

IMPACTO DE LA TECNOLOGIA EN LOS CAMBIOS DEL ENTORNO

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10 BREAKTHROUGH 2016 TECHNOLOGIES

MIT
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Review

 OPINNO
WE DELIVER IMPACT THROUGH INNOVATION

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HAS QUANTUM
COMPUTING
FINALLY
ARRIVED?
Upfront p24

HOW
TOMORROW'S
STARTUPS WILL
BE FUNDED
Business Report p75

TECH
TRANSFORMS
MUSIC, ART,
AND PROSE
Reviews p87



Buzz Aldrin,
Apollo 11
moonwalker,
would like a
word with you.

**You Promised Me Mars Colonies.
Instead, I Got Facebook.**

We've stopped solving big problems.
Meet the technologists who refuse to give up. p26

TIME FOR BRAVE LEADERS

CELLS

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IMMUNE ENGINEERING

Genetically engineered immune cells are saving the lives of cancer patients. That may be just the start

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Breakthrough

Killer T cells programmed to wipe out cancer

Why it matters

Cancer, multiple sclerosis, and HIV could all be treated by engineering the immune system

Key Players

- Collectis
- Juno Therapeutics
- Novartis



PRECISE GENE EDITING IN PLANTS

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CRISPR offers an easy, exact way to alter genes to create traits such as disease resistance and drought tolerance

Breakthrough

The ability to cheaply and precisely edit plant genomes without leaving foreign DNA behind

Why it matters

We need to increase agricultural productivity to feed the world's growing population, which is expected to reach 10 billion by 2050

Key Players

- The Sainsbury Laboratory and John Innes Centre, Norwich, U.K.
- Seoul National University
- University of Minnesota
- Institute of Genetics and Developmental Biology, Beijing



DNA APP STORE

An online store for information about your genes will make it cheap and easy to learn more about your health risks and predispositions

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Breakthrough

A new business model for DNA sequencing that will make genetic information widely accessible online

Why it matters

Your genome determines a great deal about you, including your likelihood of getting certain diseases

Key Players

- Helix
- Illumina
- Veritas Genetics



ATOMS



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POWER FROM THE AIR

Internet devices powered by Wi-Fi and other telecommunications signals will make small computers and sensors more pervasive



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Breakthrough

Wireless gadgets that repurpose nearby radio signals, such as Wi-Fi, to power themselves and communicate

Why it matters

Freeing Internet--connected devices from the constraints of batteries and power cords will open up many new uses

Key Players

- University of Washington
- Texas Instruments
- University of Massachusetts, Amherst



SOLARCITY'S GIGAFACTORY

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A \$750 million solar facility in Buffalo will produce a gigawatt of high-efficiency solar panels per year and make the technology far more attractive to homeowners

Breakthrough

Highly efficient solar panels made using a simplified, low-cost manufacturing process

Why it matters

The solar industry needs cheaper and more efficient technology to be more competitive with fossil fuels

Key Players

- SolarCity
- SunPower
- Panasonic



REUSABLE ROCKETS

Rockets typically are destroyed on their maiden voyage. But now they can make an upright landing and be refueled for another trip, setting the stage for a new era in spaceflight

Breakthrough

Rockets that can launch payloads into orbit and then land safely

Why it matters

Lowering the cost of flight would open the door to many new endeavors in space

Key Players

- SpaceX
- Blue Origin
- United Launch Alliance
- Zero to In

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IBITS

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CONVERSATIONAL INTERFACES

Powerful speech technology from China's leading Internet company makes it much easier to use a smartphone

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Breakthrough

Combining voice recognition and natural language understanding to create effective speech interfaces for the world's largest Internet market

Why it matters

It can be time-consuming and frustrating to interact with computers by typing

Key Players

- Baidu
- Google
- Apple
- Nuance
- Facebook



ROBOTS THAT TEACH EACH OTHER

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What if robots could figure out more things on their own and share that knowledge among themselves?

Breakthrough

Robots that learn tasks and send that knowledge to the cloud for other robots to pick up later

Why it matters

Progress in robotics could accelerate dramatically if each type of machine didn't have to be programmed separately

Key Players

- Ashutosh Saxena, Brain of Things
- Stefanie Tellex, Brown University
- Pieter Abbeel, Ken Goldberg, and Sergey Levine, University of California, Berkeley
- Jan Peters, Technical University of Darmstadt, Germany



TESLA AUTOPILOT

The electric-vehicle maker sent its cars a software update that suddenly made autonomous driving a reality

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Breakthrough

A car that drives itself safely in a variety of conditions

Why it matters

Car crashes caused by human error kill thousands of people a day worldwide

Key Players

- Ford Motor
- General Motors
- Google
- Nissan
- Mercedes
- Tesla Motors
- Toyota
- Uber
- Volvo



SLACK

A service built for the era of mobile phones and short text messages is changing the workplace

Breakthrough

Easy-to-use communication software that is supplanting e-mail as a method of getting work done

Why it matters

In many kinds of workplaces, the “water cooler” effect that lets people overhear their colleagues’ conversations can enhance productivity

Key Players

- Slack
- Quip
- Hipchat
- Microsoft

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BEFORE YOU GET
DISRUPTED**

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