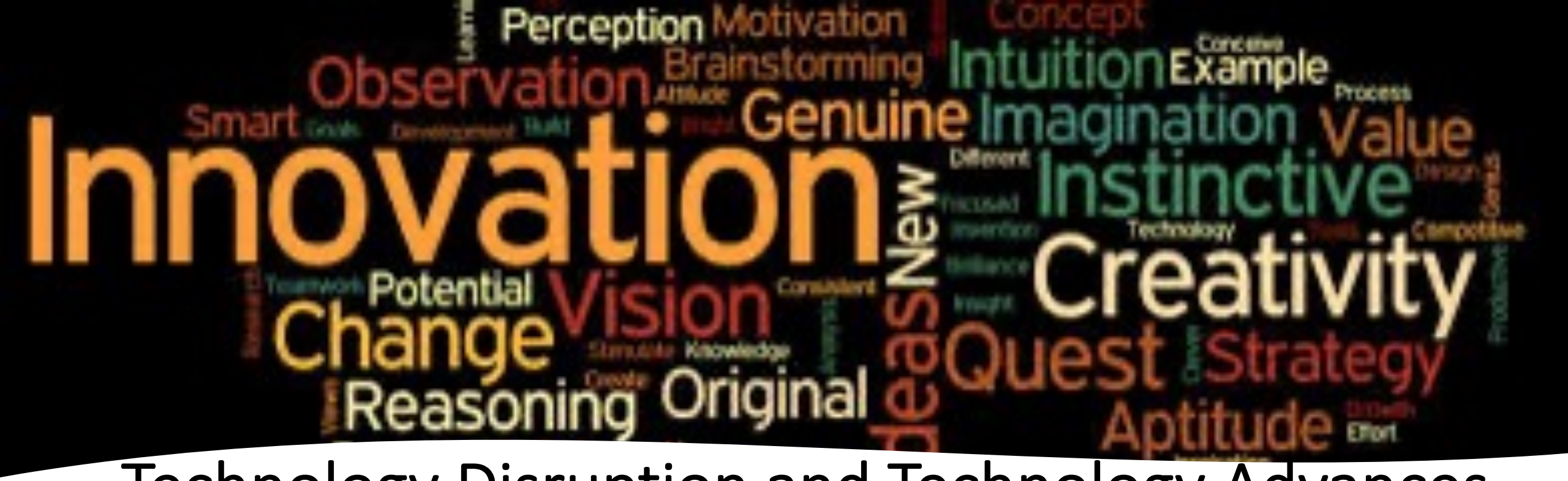
Pembicara

- Prof. Dr. ir. Marsudi Wahyu Kisworo, IPU
- S1 Teknik Elektro (Komputer), Institut Teknologi Bandung, lulus 1983
- S2 Ilmu Komputer, Curtin University, Australia, lulus 1990
- S3 Ilmu Komputer, Curtin University, Australia, lulus 1992
- Professor (Ilmu Komputer), Universitas Bina Darma
- Ketua Umum, Aliansi Pendidikan Vokasional Seluruh Indonesia (Apvokasi)
- Pembina, Ikatan Ahli Informatika Indonesia
- Komisaris Independen, PT (Persero) Rajawali Nusantara Indonesia
- Komisaris Independen, PT Telekomunikasi Indonesia 2019 -2021
- Pimpinan di beberapa kampus dari 2000 – 2019
- Pembimbing Gerakan Menuju 100 Smart city Kementrian Kominfo
- Trainer dalam bidang public speaking, achievement motivation, NLP, hypnotheraphy, spiritual leaderships, digital banking, GCG, risk management, etc
- E-mail : marsudi.kisworo@gmail.com
- Cell Number : +62-818-888-537
- http://marsudi.wordpress.com
- InstaGram: @marsudiwkisworo
- https://id.linkedin.com/pub/marsudi-wahyu-kisworo/25/262/546

