



Siate dono  
nel mondo

# Dove ci conduce la rivoluzione tecnologica?

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26 aprile 2016

Rotary Club Gemona Friuli Collinare

# Innovazione

L'Innovazione è la dimensione applicativa di un'invenzione o di una scoperta. L'innovazione riguarda un processo o un prodotto che garantisce risultati o benefici maggiori apportando quindi un progresso sociale, anche se a volte non sempre efficace e migliorativo rispetto a ciò che va ad innovare. Il cambiamento che porta invece un peggioramento delle condizioni sociali non è innovazione, ma regresso

<https://it.wikipedia.org/wiki/Innovazione>

# Evoluzione Tecnologica

- Evoluzione tecnologica è il termine della seconda metà del XX secolo che indica la teoria degli studi su scienza e tecnologia sviluppata dal filosofo ceco Radovan Richta, volta a descrivere il processo dello sviluppo tecnologico.
- Secondo Richta e successivamente Masse Bloomfield, la tecnologia (che Richta definisce come un'«entità materiale creata dall'applicazione di sforzo mentale e fisico alla natura al fine di ottenere un certo valore») evolve in tre stadi: strumenti, macchine, automazione. Questa evoluzione, afferma, segue due tendenze: sviluppo e implicazioni teoriche.

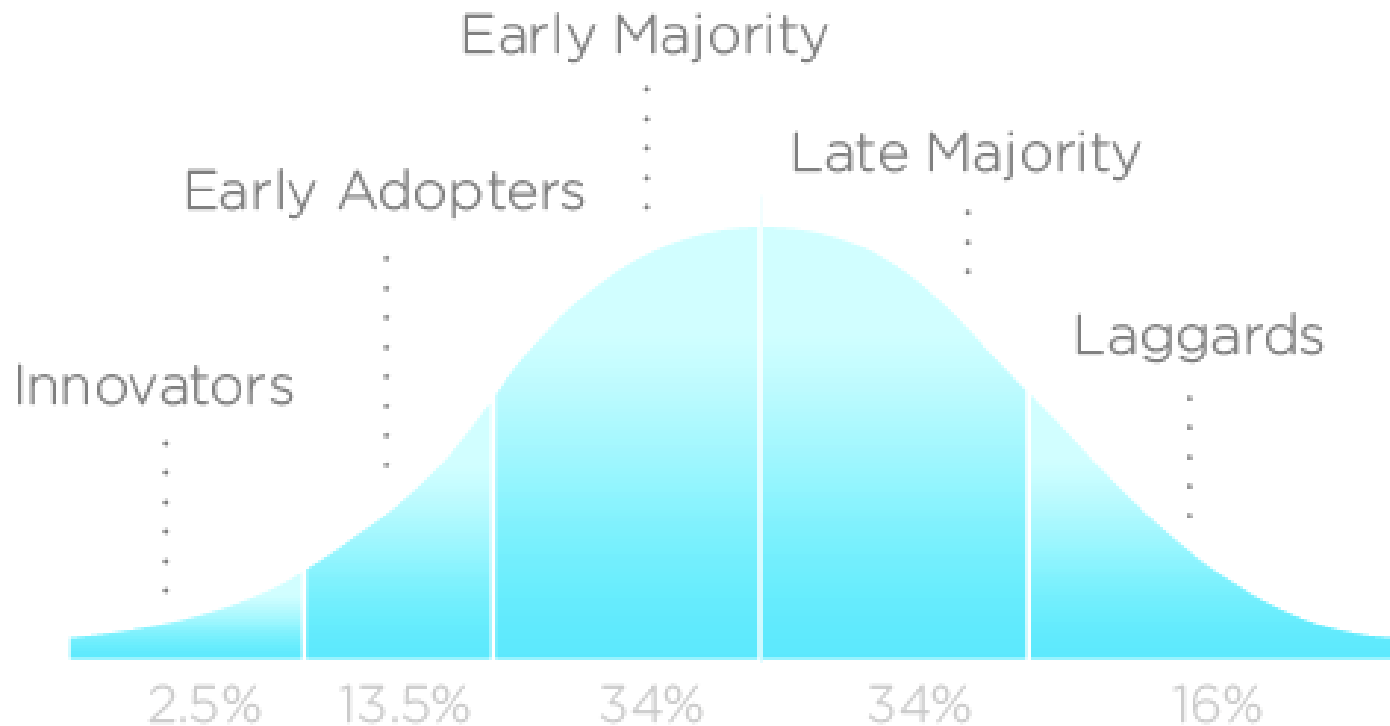
[https://it.wikipedia.org/wiki/Evoluzione\\_tecnologica](https://it.wikipedia.org/wiki/Evoluzione_tecnologica)

# Technology Adoption Life Cycle

- Il grafico (nella slide seguente) riassume le categorie:
- **innovatori** – posseggono aziende più grandi, sono più istruiti, più ricchi e più orientati al rischio
- **early adopters** - più giovani, più istruiti, tendono ad essere leader di comunità, meno abbienti degli innovatori
- **early majority** - più conservatori, ma aperti a nuove idee, attivi nella comunità ed hanno influenza su coloro che frequentano
- **late majority** - più anziani, meno istruiti, piuttosto conservatori e meno socialmente attivi
- **Laggards** - molto conservatori, posseggono piccole aziende e poco capitale, più anziani e meno istruiti

[https://en.wikipedia.org/wiki/Technology\\_adoption\\_life\\_cycle](https://en.wikipedia.org/wiki/Technology_adoption_life_cycle)

