

*Management, Operations & Technology*

# **Robots, Exoskeletons, and Smart Homes**

The Coming LTC Delivery Revolution



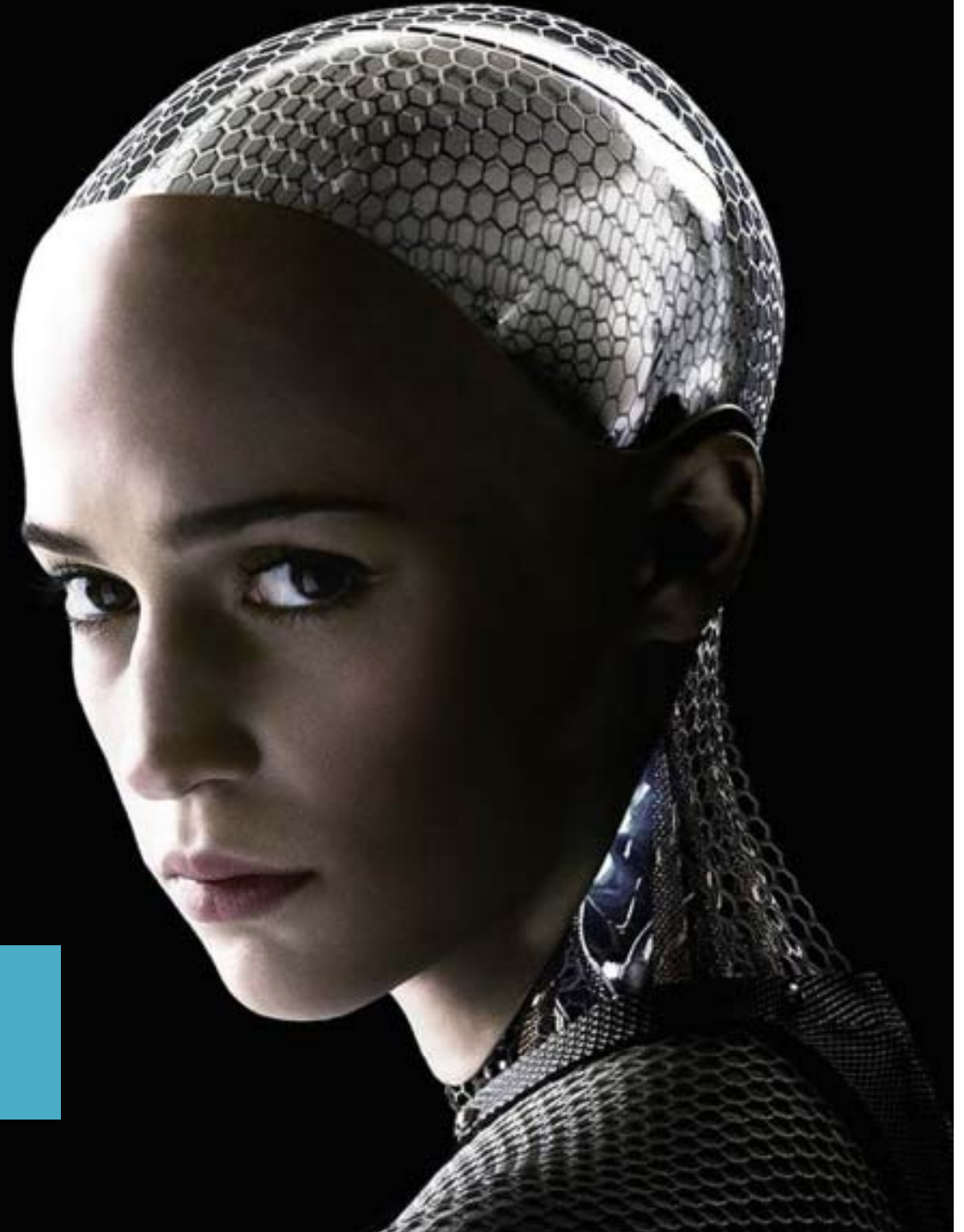
**17th Annual Intercompany Long Term Care Insurance Conference**



Isn't this just  
science fiction?

ex machina

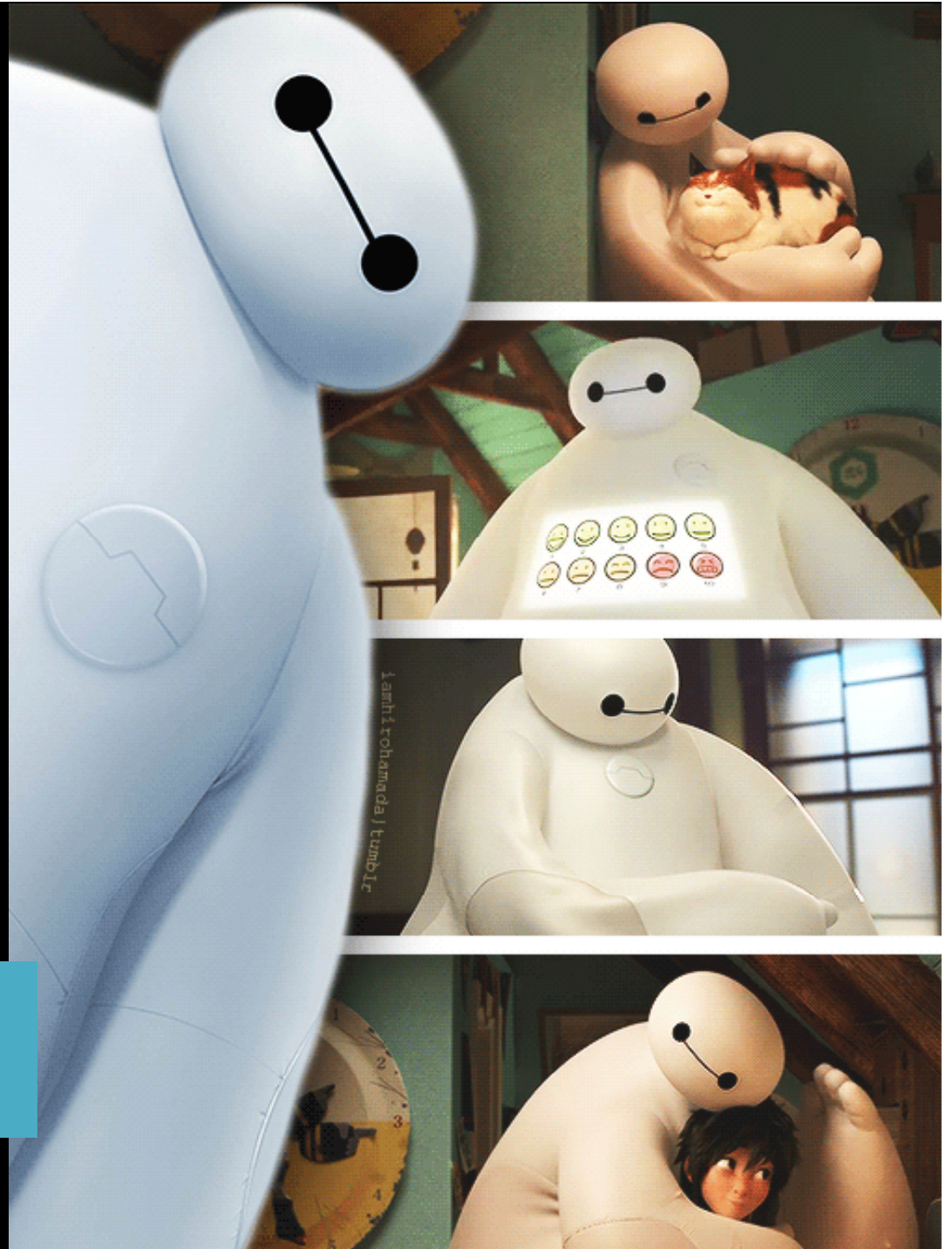
Isn't this just  
science fiction?



