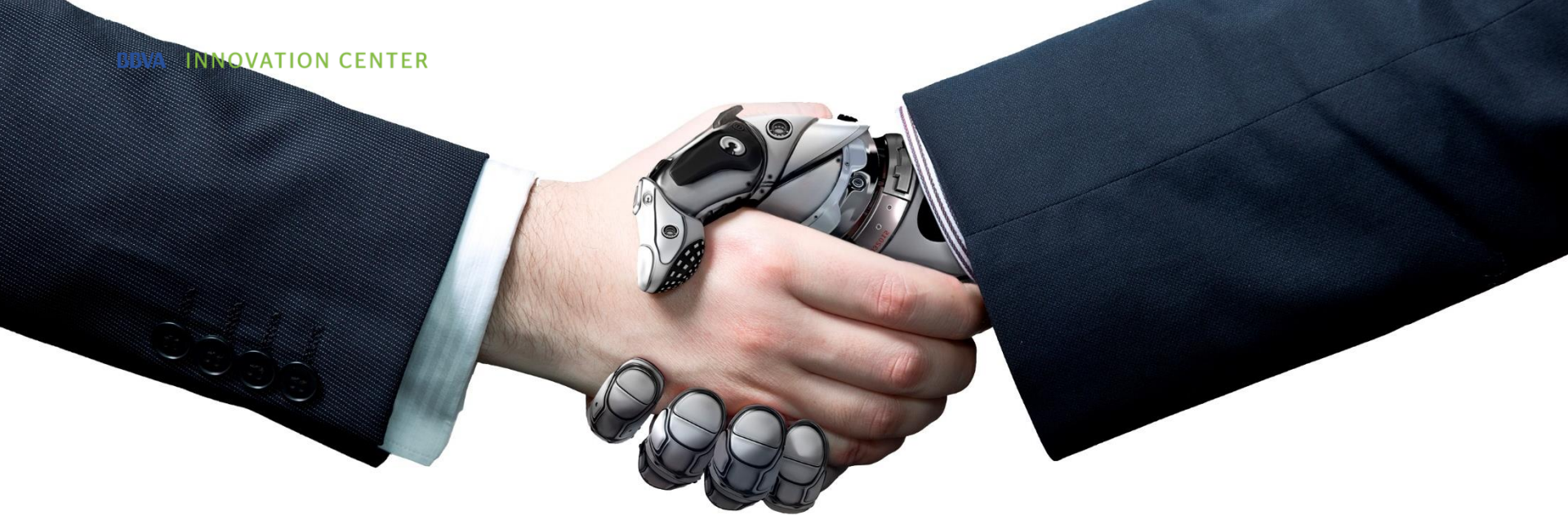
## The impact of robots on employment

2016 will be the year for smart machines to definitively takeoff. Experts stress that employment grows significantly faster in occupations that [use computers more](#). 

Robots and other technologies transform supply chains, track items from source to the consumer, minimizing the time and cost of shipping, automate administrative tasks and offer endless opportunities in different sectors. In 2016 and

2017 China will lead global robot production, churning out close to 400,000 units, while the United States will produce 300,000, according to the International Federation of Robotics (IFR). And one of the questions raised is whether this





growth can remove the need for human workers and cause persistent technological unemployment.

The [article](#) in the New York Times Automation Is a Job Engine, New Research Says stresses that new "smart machines" are radically changing the nature of work; the question

is how they are doing it, i.e.

### **Does technology kill jobs or simply create a demand for new skills?**

A recent article by James Bessen, a law professor at Boston University, analyzes the impact of technology on employment and provides food for thought. Using government

data, Bessen examined the impact of computer automation on 317 professions (occupations) from 1980 through 2013. His conclusion could be summarized in one sentence: **Employment grows significantly faster in occupations that use computers more.**

## The advance of technology creates more jobs

Historically, it is well established that the advance of technology has generated more jobs than it has replaced, which would be the trend that could be envisaged. More than 80 years ago, the renowned English economist **John Maynard Keynes** warned of the new disease of "technological unemployment".


Yet the paper by Bessen provides a detailed study of technology and jobs in recent years. According to Bessen, **"The idea that automation kills jobs isn't true historically, and if you look at the last 30 years, it's not true then either"**.

In fact he added, "Right now, the best thing that can happen to you is to get some automation to do your job better."

His conclusions are based on occupation, salary and computer-use data from decennial, yearly and monthly surveys, mainly from the United States Census Bureau and the Bureau of Labor Statistics. In his paper, he also **describes the effect of new technology on a handful of occupations.**

As an example Bessen says the economic response resulting from the introduction of ATMs was much more dynamic than expected. And this is not new. During the Industrial Revolution, automation did not cause technological unemployment.

In the nineteenth century, for example, the power loom automated 98% of the work needed to produce almost a meter of cloth, but the number of jobs in material factories increased.

Why? **The lower cost of labor per meter represented a lower price in competitive markets,** which boosted demand for cloth and the demand for weavers increased, even though the labor required [per meter decreased](#). 