# Technology Adoption Life Cycle



## INNOVATION ADOPTION LIFECYCLE

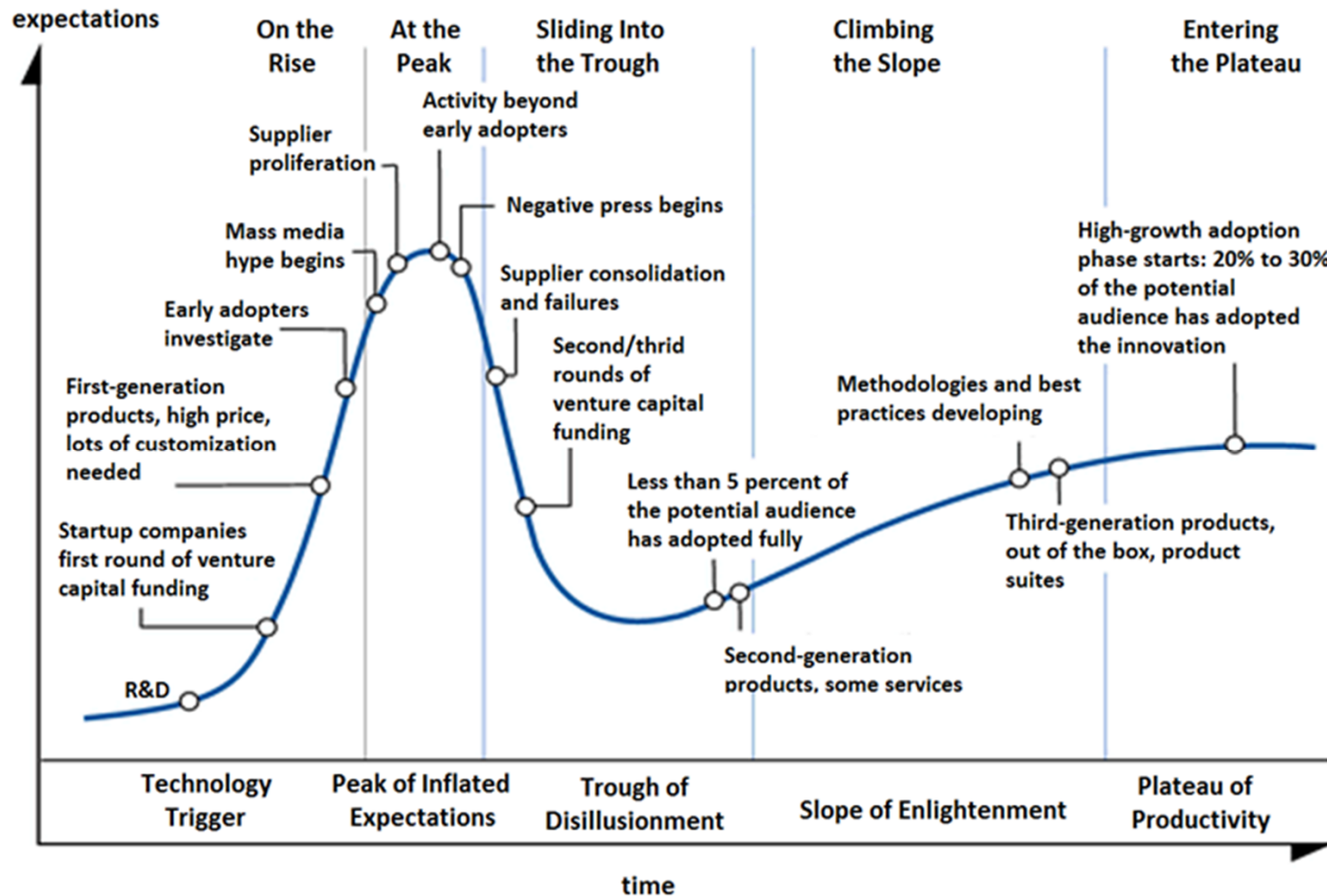
[https://en.wikipedia.org/wiki/Technology\\_adoption\\_life\\_cycle](https://en.wikipedia.org/wiki/Technology_adoption_life_cycle)

# Hype Cycle

- Il modello Hype Cycle (lett. ciclo dell'esagerazione) è una metodologia sviluppata da Gartner, società di consulenza, ricerca e analisi nel campo dell'Information Technology, per rappresentare graficamente la maturità, l'adozione e l'applicazione di specifiche tecnologie.
- L'Hype Cycle di Gartner è articolato in cinque fondamentali fasi del ciclo di vita di una tecnologia.

[https://en.wikipedia.org/wiki/Hype\\_cycle](https://en.wikipedia.org/wiki/Hype_cycle)

# Hype Cycle



[https://en.wikipedia.org/wiki/Hype\\_cycle](https://en.wikipedia.org/wiki/Hype_cycle)

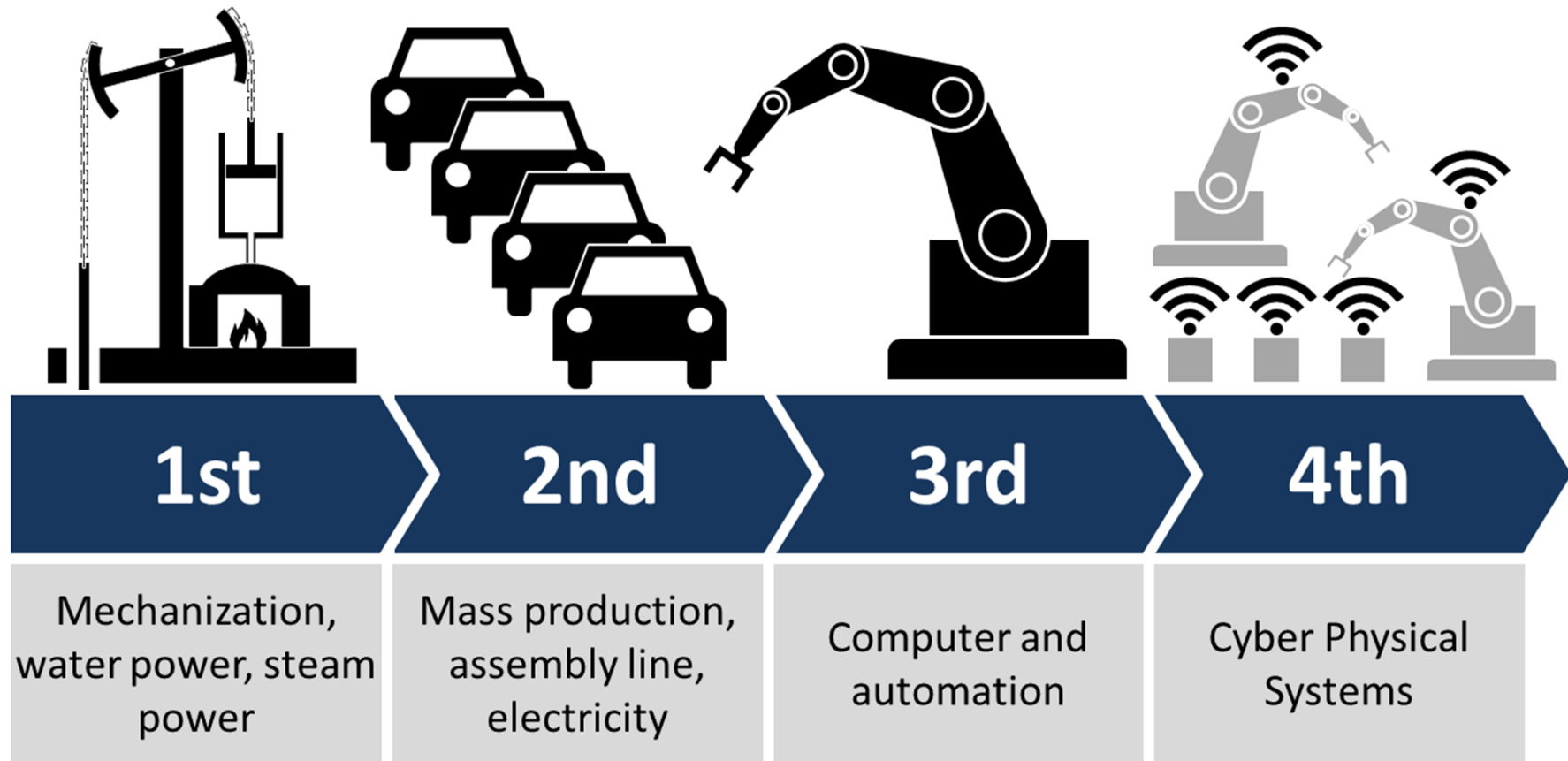
# 4th Industrial Revolution

- Industry 4.0, Industrie 4.0 o la quarta rivoluzione industriale , è un termine collettivo che comprende l'automazione contemporanea, lo scambio di dati e le tecnologie di produzione. Era stato definito come «un termine collettivo per tecnologie e concetti» quali i Sistemi Cyber-fisici, l'Internet delle cose e l'Internet di servizi .