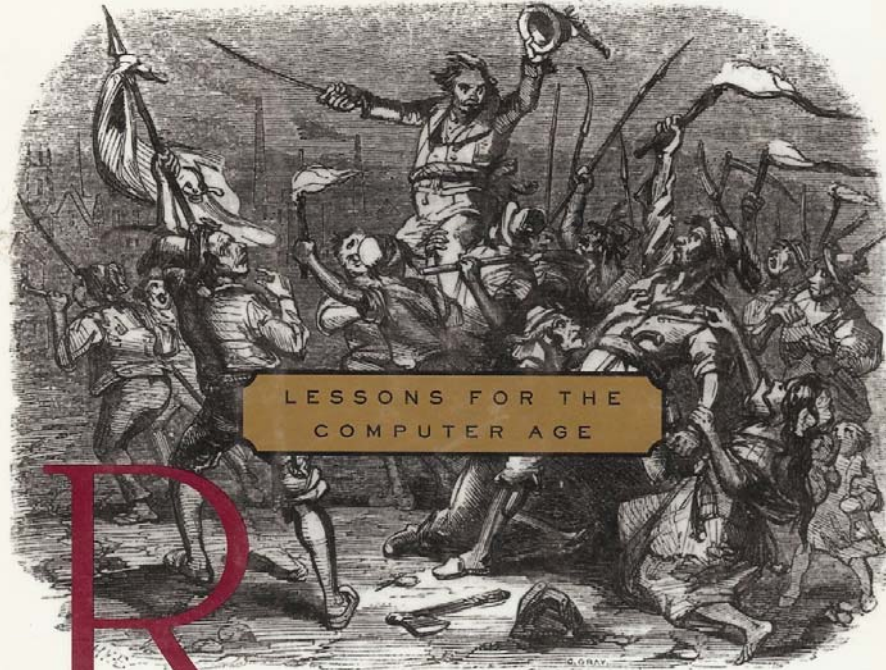


Isn't this just  
science fiction?

Isn't this just  
science fiction?



THE LUDDITES AND THEIR WAR  
ON THE INDUSTRIAL REVOLUTION



LESSONS FOR THE  
COMPUTER AGE

**R**EBELS

AGAINST

THE FUTURE

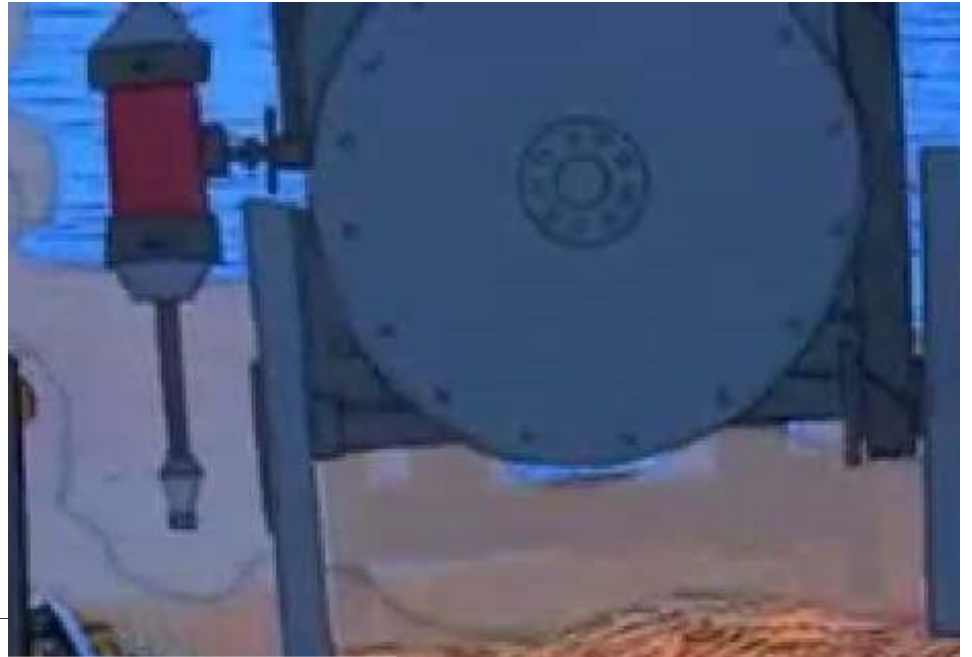
KIRKPATRICK SALE

“But our industry  
is different...”



