

# Weekly Discovery

We SHARE to inspire and ignite ideas!

24 October 2016 – 28 October 2016



## SPECIAL HIGHLIGHT

### Supply chain management

Supply chain management (SCM) considers the flow of materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer and finally to consumer. It involves coordinating this flow both within and among companies.

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## ARCHITECTURE

### Floating Jellyfish Lodges Combat Pollution and Grow Food for the Community



Janine Hung's Jellyfish Lodge, uses an innovative design comprising solar-powered structure, with tentacles that trap pollutants and enable the purification of water. Her work has received an honorable mention in the Inhabitat's Bidesign Competition.

Source: [Mymodernmet.com](#) (21 October 2016)

## ERGONOMICS

### This Mind-Bending Wheelchair Goes Forward While Its Wheels Spin Backwards



A wheelchair named RoChair designed by Rowheels allows the user to move ahead by pulling the wheels backward. It is said that by doing so, it requires 25% less effort to move the chair and have a lesser chance of incurring shoulder injuries.

Source: [Popular Mechanics](#) (21 October 2016)

## INDUSTRIAL ANALYSIS

### New Imperatives: Why Global Industrials Must Shift Strategic Priorities

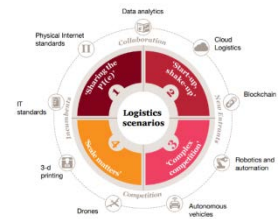


L.E.K. Consulting interviewed CEOs and senior executives from 17 major global firms from a range of industrial sectors on challenges faced. This report is a compilation of analyses, insights, advices and strategies adopted in responses to the emerging trends and more.

Source: [L.E.K.](#) (25 October, 2016)

## INDUSTRY FORECAST

### Shifting patterns: the future of the logistics industry



Gain insight into the disruptions that are changing the transportation and logistics industry landscape. PwC has put together a 20 page report that highlights four types of disruptions and potential situations arising from change and the forces behind them.

Source: [Pwc.com](#) (2016)

## IT SPENDING

### Gartner: IT Spending Will Hit \$3.5 Trillion In 2017



Source: Curtis Franklin Jr./InformationWeek  
Gartner shared at its recent Symposium/ITxpo that IT expenditure for 2017 will increase about 3% to US\$3.5 trillion. The growth in spending could be attributed to the Brexit, where companies in Europe may invest in software and hardware to overtake London as a leading financial hub.

Source: [Information Week](#) (20 October 2016)

## NANOTECHNOLOGY

### Growing gold: Researchers develop gold nanowires for biomedical procedures



Source: IOPscience  
Traditional surgical tools fail to be capable of gaining direct access to cells. To address this issue, researchers designed a device featuring [gold nanowires](#) that can penetrate cells directly. This is useful in surgery at the cellular level, such as neurosurgery. More details at [Applied Physics Letters](#) & [IOP Science](#).

Source: [Phys.org](#) (19 October 2016)

## NATURAL RESOURCES

### Bacteria Could Make Nuclear Waste Repositories Safer

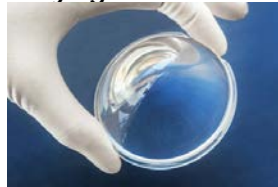


Steel canisters used to store nuclear waste will corrode over time and release hydrogen gas. Researchers discovered that a natural occurring microbial community of seven bacteria which live hundreds of metres underground could help remove the hydrogen gas and thus prevent radioactive leaks. See [video](#).

Source: [IEEE GlobalSpec](#) (22 October 2016)

## OPTICS

### New antireflective coating reduces stray light and reflections



A [cutting-edge anti-reflective coating](#) designed to address an inherent issue of plastic lenses reflecting light. The coating minimizes the reflection of light and decreased the plastic refractive index to 1.1, making it closer to 1, the refractive index of air.

Source: [Sciencedaily](#) (21 October 2016)

## RENEWABLES

### Can solar save the grid?



As the use of solar systems is expanding, this smart inverter with virtual oscillator control capabilities can stabilize the grid during disturbances, so as to prevent a massive blackout from happening.

Source: [IEEE Spectrum](#) (November 2016)

## ROBOTICS

### When the Teaching Assistant Is a Robot



Faculty members in various higher education institutions are exploring the use of "intelligent agents" in their classes. This could save time spent on simple queries and allow for quality one-to-one interaction with students instead.

Source: [The Chronicle of Higher Education](#) (23 October 2016)

## SUSTAINABILITY

### This Startup Is Harvesting Wild Algae to Make Your Next Pair of Sneakers



An American company, Bloom, harvests cyanobacteria that are a type of blue-green algae, to produce [foam](#) that can improve traction on shoe soles. This innovative idea also helps prevent these poisonous algae from jeopardizing the health of aquatic organisms. Also, check out its [patent](#).

Source: [Smithsonian.com](#) (21 October 2016)

## TECHNOLOGICAL SECURITY

### What is a Distributed Denial-of-Service Attack and How Did it Break Twitter?



Find out what DDoS is and how hackers were able to bring down Twitter, Reddit and Netflix by infecting and controlling a network of computers (botnet) through the use of malware. With this botnet, hackers could crash a website and user access is not possible.

Source: [IEEE Spectrum](#) (21 October 2016)

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