[https://en.wikipedia.org/wiki/Industry\\_4.0](https://en.wikipedia.org/wiki/Industry_4.0)



# 4th Industrial Revolution



[https://en.wikipedia.org/wiki/Industry\\_4.0](https://en.wikipedia.org/wiki/Industry_4.0)

# World Economic Forum 2016

## Mastering Hypergrowth



Published

Thursday 28 April 2016

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Report Reader



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### Mastering Hypergrowth (In Collaboration with EY)

The Fourth Industrial Revolution is creating enterprise opportunities at a staggering rate. The impact of technology on global business has opened the door to business model innovation, redistribution of talent, new forms of stakeholder management and massive market expansion.

<https://www.weforum.org/events/world-economic-forum-annualmeeting-2016>

<https://www.weforum.org/reports/mastering-hypergrowth>

# La Quarta Rivoluzione Industriale








<http://it.euronews.com/2016/01/20/a-davos-i-vantaggi-e-i-rischi-della-quarta-rivoluzione-industriale/>

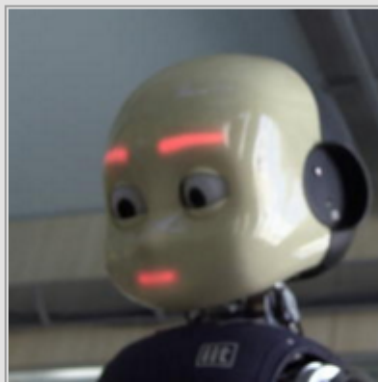
# Rivoluzione 4.0

Trasmissione Report del 25/10/2015

## RIVOLUZIONE 4.0

Di Michele Buono - **Economia**

**MI place** Piace a 148 persone. Di' che ti piace prima di tutti i tuoi amici.      ShareThis



*Collaborazione di Andrea De Marco e Filippo Proietti*

[English version below](#)

Industria 4.0 è la quarta rivoluzione industriale, quella dell'interconnessione e dei sistemi intelligenti: la fabbrica che fa dialogare i macchinari, gli uomini, e i prodotti. Sistemi di fabbriche collegate in rete che creano un unico processo produttivo.

Si razionalizza così la produzione. Si può personalizzare un prodotto, produrre in modo flessibile seguendo la domanda, senza più eccessi, magazzini pieni e invenduto: cioè l'anticamera della crisi.

Si sa che la crescita, i cambiamenti globali, hanno sempre ruotato intorno alle grandi innovazioni. e spaventano. In questo momento siamo ancora sull'onda lunga delle innovazioni

<http://www.report.rai.it/dl/Report/puntata/ContentItem-99470f20-8984-429a-a6c7-b3d27fa42e3a.html>

# Gartner Group Hype Cycle for Emerging Technologies 2015

Figure 1. Hype Cycle for Emerging Technologies, 2015



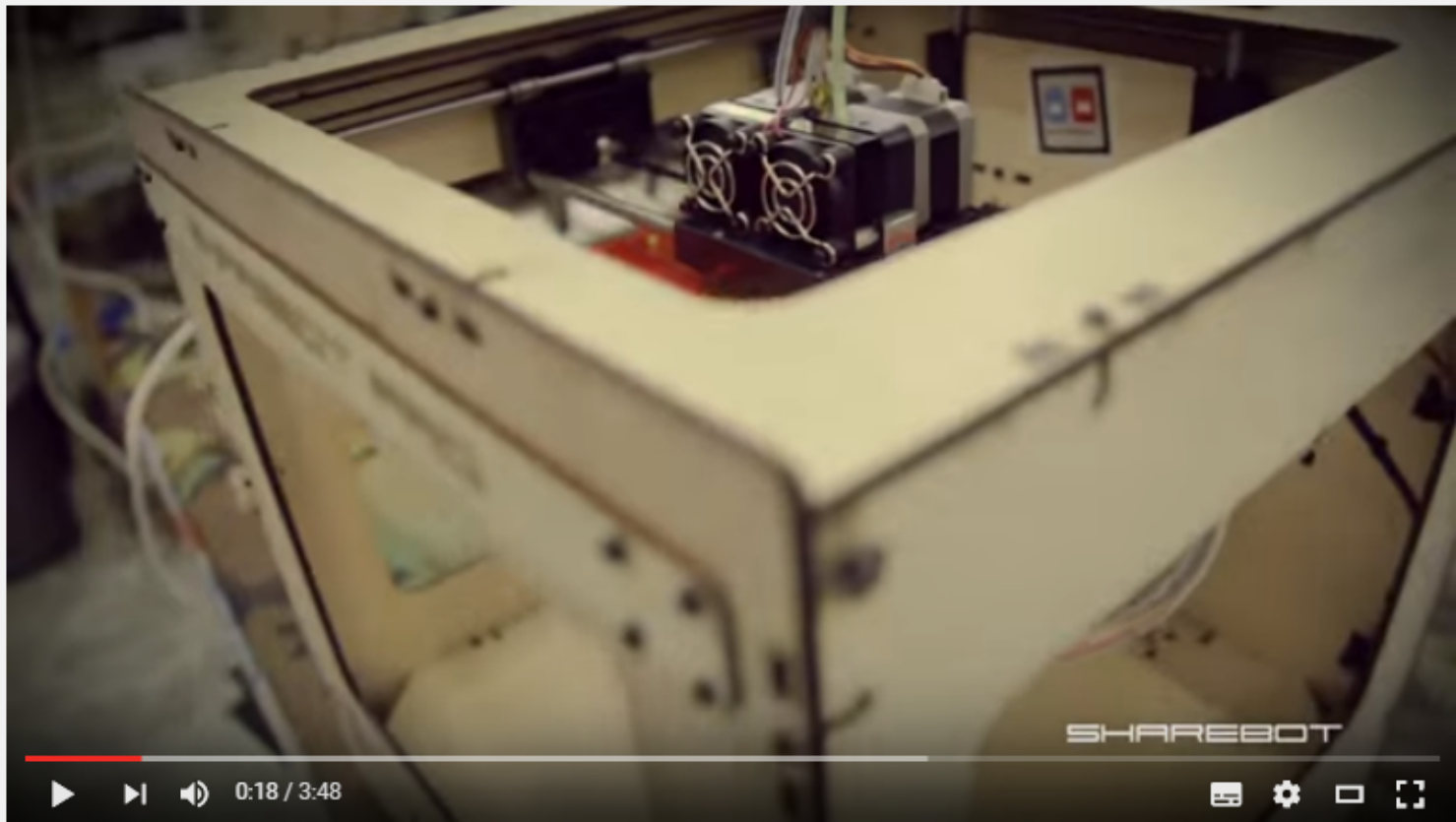
Source: Gartner (August 2015)