BEFORE & AFTER





BEFORE & AFTER

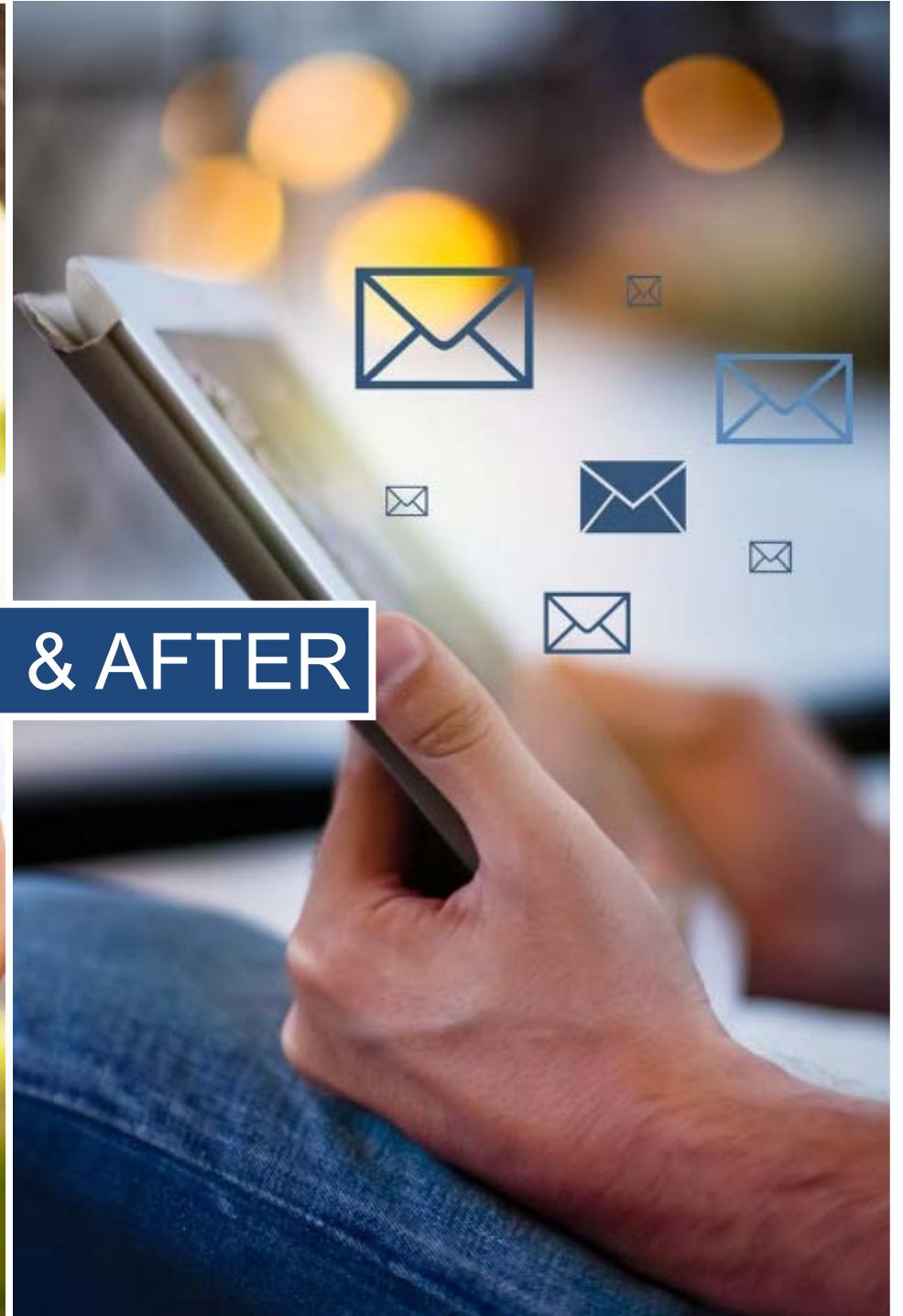




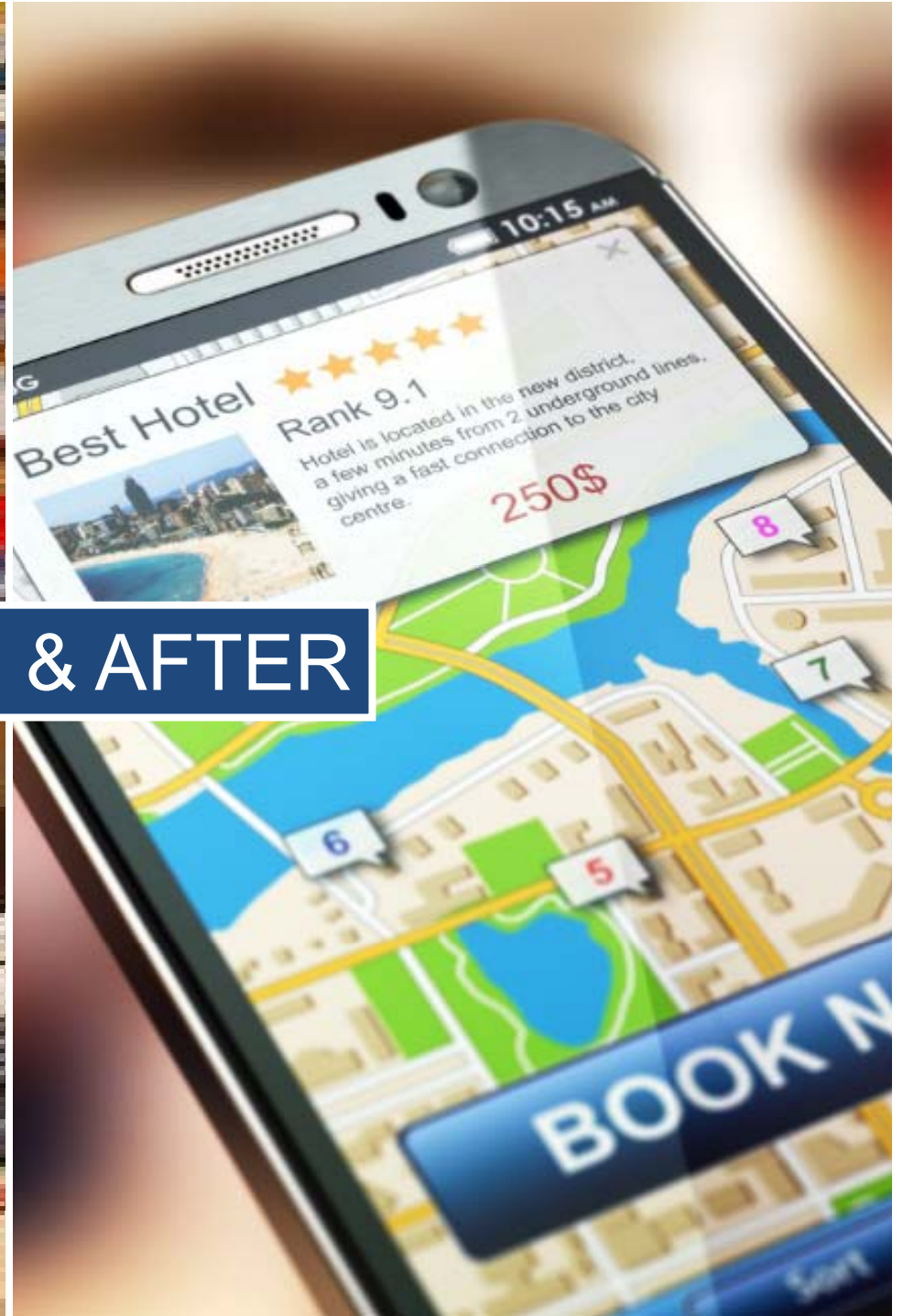


**BEFORE & AFTER**





**BEFORE & AFTER**



BEFORE & AFTER

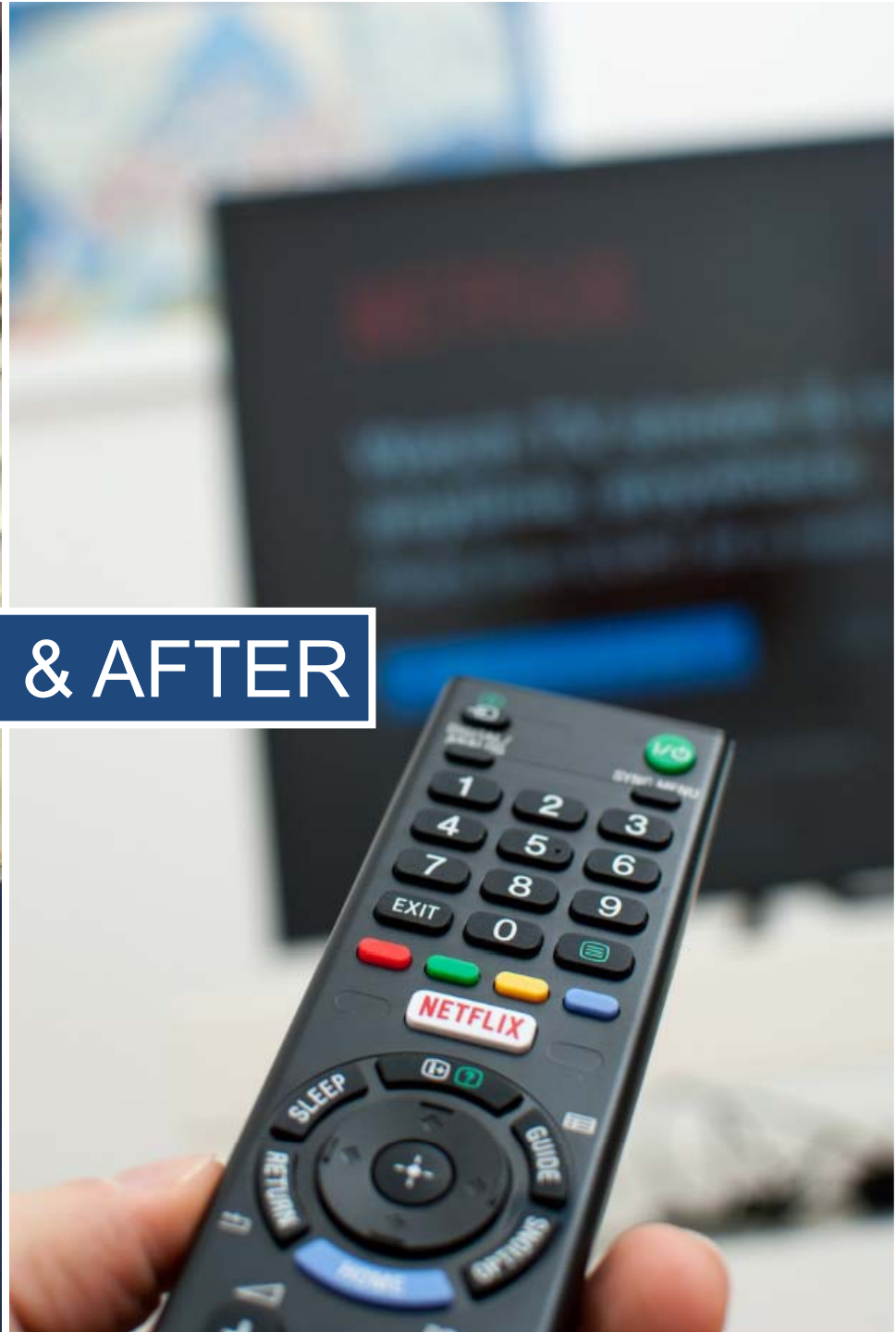


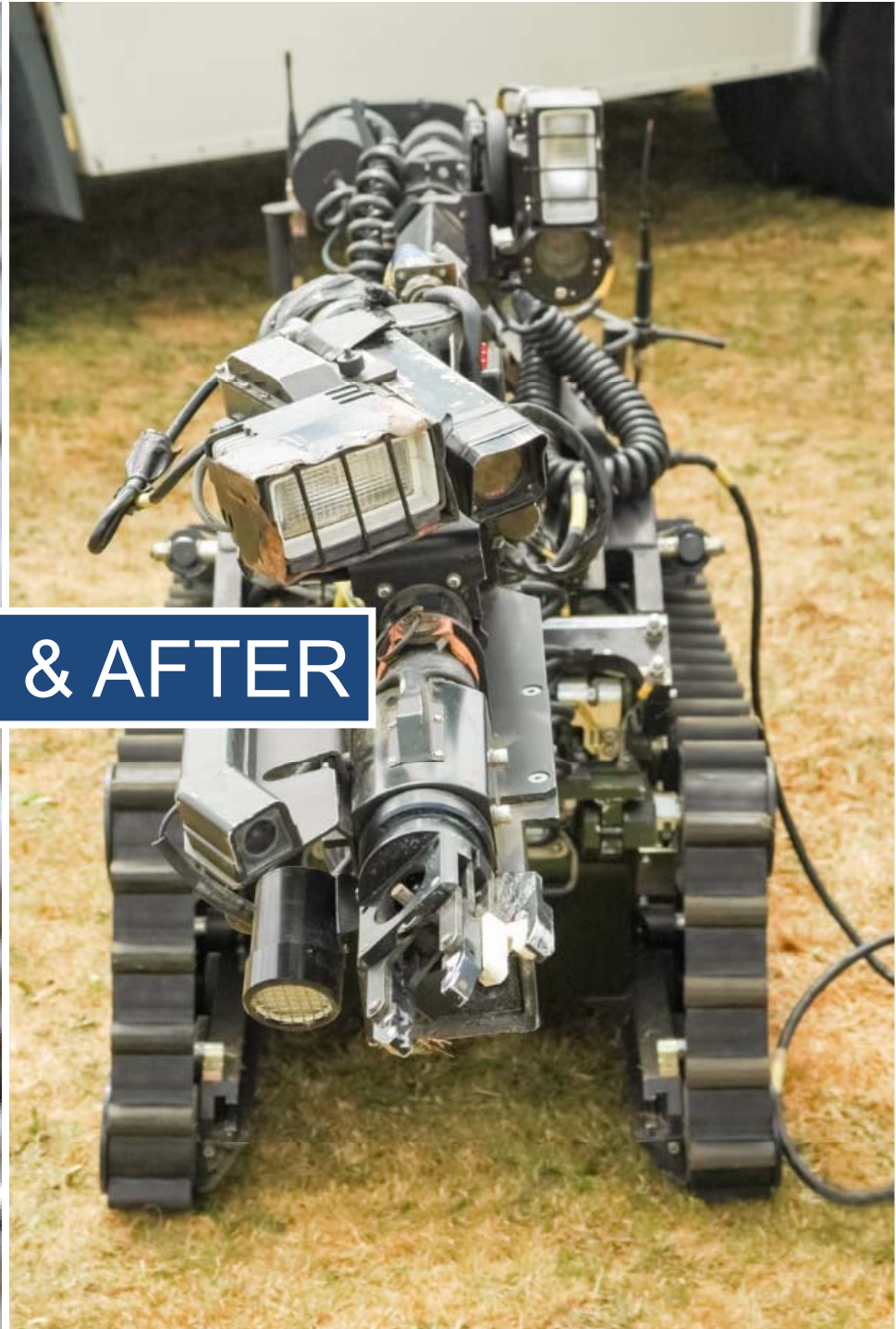
**BEFORE & AFTER**





BEFORE & AFTER