Moreover, as technology automated more textile tasks, other weaver skills, such as coordinating works in several looms, gained greater value. Weaver wages increased significantly compared to those of other workers in the late nineteenth century. The economy also responds dynamically in other ways.

Sometimes, new jobs are generated in related professions. For example, electronic publishing involved fewer printers, but more graphic designers.

The other aspect that is worth analyzing is what kind of jobs are more easily automated. We're used to thinking that the jobs

that are most likely to be taken over by automation are low-skilled ones, such as assembly line workers.

In contrast, highly-skilled jobs, such as doctors for example, seem like they will be comfortably insulated from the [robot revolution](#). [in](#)



But new research from the consultancy firm McKinsey & Company highlighted by The [Washington Post](#) shows that isn't quite right. While there is a connection between a job's skill level and the likelihood it will be automated, there are a lot of jobs that don't fit that pattern. One example: CEOs, whose jobs will be more affected by automation than landscapers, the researchers say.

Actually, **there are few occupations that could be entirely turned over to robots**, it is estimated that **only 5%** with the technology available today. The more accurate way to think

about this, they say, is not in terms of entire jobs, but in terms of activities. Few of us will actually be replaced by a robot. But there are tons of workers who will have part of their jobs taken away by automation. For about 60 percent of jobs in the U.S., nearly a third or more of their activities could be automated.



Therefore, computer automation does not necessarily imply an imminent and massive reduction in jobs; new technologies can also **increase the demand for workers** with new skills. In fact, the process of automating some tasks or activities in certain occupations seems that it can increase

productivity, resulting in more and better products for consumers.

As the experts conclude: the technology revolution is likely to accelerate. **Artificial intelligence will gain greater capabilities** in the coming years and will possibly absorb tasks in

hundreds of occupations. But this is no reason to despair about the "end of work", but another reason to focus on policies that help many workers to be able to acquire the knowledge and skills needed to work with new technology.



04

**“You can make almost anything smart”**

The Internet of Things is revolutionizing the business world. 

1926. The genius **Nikola Tesla** (Smiljan, Austro-Hungarian Empire, 1856-New York, 1943) evokes a **planet functioning like a brain, where everything is connected wirelessly**. This was the first mention of what today is known as the Internet of Things. The term was first published in 1999 in the scientific journal of MIT's Auto-ID Center. Kevin Ashton coined the term in his work on radiofrequency, and subsequently highlighted three ways of communicating: object to person, object to object, and machine to machine (M2M).

The hybridization between the real and virtual worlds causes objects to have greater value due to the available information associated to them. This information is also increased by

the data provided by the object. The exchange of data allows objects to act autonomously from what is happening in the physical world (without human intervention) and numerous services are delivered based on these [connected objects](#). **f**





There are dozens of definitions of the Internet of Things. John Cohn, a science graduate in microelectronics at MIT and doctor of IT Engineering with over 30 years' experience at IBM says: "The Internet of Things links the chips that are embedded in things with the incredible advances in IT, computers that can think (...). Now we have broadband and

can connect miniscule chips with huge computers in any part of the world, you can make [almost anything smart](#)".

The scientist, who is known as the "Yoda of the Internet of Things", uses the car as an analogy of how far you can go when objects are connected. "If you've been driving a car for the last 50 years and it fails, a red

light tells you something's wrong. If you're a good owner, you take it to be fixed. The idea is that with the Internet of Things you can anticipate the parts that are going to go wrong. That not only makes your life easier, it also makes it safer. The great thing about the Internet of Things is that [everyone has things](#)". [in](#)

## A safe, healthy, productive and connected future

**John Cohn** envisages a completely connected future: “I think we’ll reach a point when all industrial products will have connectivity integrated. We can create a new business value simply by monitoring things. Almost everything we use in our everyday lives is going to have those capacities. Technology not only has the potential to improve our lives and make things more fun I believe that everywhere in the world it can also help people live more productive, healthier and safer lives. It’s incredible how just a few local data can achieve so many results”.

For Kevin Ashton the Internet of Things is advancing in leaps and

bounds: “We’ll have -we already have- more sensors for health, energy and the supply chain, that is to say, a little more automation”.

And he sees no barriers, “only questions we have yet to find the answers for. The next areas of research -and not necessarily in that order- are probably parasitic energy, automated learning and user interfaces for Big Data technology”.