<http://www.gartner.com/newsroom/id/3114217>

# 3D PRINTING



# Sharebot



Sharebot Pro, la Stampante 3D italiana

<https://www.youtube.com/watch?v=JfKb5F8cJFo>

# MakerBot Thingiverse

The screenshot shows the MakerBot Thingiverse website interface. At the top, there is a blue banner with the text "THINGIVERSE APPS" and the subtext "Learn how to use them. Learn how to make them." Below the banner, there are four navigation dots, with the first one filled. The main content area is divided into two columns. The left column is titled "Global Feed" and "Latest Thingiverse Activity", listing recent user actions such as "marcelsphone liked Fan Shroud for Geeetech Alumi...", "amanda\_marshall liked Boxx\_Insert with Divisions", "AndyDittmar collected GRAMiPhone - iPhone 6 Gramop...", "dronedeveloper collected WA5VJB Log Periodic Antenn...", "randeals liked Case for LCR-T4 component tester", and "judoka77330 liked Universal Camera/Phone Stand". The right column is titled "Featured Collections" and "Download and print today", displaying a grid of eight featured items: "Flowers", "ESB", "GoPro", "For The Birds", "Violins", "Fractals", "Adorabots", and "Upcycle". A "see more >" link is located to the right of the "Featured Collections" header.

**THINGIVERSE APPS**  
Learn how to use them.  
Learn how to make them.

**Global Feed**  
Latest Thingiverse Activity

- marcelsphone liked Fan Shroud for Geeetech Alumi...
- amanda\_marshall liked Boxx\_Insert with Divisions
- AndyDittmar collected GRAMiPhone - iPhone 6 Gramop...
- dronedeveloper collected WA5VJB Log Periodic Antenn...
- randeals liked Case for LCR-T4 component tester
- judoka77330 liked Universal Camera/Phone Stand

**Featured Collections**  
Download and print today

- Flowers
- ESB
- GoPro
- For The Birds
- Violins
- Fractals
- Adorabots
- Upcycle

see more >

<http://www.thingiverse.com/>



# Airbus 3D Printing



The video player shows a close-up of a grey, 3D printed metal part with a complex, lattice-like structure. The part is mounted on a bright yellow wall. The part features the LZM logo (LZM LEHRZENTRUM MÜNCHEN) and the text 'EINFAHRT' with an arrow pointing right. On the right side of the part, there is vertical text: 'Am Schlussungabau 1d' and 'Einbaul. im Bereich Z-Metallbau'. The video player interface includes a search bar at the top, a play button, a progress bar showing 0:11 / 4:59, and various control icons at the bottom.