BEFORE & AFTER



BEFORE & AFTER  
COMING SOON



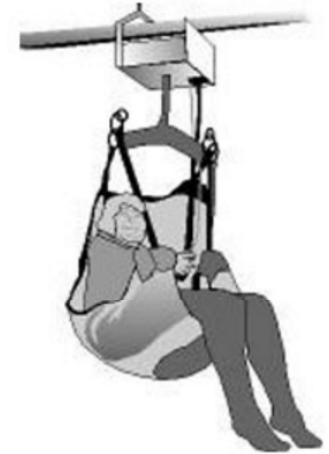


BEFORE & AFTER  
COMING SOON





# But We Already Have Assistive Technology!



**Points to Remember:** More than one caregiver is needed

# Nursing & home care is still the #1 most dangerous workplace for non-fatal injuries

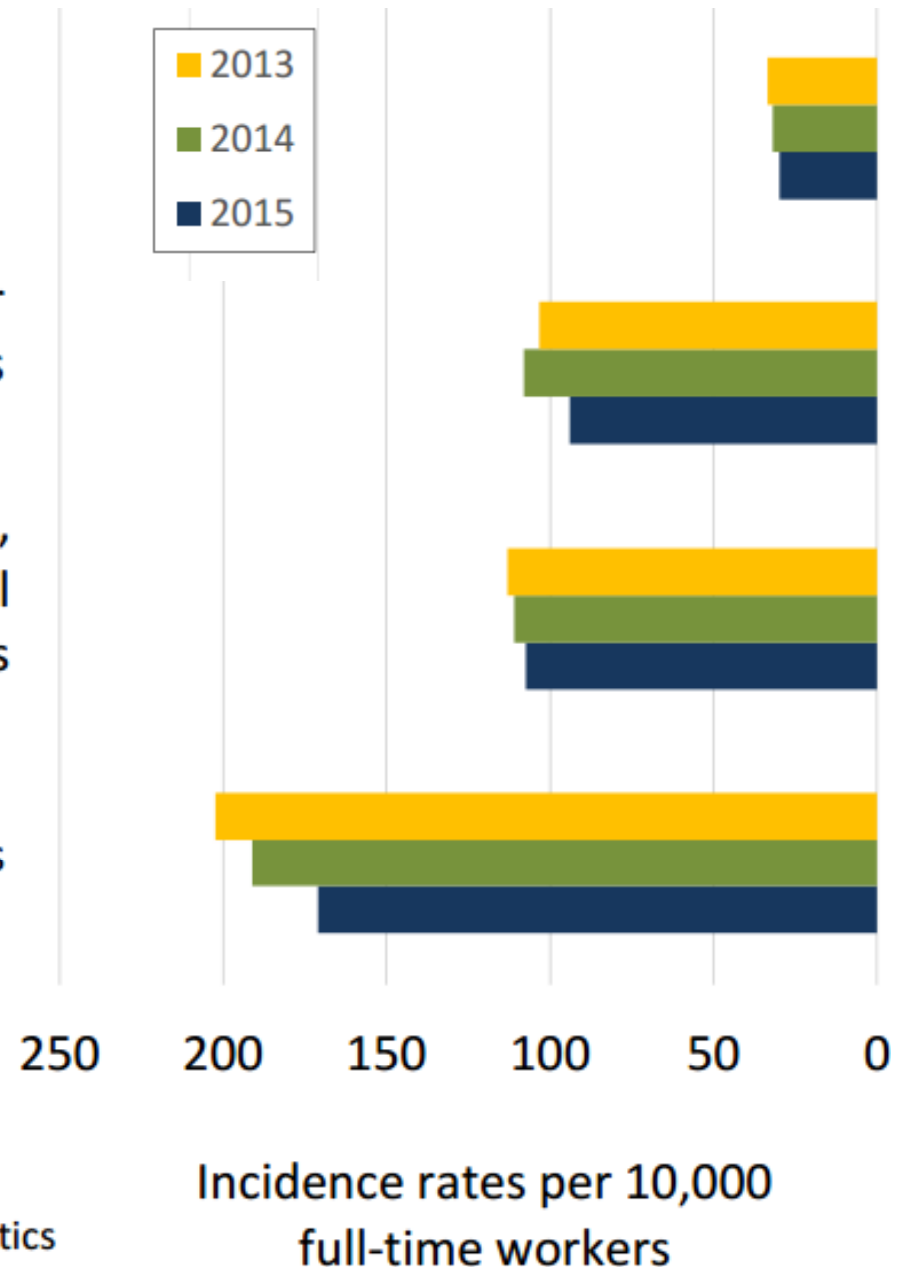


\*This is despite No Lift policies and wide availability of assistive technology

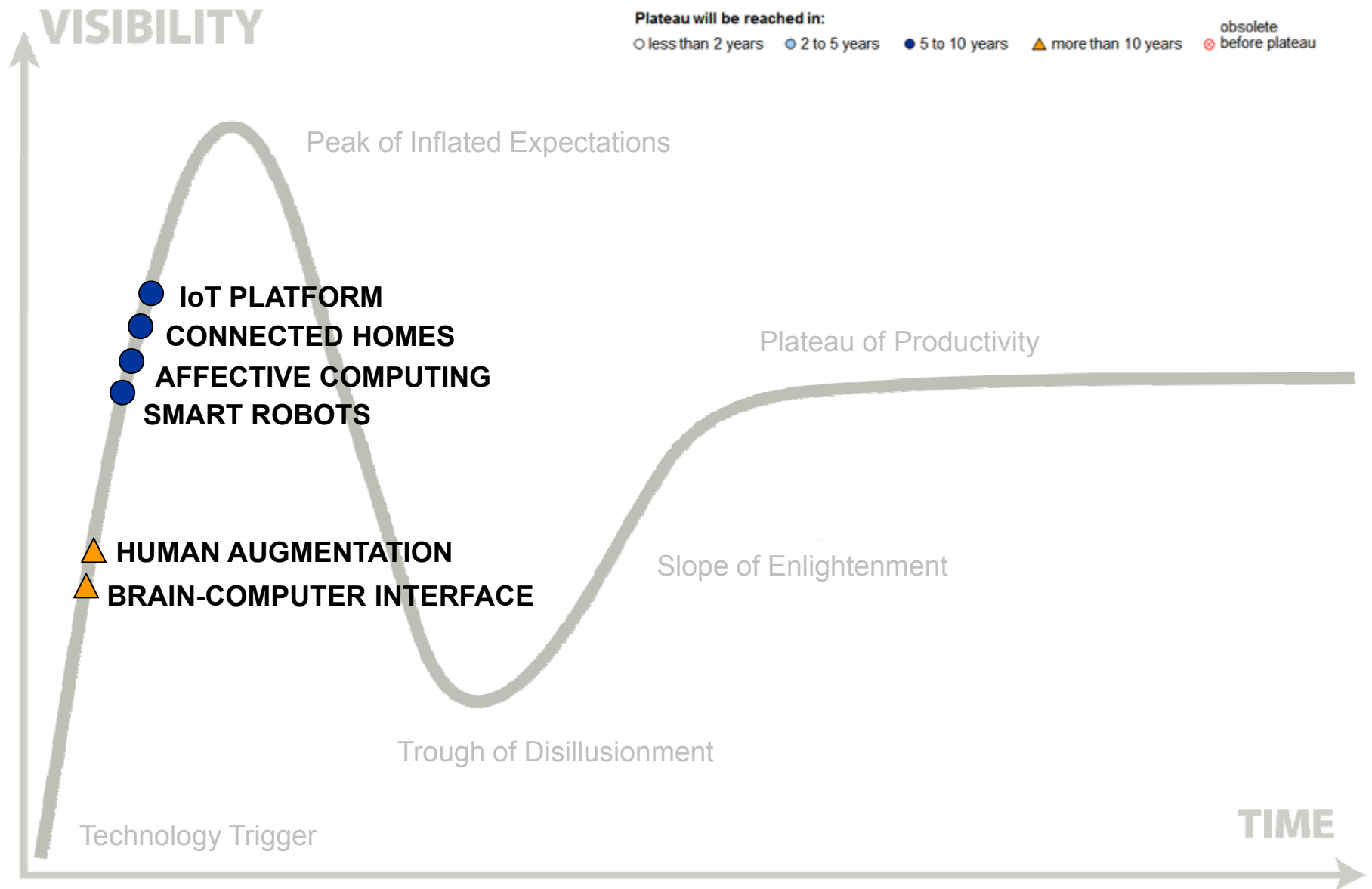
Total  
 Heavy and tractor-trailer truck drivers  
 Laborers and freight, stock, and material movers  
 Nursing assistants