It is estimated that in 2020 there will be nearly 50,000 objects connected to the Internet. Everyone is trying new things, and according to John Cohn, “People are going to share ideas, code and design to build on other people’s ideas. We won’t think like we did twenty years

ago. **Nobody will keep their ideas to themselves, and that’s going to change the world”.**



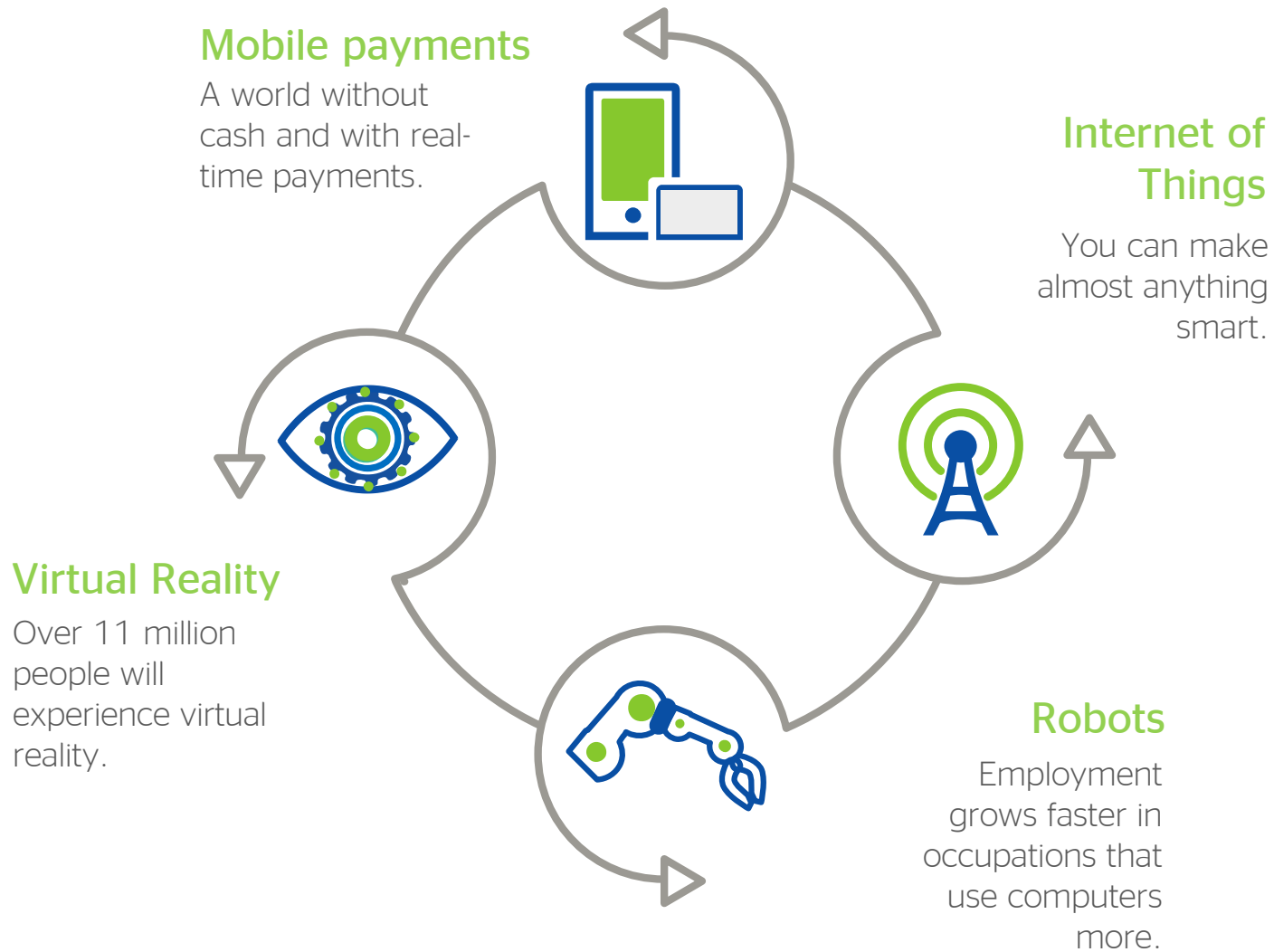
# 05/INFOGRAPHIC

## Innovation trends for 2016

Mobile payments, virtual reality, robots and the Internet of Things aspire to become this year's stars.

 [Share in Pinterest](#)





# MOBILE PAYMENTS

Mobile payments will be the next wave of disruption in the world of trade.



## Features:

- Accesibles 24x7
- Inmediacy
- Irrevocability
- Improve standars
- Alias/proxy/ leaflets