Airbus 3D Printing technology transformation underway

Airbus   155.689

41.662

<https://www.youtube.com/watch?v=Cy3V3KR1LWc>

# WASP

☰ YouTube IT

stress



**Caratteristiche della stampante**

**Tecnologie:**  
estrusore per calcestruzzo

**Area di stampa cilindrica:**  
Ø1500 mm - h 1500 mm

**Altezza massima di stampa:**  
1500 mm

**Massima dimensione raggiungibile:**  
triangolo di base 150 cm

**Diametro ugello:**  
25 mm/ugello intercambiabile

**Risoluzione layer:**  
1 mm < 1.5 mm

**Precisione assi:**  
X,Y 1.0 mm  
Z 1.5mm

**Velocità massima:** 20 mm/s

**Materiali utilizzabili:**  
calcestruzzo  
malte cementizie  
fibre PP

0:16 / 2:07

STRESS - STAMPA 3D - per materiali da costruzione

str Stress Scarl

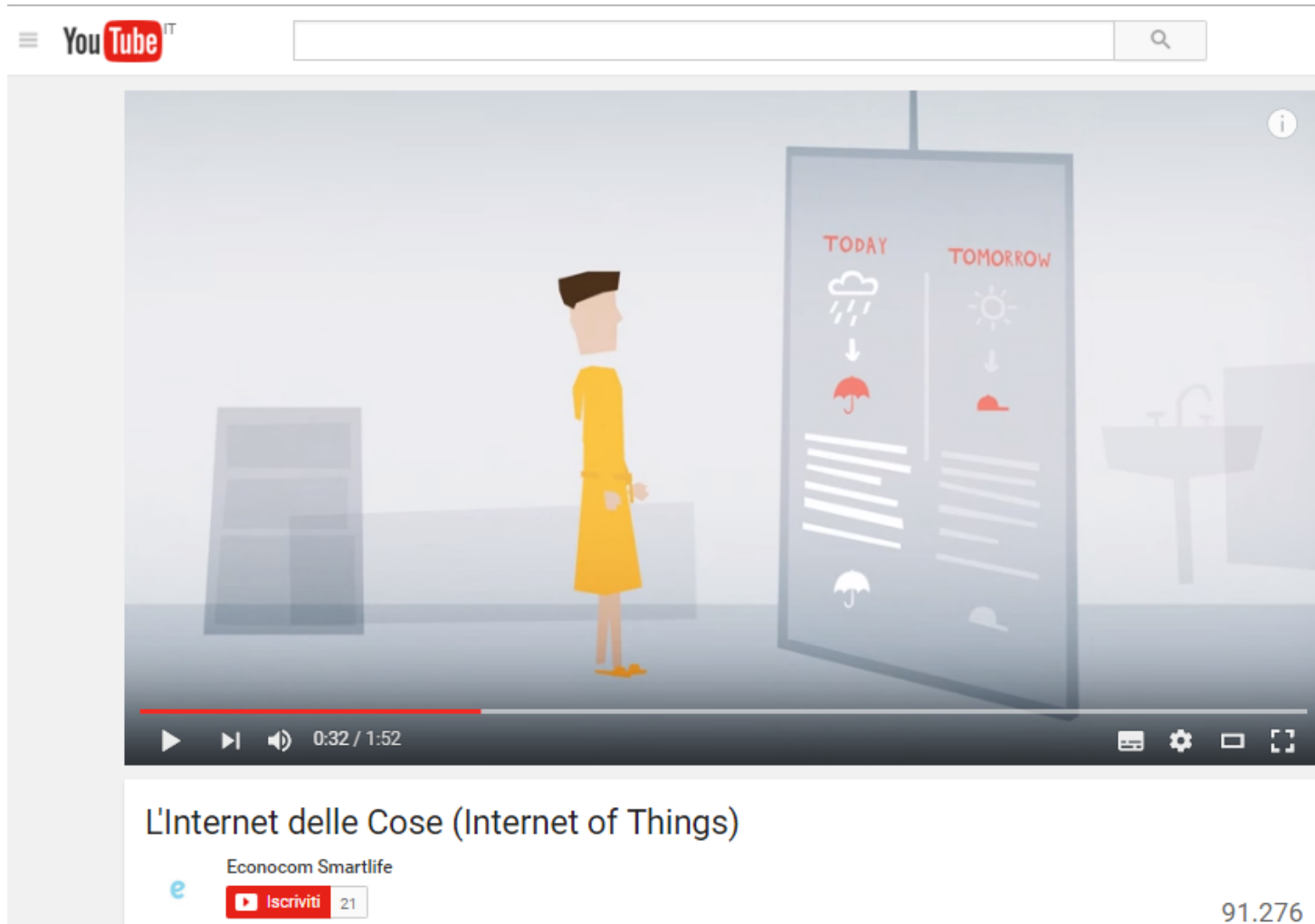
Iscriviti 55

44.787

<https://www.youtube.com/watch?v=TkQUJOmF2Cg>

# **IOT (INTERNET OF THINGS)**

# Econocom



The image shows a YouTube video player interface. At the top, there is the YouTube logo and a search bar. The video content depicts a woman in a yellow dress standing in a smart home environment. A large, semi-transparent digital display in the center shows weather forecasts for 'TODAY' and 'TOMORROW'. The 'TODAY' forecast shows a cloudy day with rain, indicated by a cloud with raindrops and a red umbrella icon. The 'TOMORROW' forecast shows a sunny day, indicated by a sun icon and a red hat icon. Below the weather icons are several horizontal lines representing text. The video player controls at the bottom show a progress bar at 0:32 / 1:52, along with play, volume, and other standard controls. Below the video player, the video title 'L'Internet delle Cose (Internet of Things)' is displayed, followed by the channel name 'Econocom Smartlife', a red 'Iscriviti' button with '21' subscribers, and a view count of '91.276'.

<https://www.youtube.com/watch?v=ukpDC0wxy7Y>

# Smart Living



Life Simplified with Connected Devices



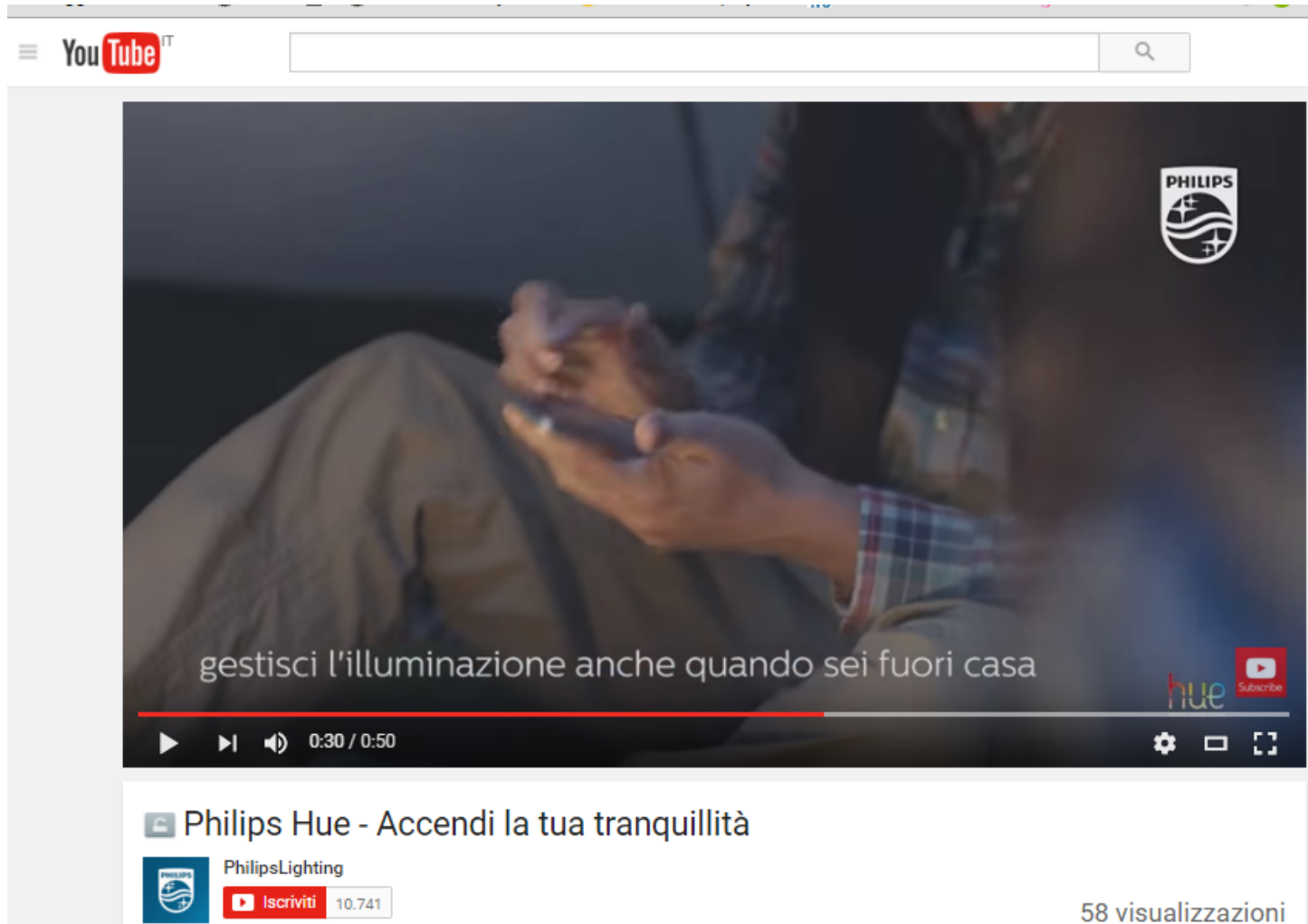
Kelly Flanagan



55.722

<https://www.youtube.com/watch?v=NjYTzvAVozo&list=PLI-15sUN2G4eEY2VOqxMEazASNrIMF5FP>

# Philips HUE



The image shows a screenshot of a YouTube video player. At the top left, the YouTube logo is visible. The video frame shows a person's hands holding a smartphone, with a Philips logo in the top right corner. The video title is "Philips Hue - Accendi la tua tranquillità". The channel name is "PhilipsLighting" with a subscriber count of 10,741. The video has 58 views. The video player interface includes a progress bar at 0:30 / 0:50, a play button, a volume icon, and a "hue" logo with a "Subscribe" button in the bottom right corner.

gestisci l'illuminazione anche quando sei fuori casa

PHILIPS

PhilipsLighting

10.741

58 visualizzazioni

<https://www.youtube.com/watch?v=QMGMitjMxgl>

# HAPI Fork



The image shows a YouTube video player interface. At the top left is the YouTube logo. A search bar is located at the top right. The video content features a white HAPI Fork standing upright against a light blue background. Two labels with leader lines point to specific parts of the fork: 'Vibration alerts' points to the upper handle section, and 'LED indicators' points to a small red light at the bottom of the handle. Below the video player, the title 'Hapifork, Eat Slowly - Lose Weight - Feel Great' is displayed. To the left of the title is the channel name 'Hapilabs' with a profile picture of a red Santa hat. Below the channel name is a red 'Iscriviti' button with '156' subscribers. To the right of the channel information, the view count '84.050' is shown. The video player controls at the bottom include a play button, a progress bar at 1:00 / 2:15, and icons for volume, settings, and full screen.