## The 6 most dangerous LTC maneuvers

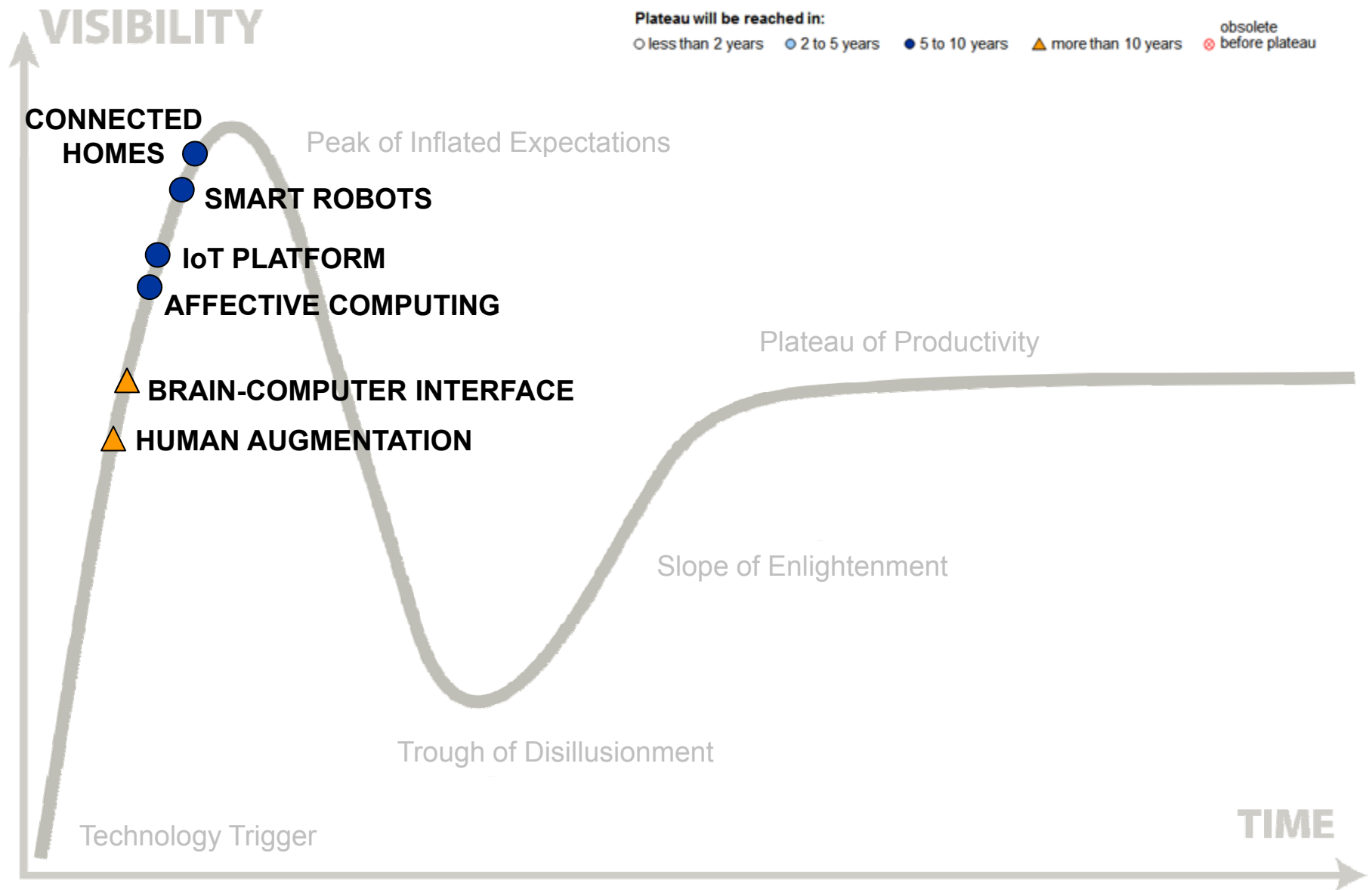
- 1) Transferring patient from toilet-to-chair.
- 2) Transferring patient from chair-to-toilet.
- 3) Transferring patient from chair-to-bed.
- 4) Transferring patient from bed-to-chair.
- 5) Transferring patient from bathtub-to-chair.
- 6) Transferring patient from chair lift-to-chair.



# Gartner Hype Cycle (2015) – Ignore at your peril...



# Gartner Hype Cycle (2016) – Ignore at your peril...



# Rise of the Care Robots



The 10<sup>th</sup> —  
WORLD CONFERENCE  
of GERONTECHNOLOGY

 CBS  
NEWS  
CBSNEWS.COM

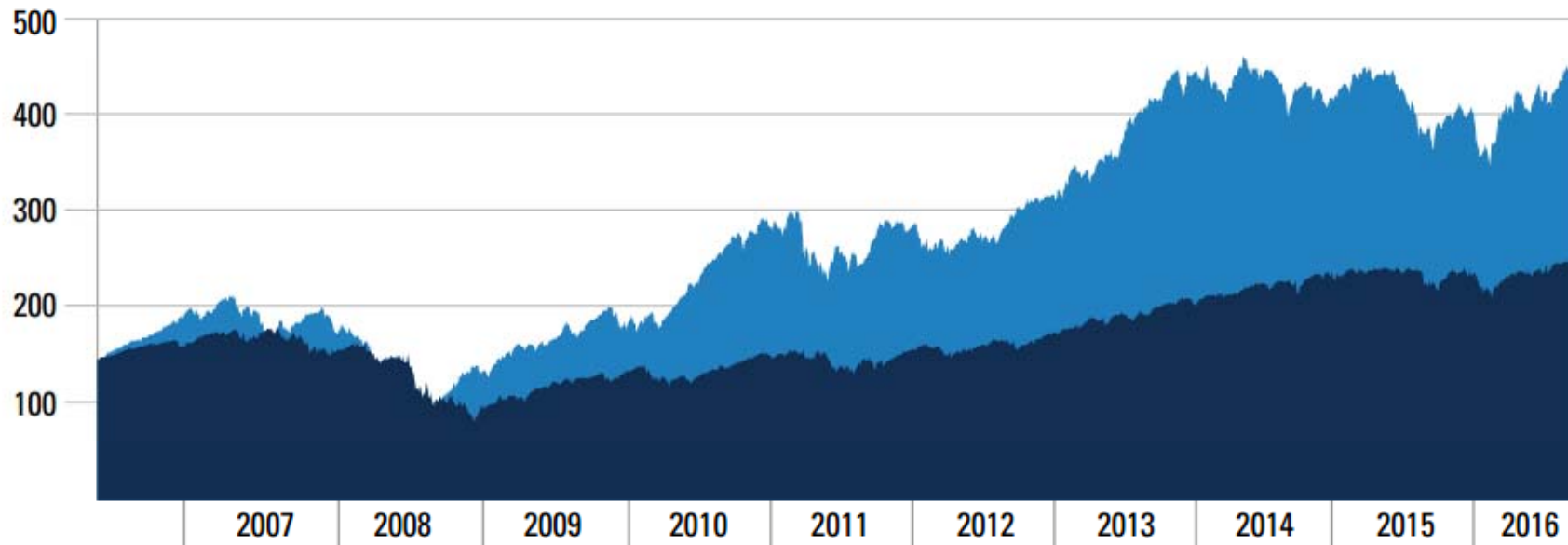


The ROBO Global™ Robotics and Automation Index  
ROBO Global™ INDICES

### 10 Year Historical Performance

■ S&P 500 Index Price Return

■ ROBO



Is this real, really? Follow the money

Artificial Intelligence and Robotics

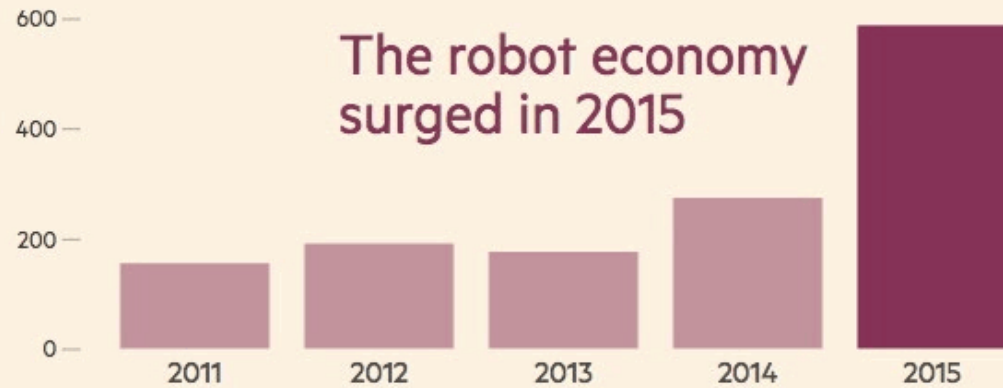
+ Add to myFT

# Rise of the robots is sparking an investment boom

## Global influx of machines in tech

... to test new markets

Global investment in robotics\* (\$m)