132

billion dollars in  
mobile sales  
in Europe  
and the U.S

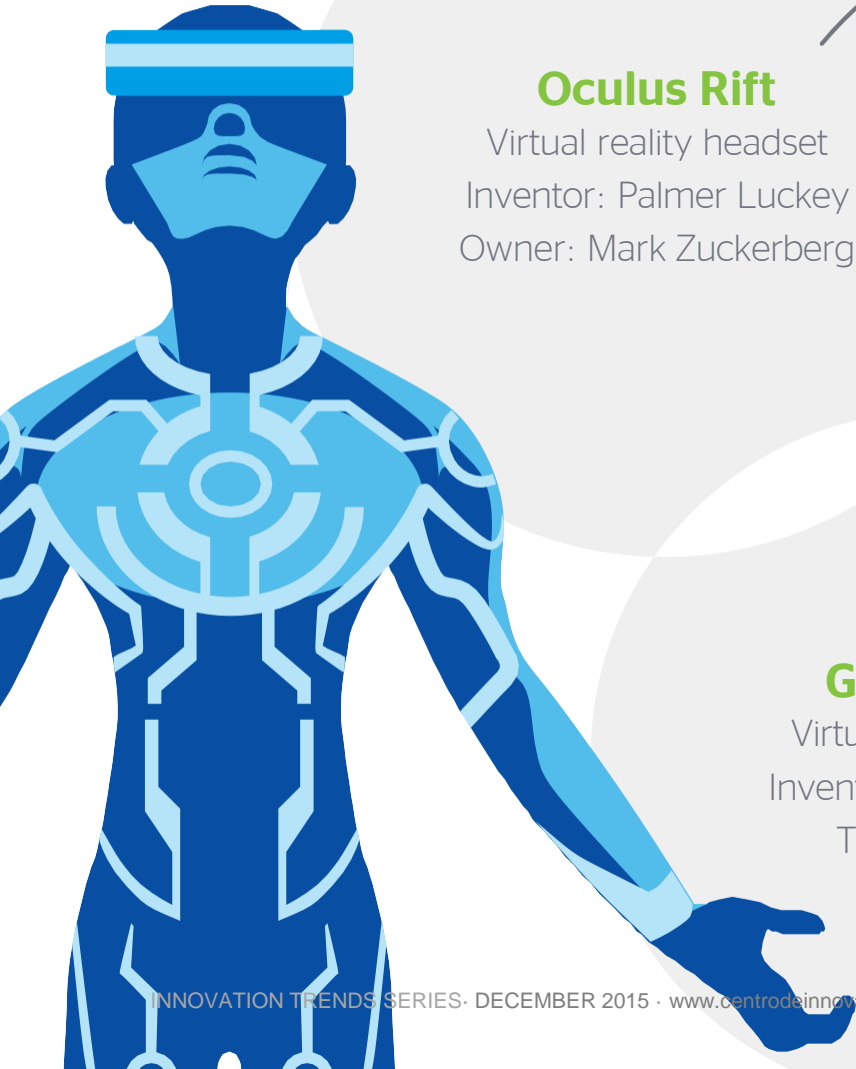
40%

of millennials  
constantly  
buy online

This is how Bitcoin works; the boom of cryptocurrencies.



# VIRTUAL REALITY



## Oculus Rift

Virtual reality headset  
Inventor: Palmer Luckey  
Owner: Mark Zuckerberg

"Facebook's mission is to connect the world in every possible way".