<https://www.youtube.com/watch?v=boM3EAuz-oU>



# Smart Egg Tray



The video player shows a person's hands pointing to a white, rectangular smart egg tray on a countertop. The tray has several compartments, some of which contain white eggs. A glass bowl is visible to the left of the tray. The video player interface includes a search bar at the top, a play button, a progress bar showing 0:28 / 0:56, and a volume icon. Below the video, the title "Introducing Egg Minder by Quirky" is displayed, along with the Quirky logo and a red "Iscriviti" button. The view count "34.944" is shown in the bottom right corner.

Introducing Egg Minder by Quirky

Quirky

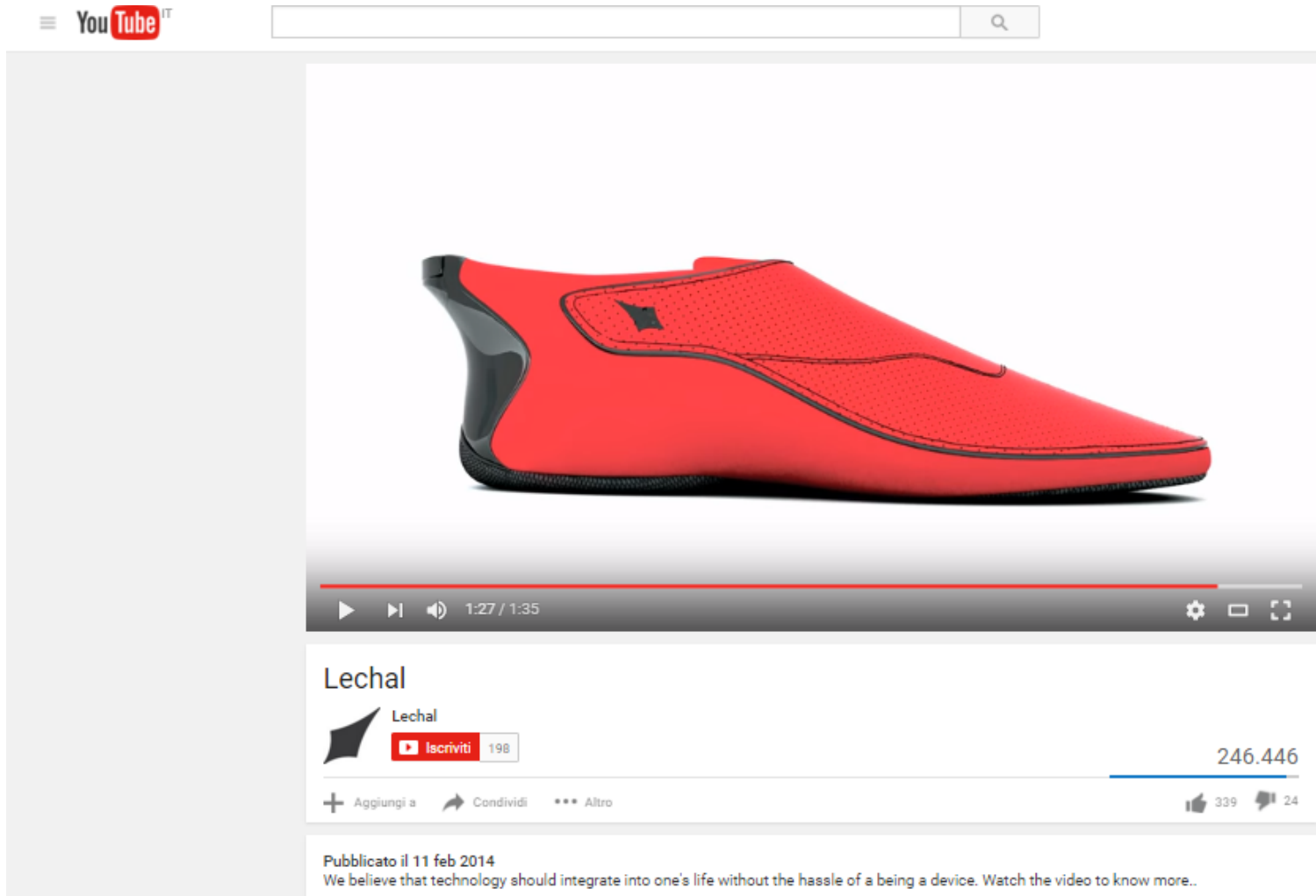
Iscriviti

34.944

[https://www.youtube.com/watch?v=\\_9tVckcCz-c](https://www.youtube.com/watch?v=_9tVckcCz-c)