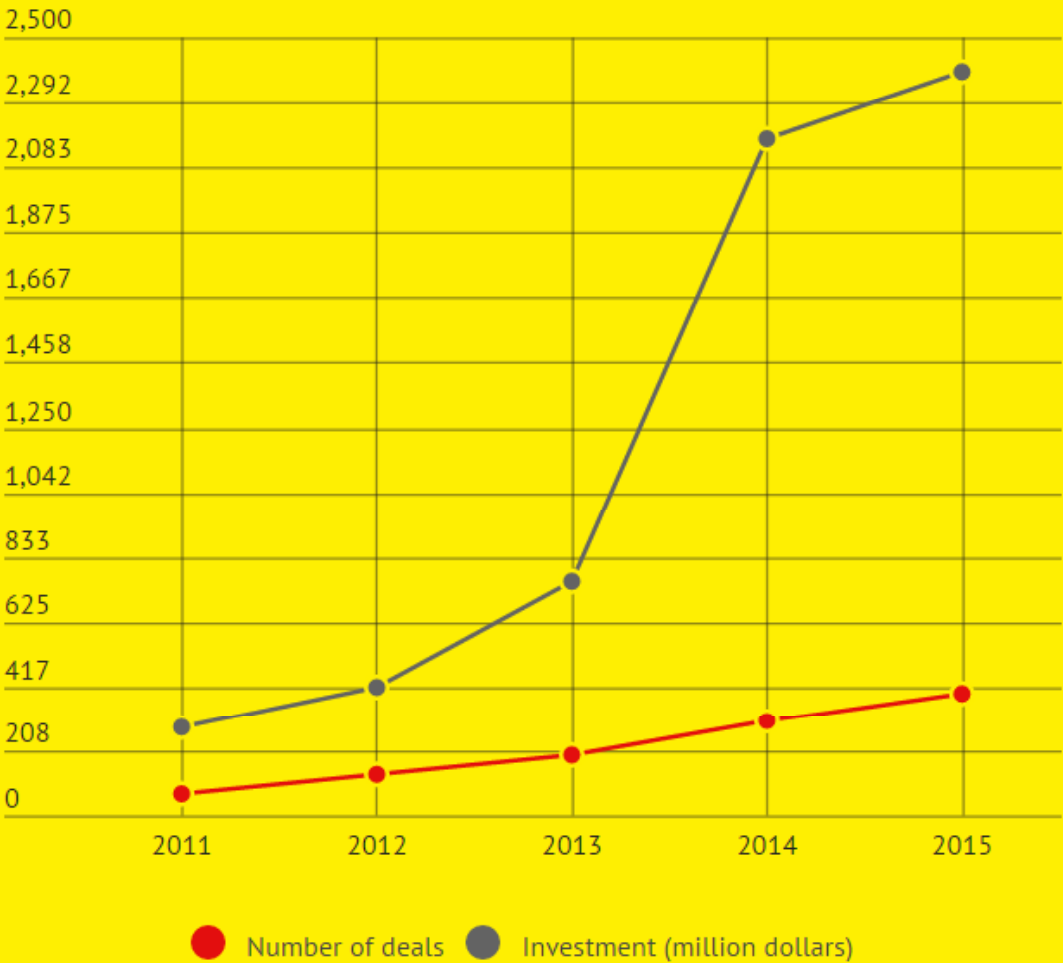
Source: CB Insights \*excluding drones

FT

Is this real, really? Follow the money



# GLOBAL YEARLY FINANCING IN AI



**Multi-billion investments by Goldman Sachs, Google, and IBM**

**\$15B per year by 2021**



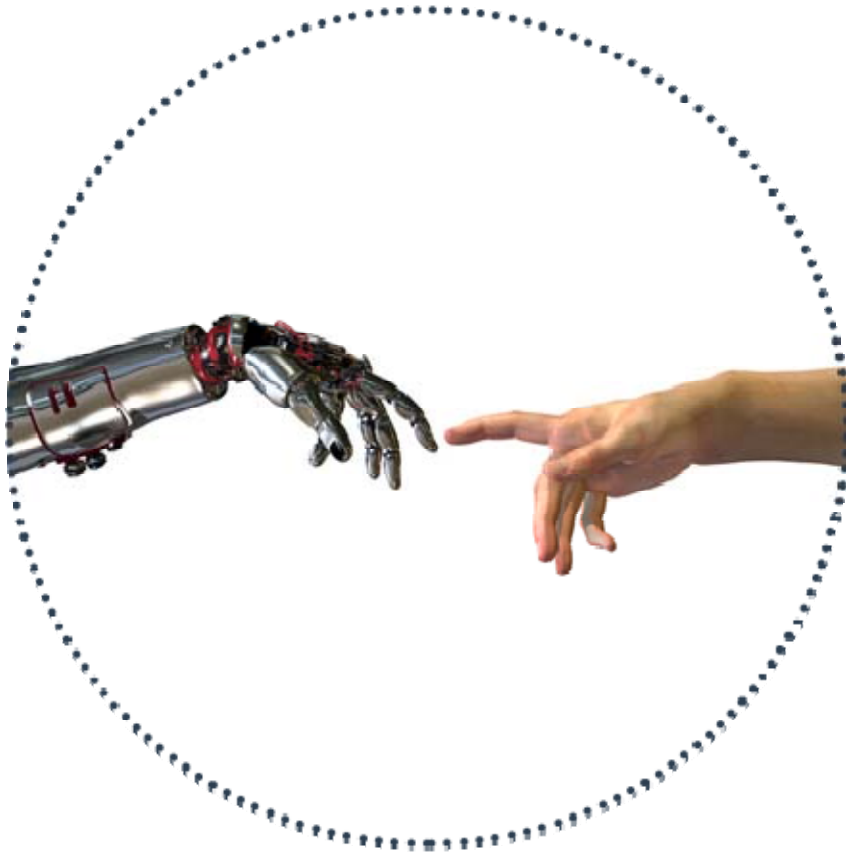
# Robots in LTC: “Robear”