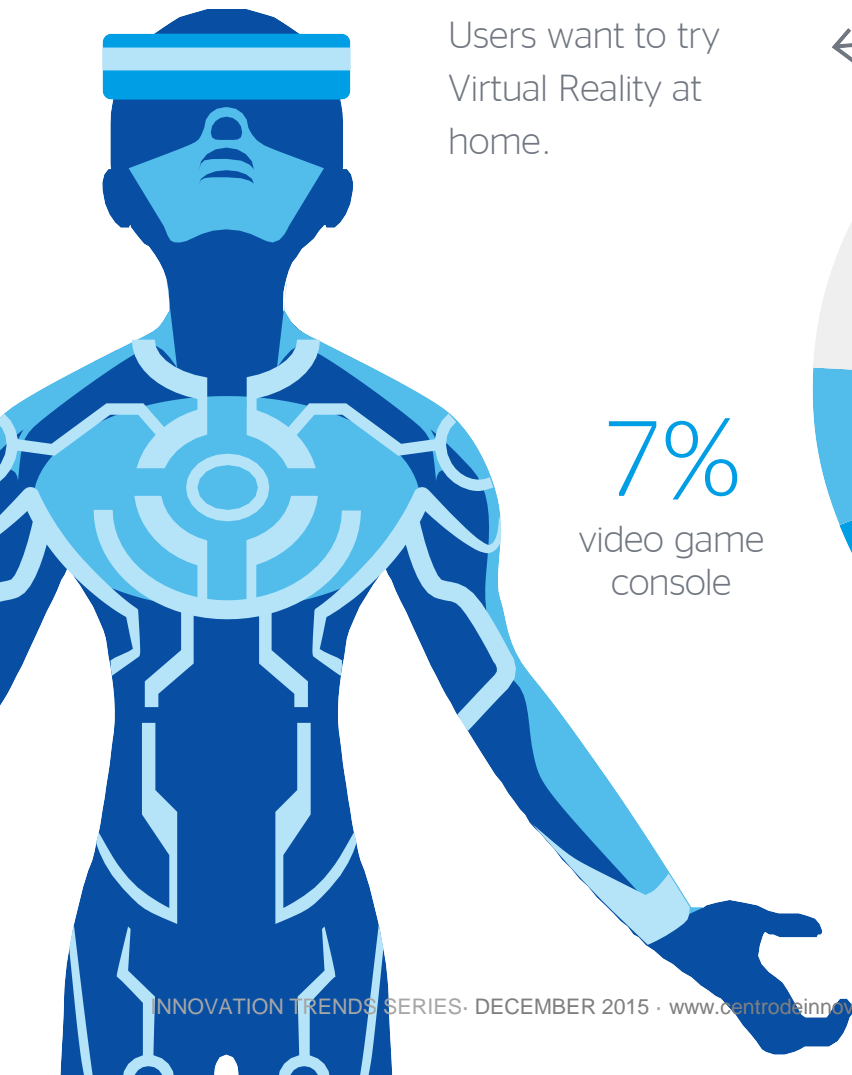
## Globe One

Virtual reality glove  
Inventor: Neurodigital Technologies

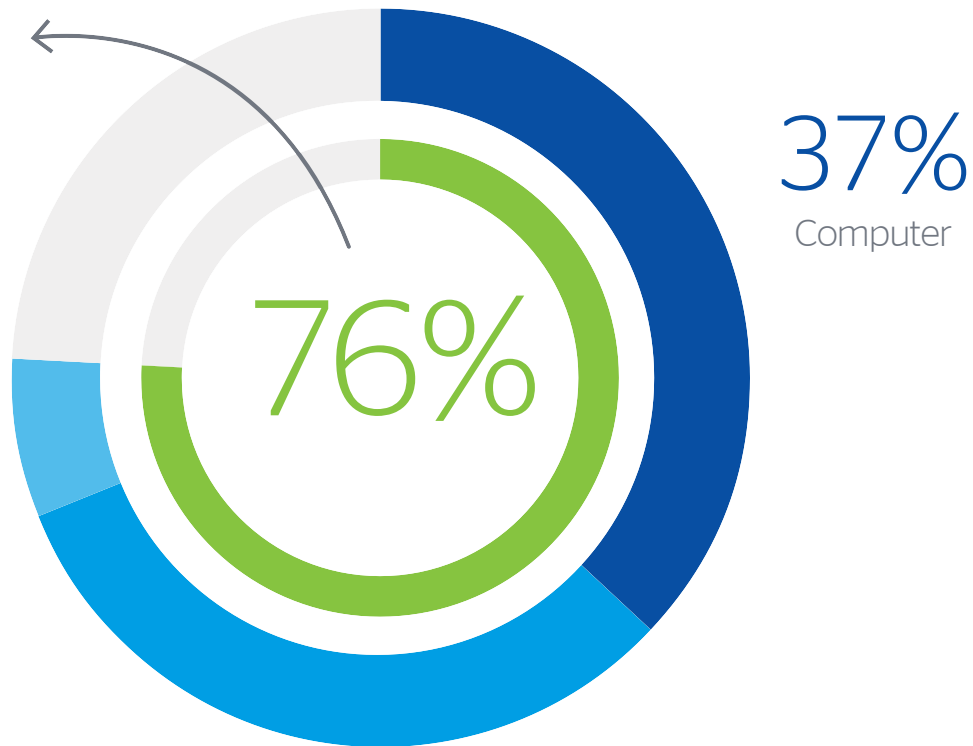
Enables users to feel everything they see through the goggles, from rain to fire.

It will become the first glove in the world for enjoying immersive experiences.

# Possible uses of virtual reality



Users want to try Virtual Reality at home.