# Lechal Smart Shoes

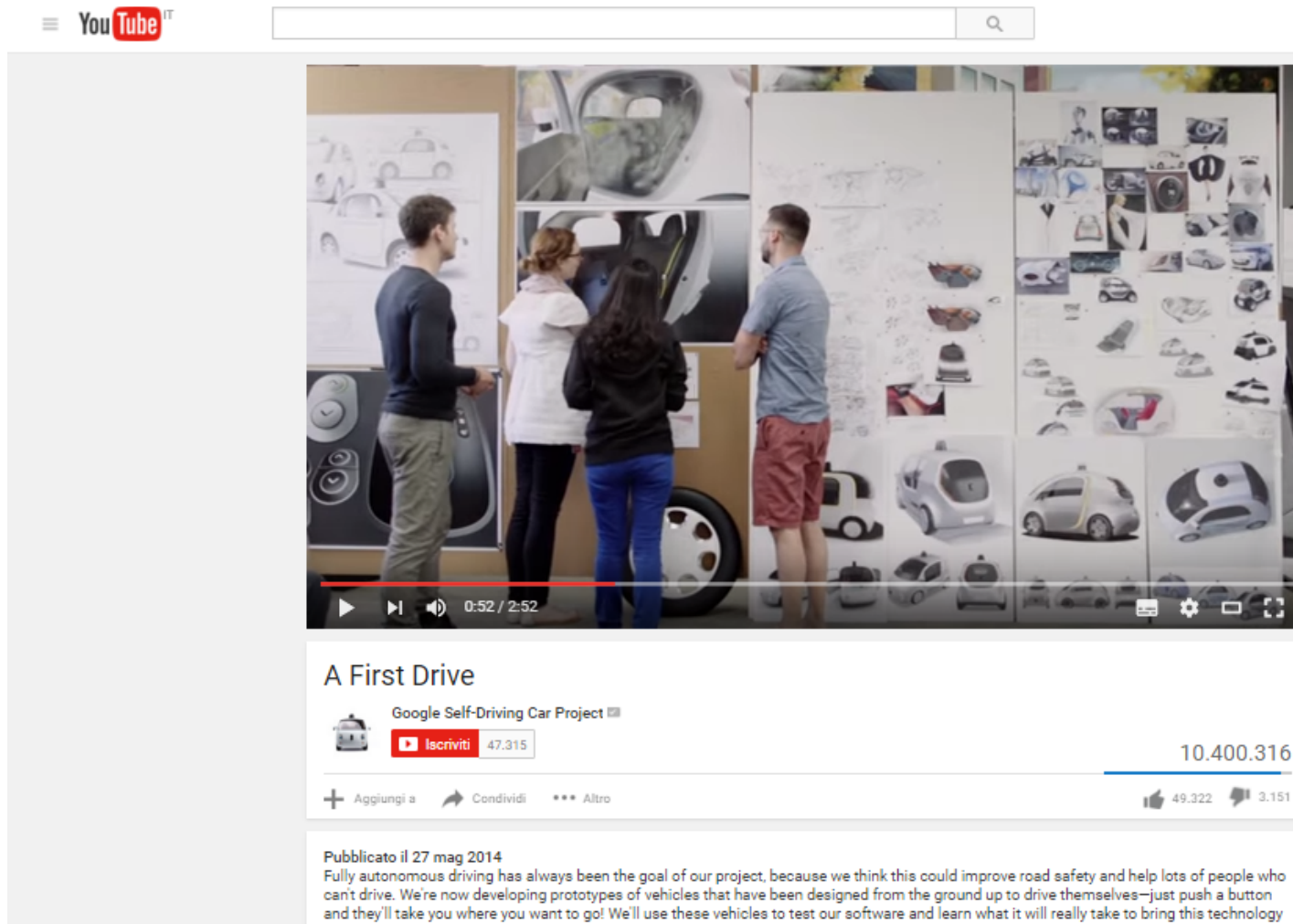


The image is a screenshot of a YouTube video player. At the top left, the YouTube logo is visible. A search bar is located at the top center. The main content area shows a side view of a red, slip-on smart shoe with a black sole and a small black logo on the side. Below the video player, the channel name 'Lechal' is displayed, along with a profile picture, a 'iscriviti' button with '198' subscribers, and a view count of '246.446'. There are also icons for 'Aggiungi a', 'Condividi', and 'Altro'. At the bottom, the video was published on '11 feb 2014' and has a description: 'We believe that technology should integrate into one's life without the hassle of a being a device. Watch the video to know more..'

<https://www.youtube.com/watch?v=ucK6jhdRIUY#t=50.706314>

# **AUTONOMOUS VEHICLE**


# Google Car



The image shows a YouTube video player interface. At the top left is the YouTube logo. A search bar is located at the top center. The video content shows four people standing in a room, looking at large wall-mounted displays. The displays feature various images and diagrams related to the Google Self-Driving Car Project, including car designs, sensor locations, and maps. The video player controls at the bottom show a progress bar at 0:52 / 2:52. Below the video, the title "A First Drive" is displayed, followed by the channel name "Google Self-Driving Car Project" and a subscriber count of 47,315. The video has 10,400,316 views, 49,322 likes, and 3,151 comments. The video was published on May 27, 2014. The description below the video reads: "Fully autonomous driving has always been the goal of our project, because we think this could improve road safety and help lots of people who can't drive. We're now developing prototypes of vehicles that have been designed from the ground up to drive themselves—just push a button and they'll take you where you want to go! We'll use these vehicles to test our software and learn what it will really take to bring this technology

<https://www.youtube.com/watch?v=CqSDWoAhvLU>

# Daimler Benz



YouTube IT

YOU CAR

0:06 / 3:36

SUBSCRIBE NOW

► Mercedes Future Truck 2025 (Autonomous Driving Demo)