## Human Augmentation: Exoskeletons



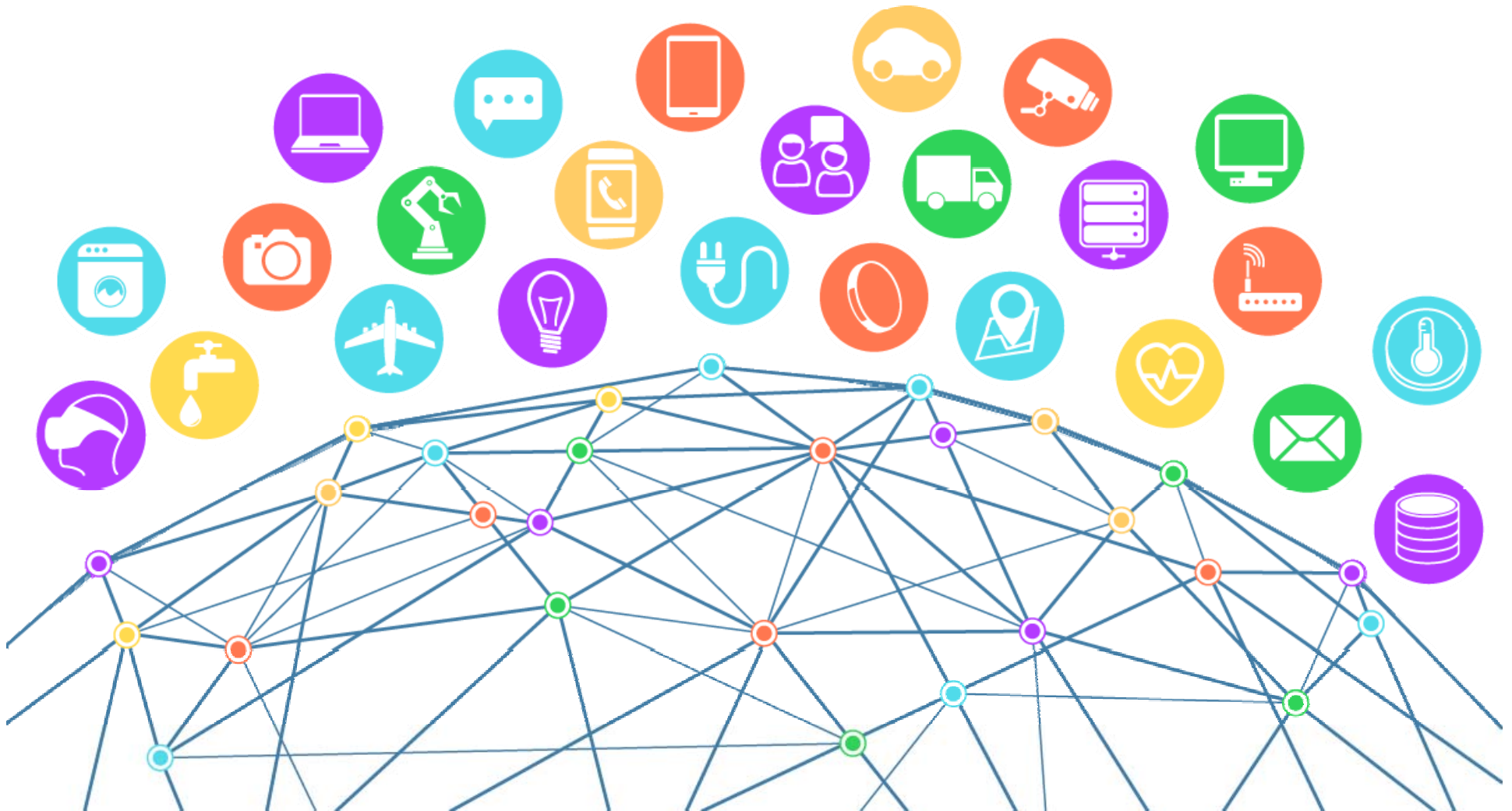


# Affective Computing

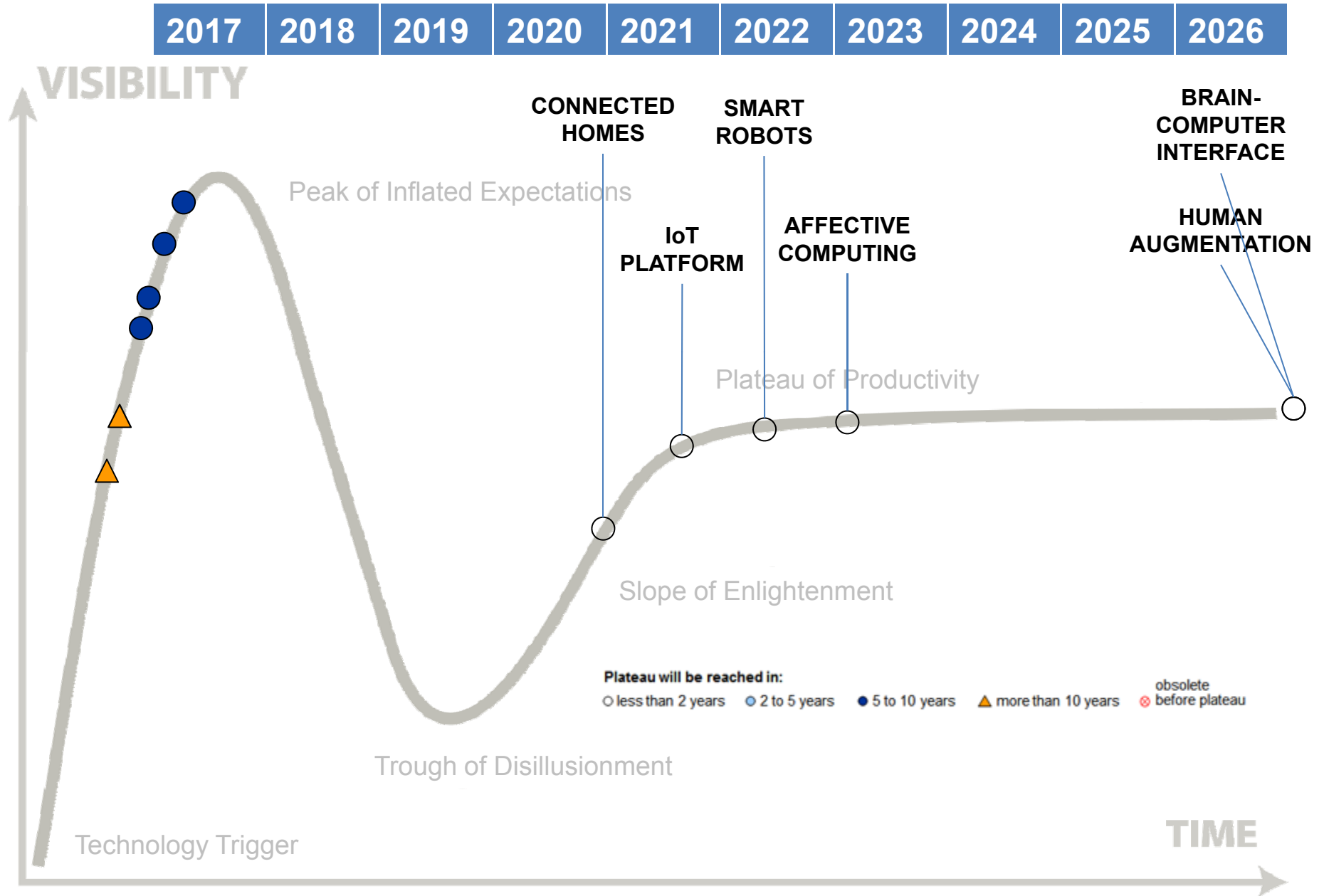




# Smart Homes and the Internet of Things



# When is it going to hit the market (mass adoption)?



## So, what's this mean for today's policies? And tomorrow's?



1. 95% of consumers who will need care have rejected LTCi for the past 25 years.
2. Consumers will be more receptive to tech-based care than human-provided care.
3. We need to broaden our thinking about how to support older adults (we're still administering policies with no ALF benefit from 30 years ago).
4. This is coming. Either we figure out how to work with it, or someone else in another industry will.