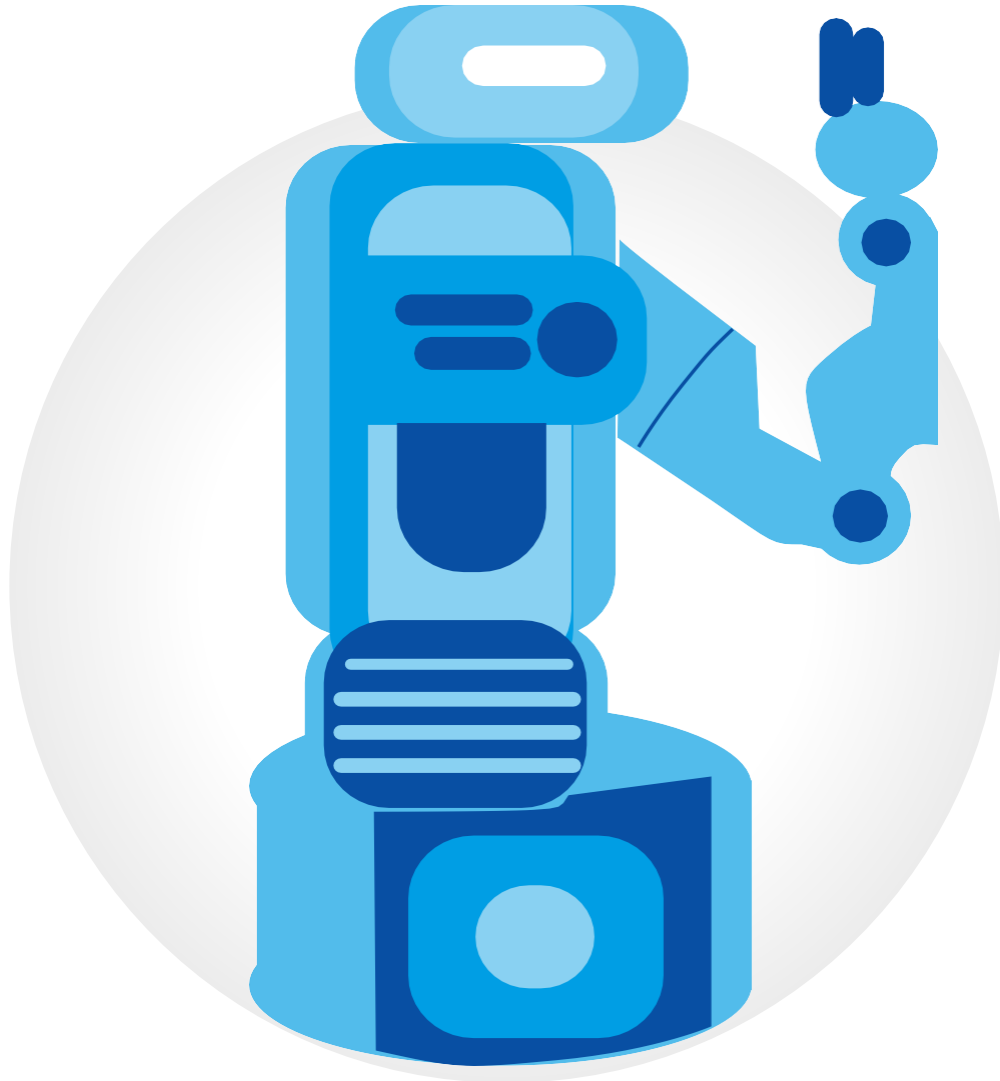
7%  
video game console

32%  
Smartphones

37%  
Computer



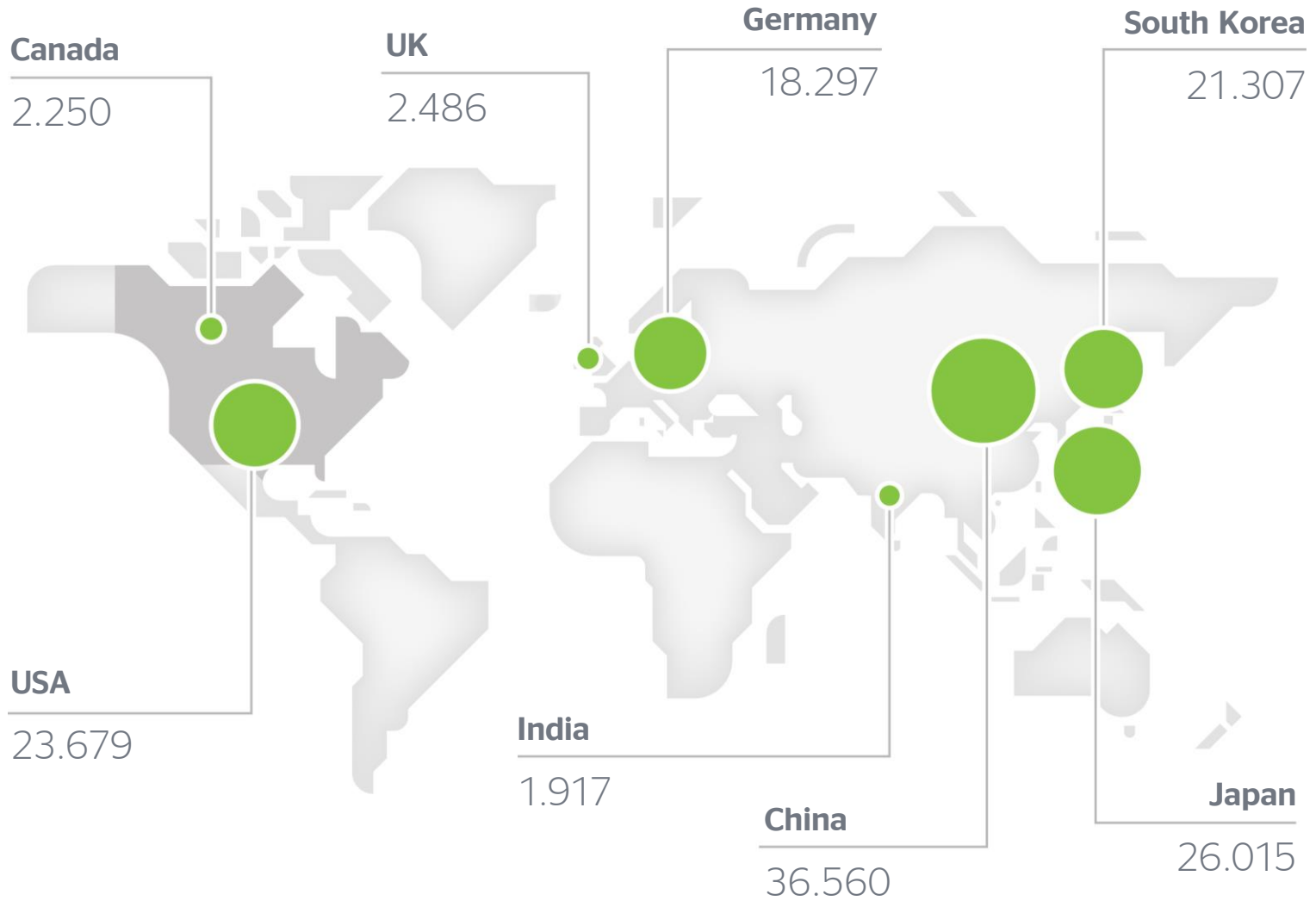
# ROBOTS



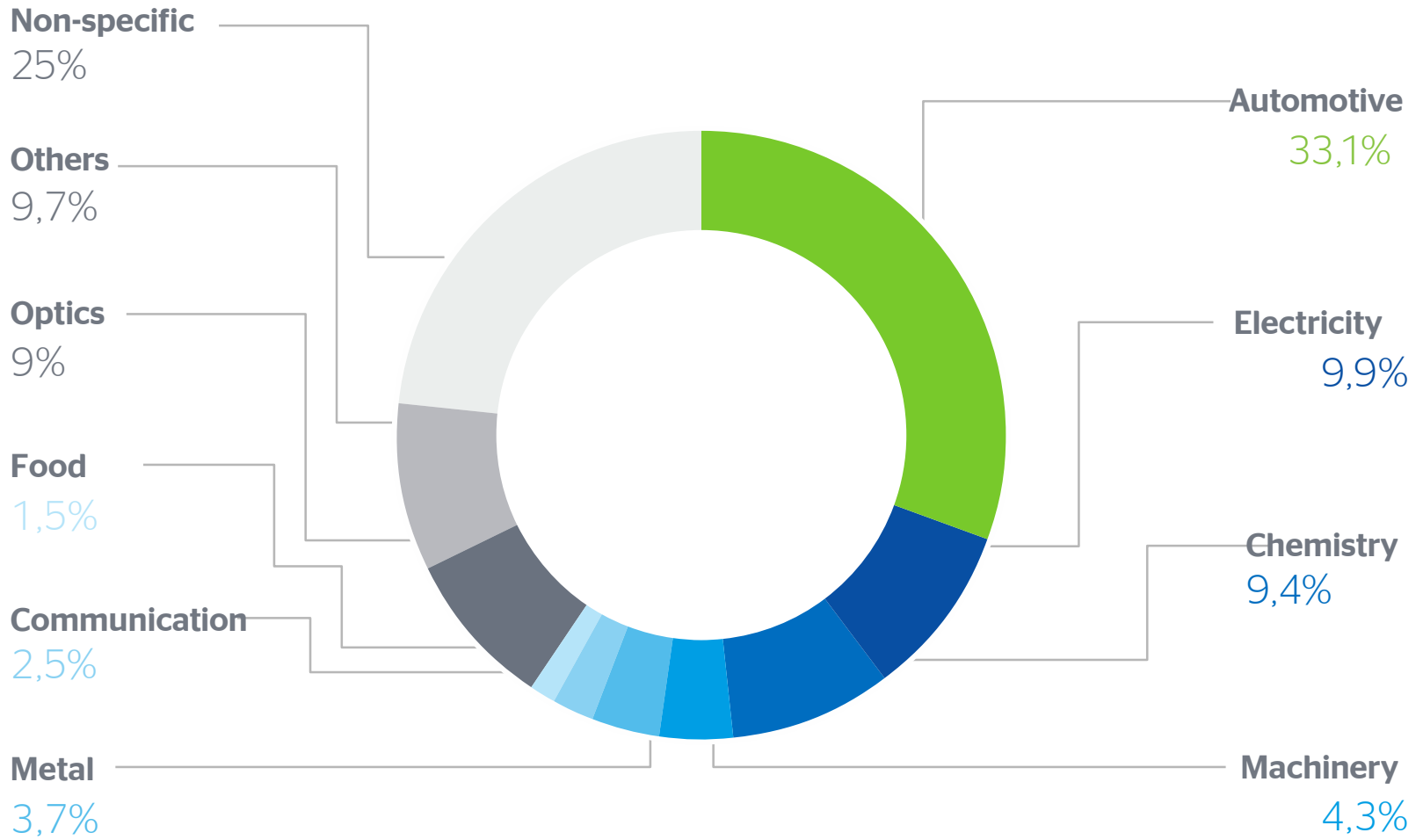
## Features:

- They transform supply chains.
- They track items from the source to the customer..
- They minimize time and delivery costs.
- They automate administrative tasks.
- They offer endless opportunities in different sectors.