YouCar

420.916

3.711.967

9.315 766

Aggiungi a Condividi Altro

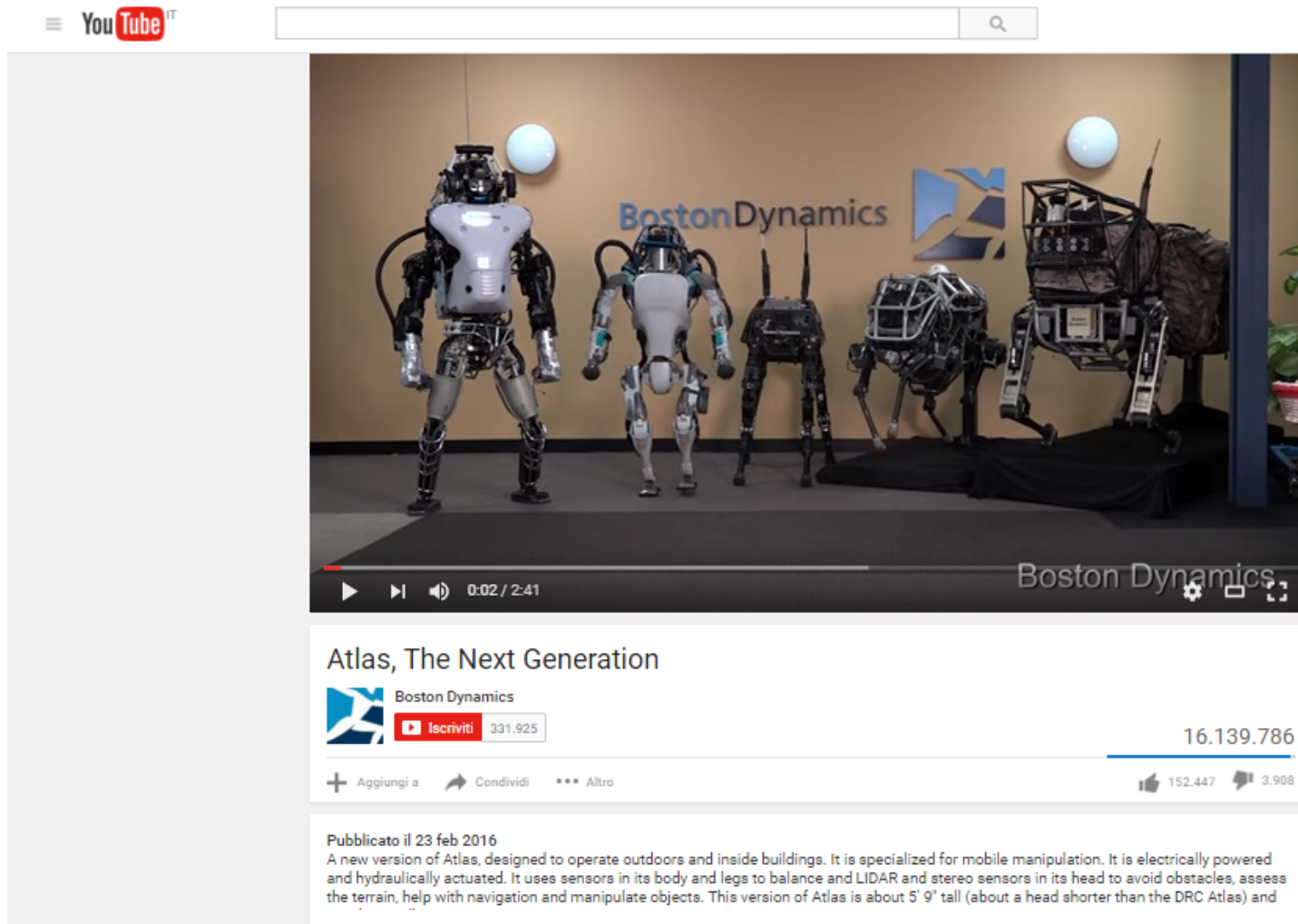
Publicato il 23 set 2014

The Mercedes-Benz Future Truck 2025 constitutes a revolution in efficiency, safety and networking, a revolution for road traffic and its infrastructure, for professional driving and for the road transport sector. This is not a new truck, but rather the key element in the interconnected transport system of the future. It is being developed as part of the "Shaping Future Transportation" initiative by Daimler Trucks to conserve

<https://www.youtube.com/watch?v=R1e9gSRBQTK>

# ROBOTICS

# Boston Dynamics



The image is a screenshot of a YouTube video player. At the top left is the YouTube logo. Below it is a search bar. The video frame shows five robots from Boston Dynamics lined up in a room with a logo on the wall. From left to right: a large white humanoid robot (Atlas), a smaller white humanoid robot, a black quadruped robot (BigDog), a smaller black quadruped robot (Spot), and a large tracked robot (BigDog). The video player interface includes a progress bar at 0:02 / 2:41, a play button, and a volume icon. Below the video frame, the title "Atlas, The Next Generation" is displayed. The channel name "Boston Dynamics" is shown with a subscriber count of 331,925. The video has 16,139,786 views, 152,447 likes, and 3,908 dislikes. The video was published on February 23, 2016. The description states: "A new version of Atlas, designed to operate outdoors and inside buildings. It is specialized for mobile manipulation. It is electrically powered and hydraulically actuated. It uses sensors in its body and legs to balance and LIDAR and stereo sensors in its head to avoid obstacles, assess the terrain, help with navigation and manipulate objects. This version of Atlas is about 5' 9" tall (about a head shorter than the DRC Atlas) and

<https://www.youtube.com/watch?v=rVIhMGQgDkY>

# Le 3 Leggi della Robotica



The image shows a screenshot of a YouTube video player. The video is titled "Isaac Asimov enuncia le Tre Leggi Della Robotica" and is uploaded by the channel "Andrea Cabassi". The video player shows a man with glasses, presumably Isaac Asimov, speaking. The video progress bar indicates it is at 0:20 out of 0:45. Below the video player, the video title is repeated, followed by the channel name "Andrea Cabassi" and a red "Iscriviti" button with "21" subscribers. To the right, it says "575 visualizzazioni". Below this, there are icons for "Aggiungi a", "Condividi", and "Altro", along with a thumbs up icon showing "7" likes and a thumbs down icon showing "0" dislikes. At the bottom, the publication date is "Pubblicato il 25 apr 2014" and the URL is "http://www.ryo.it/". Below the URL, the three laws of robotics are listed:

- Prima Legge: un robot non può recar danno a un essere umano né può permettere che, a causa del proprio mancato intervento, un essere umano riceva danno
- Seconda Legge: un robot deve obbedire agli ordini impartiti dagli esseri umani, purché tali ordini non contravvengano alla Prima Legge
- Terza Legge: un robot deve proteggere la propria esistenza, purché questa autodifesa non contrasti con la Prima o con la Seconda Legge

<https://www.youtube.com/watch?v=mYJGnaQPifw>

# Dove ci conduce la rivoluzione tecnologica?

- Introduzione
- Innovazione (<https://it.wikipedia.org/wiki/Innovazione>)
- Evoluzione Tecnologica ([https://it.wikipedia.org/wiki/Evoluzione\\_tecnologica](https://it.wikipedia.org/wiki/Evoluzione_tecnologica))
- Technology Adoption Life Cycle ([https://en.wikipedia.org/wiki/Technology\\_adoption\\_life\\_cycle](https://en.wikipedia.org/wiki/Technology_adoption_life_cycle))
- Hype Cycle ([https://en.wikipedia.org/wiki/Hype\\_cycle](https://en.wikipedia.org/wiki/Hype_cycle))
- 4th Industrial Revolution ([https://en.wikipedia.org/wiki/Industry\\_4.0](https://en.wikipedia.org/wiki/Industry_4.0))
- World Economic Forum 2016 (<https://www.weforum.org/events/world-economic-forum-annualmeeting-2016>)
- La Quarta Rivoluzione Industriale (<http://it.euronews.com/2016/01/20/a-davos-i-vantaggi-e-i-rischi-della-quarta-rivoluzione-industriale/>)
- Rivoluzione 4.0 – Trasmissione Report del 25/10/2015 (<http://www.report.rai.it/dl/Report/puntata/ContentItem-99470f20-8984-429a-a6c7-b3d27fa42e3a.html>)
- Gartner Group Hype Cycle for Emerging Technologies 2015 (<http://www.gartner.com/newsroom/id/3114217>)
- 3D Printing:
  - - ShareBot (<https://www.youtube.com/watch?v=JfKb5F8cJFo>)
  - - MakerBot Thingiverse (<http://www.thingiverse.com/>)
  - - Airbus 3D Printing (<https://www.youtube.com/watch?v=Cy3V3KR1LWc>)
  - - WASP (<https://www.youtube.com/watch?v=TkQUJOMf2Cg>)
- IoT (Internet of Things):
  - - Econocom (<https://www.youtube.com/watch?v=ukpDC0wxy7Y>)
  - - Smart Living (<https://www.youtube.com/watch?v=NjYTzvAVozo&list=PLI-15sUN2G4eEY2VOqxMEazASNrIMF5FP>)
  - - Philips HUE (<https://www.youtube.com/watch?v=QMGMitjMxgl>)
  - - HAPI Fork (<https://www.youtube.com/watch?v=boM3EAuz-oU>)
  - - Smart Egg Tray ([https://www.youtube.com/watch?v=\\_9tVckcCz-c](https://www.youtube.com/watch?v=_9tVckcCz-c))
  - Lechal Smart Shoes (<https://www.youtube.com/watch?v=ucK6jhdRIUY#t=50.706314>)
- Autonomous Vehicle:
  - - Google Car (<https://www.youtube.com/watch?v=CqSDWoAhvLU>)
  - - Daimler Benz (<https://www.youtube.com/watch?v=Rle9gSRBQTK>)
- Robotics:
  - - Boston Dynamics (<https://www.youtube.com/watch?v=rVlhMGQgDkY>)
  - - Le 3 Leggi della Robotica (<https://www.youtube.com/watch?v=mYJGnaQPfw>)
- Conclusione