# Robot sales by country



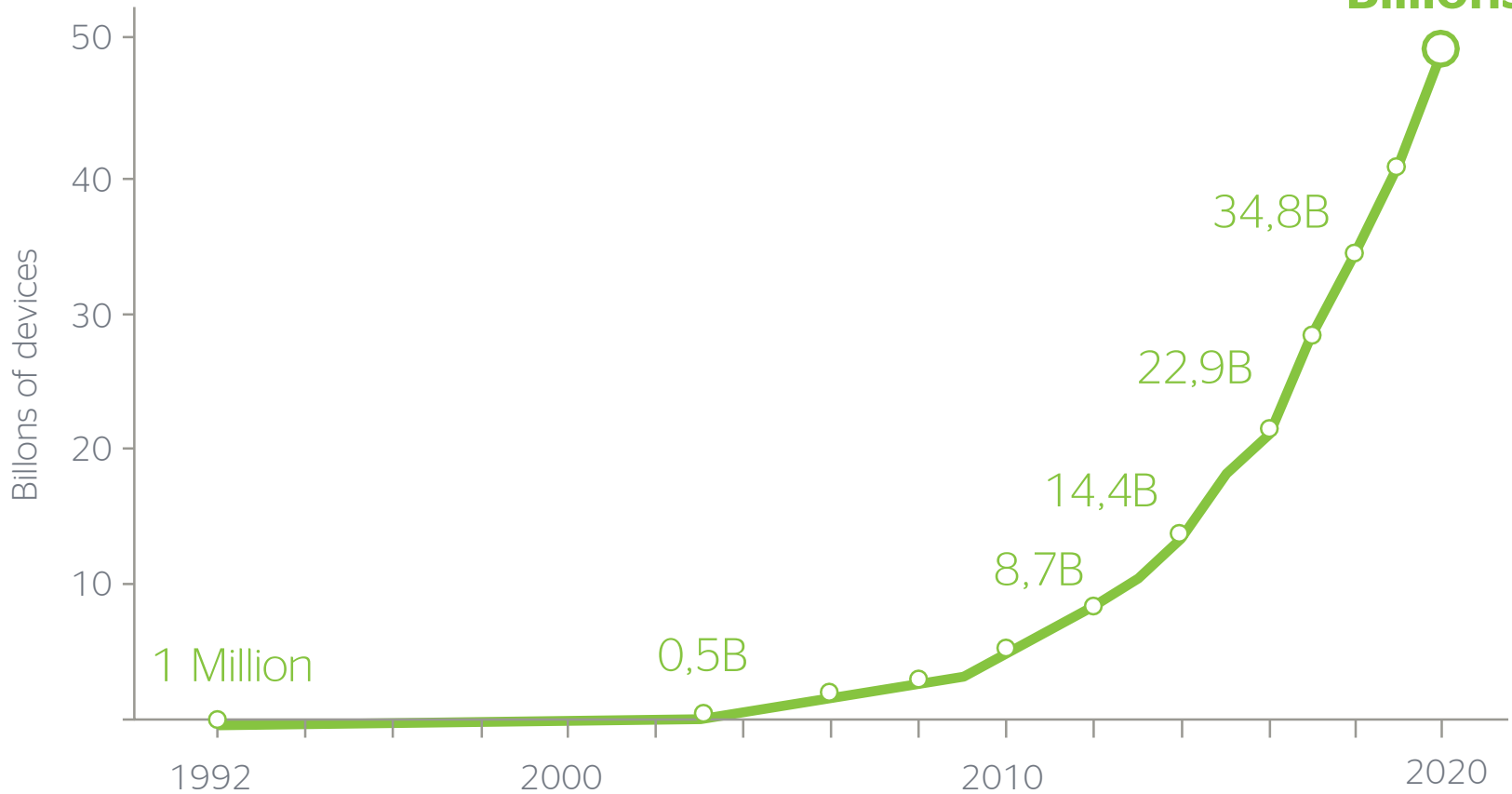
# Robot density



# INTERNET OF THINGS

## Trend

**50**  
Billions



# Apps & figures: IoT



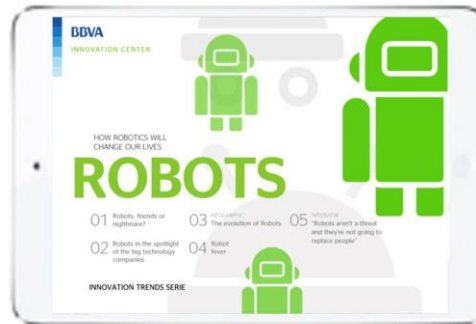
share



# SERIE INNOVATION TRENDS

BBVA Innovation Center creates the **Innovation Trends Series** to keep you updated with cutting edge innovation trends and their appliance to your everyday life. In this papers you will find all key facts, analysis, case studies, interviews with experts and infographics to visualize the data that each and every trend describes.

## PREVIOUS NUMBERS



How robots will change our lives



This is the first digital generation



The web is now ubiquitous, in our homes, in our business



The hour of democratization of the three dimension

síguenos:



# Sign up

To keep up to date with the latest trends

**BBVA**

INNOVATION CENTER

[centrodeinnovacionbbva.com](http://centrodeinnovacionbbva.com)



BBVA no se hace responsable de las opiniones publicadas en este documento.