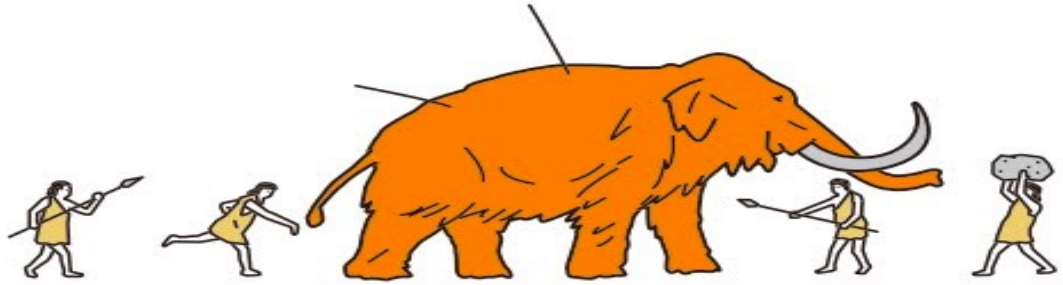


Technology Disruption and Technology Advances Toward Society 5.0 Transformation

Prof. Dr. ir. Marsudi Wahyu Kisworo, IPU
Guru Besar Ilmu Komputer, Universitas Bina Darma Palembang
Ketua Umum Aliansi Pendidikan Vokasional Seluruh Indonesia
marsudi.kisworo@gmail.com

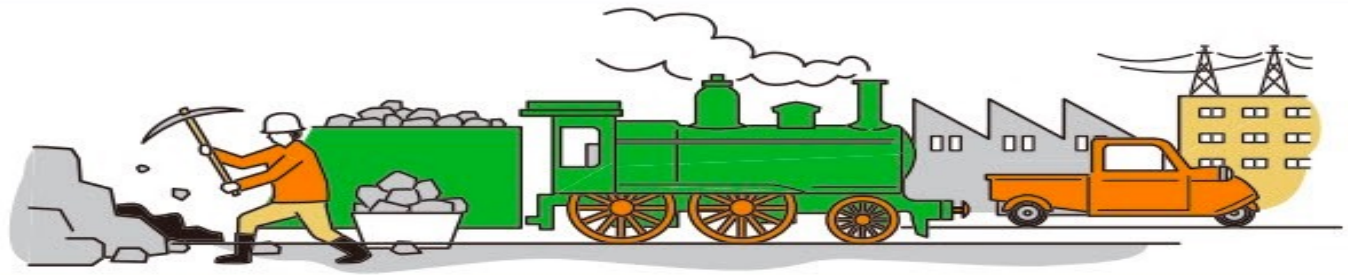
The Road to Society 5.0

Society 1.0
Hunter-gatherer Society



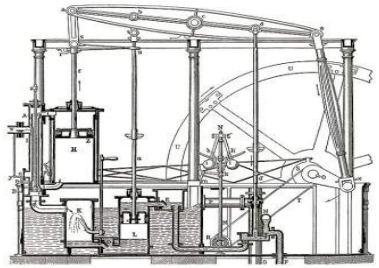
Society 2.0
Agrarian Society

Society 3.0
Industrial Society



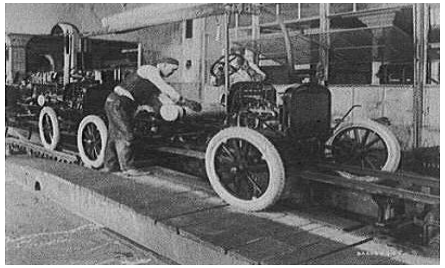
Society 4.0
Information Society

From Industry 1.0 to Industry 4.0



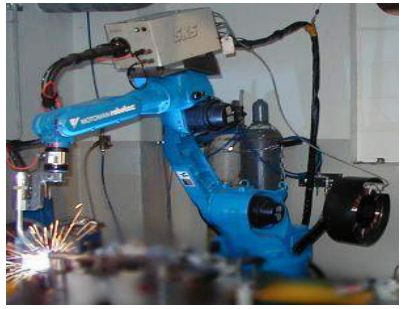
Industry 1.0

Steam and water powered machinery



Industry2.0

Mass production using electricity-powered machine



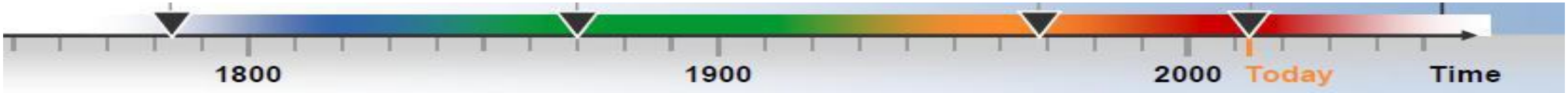
Industry3.0

Programmable machine, mechatronics, production robots

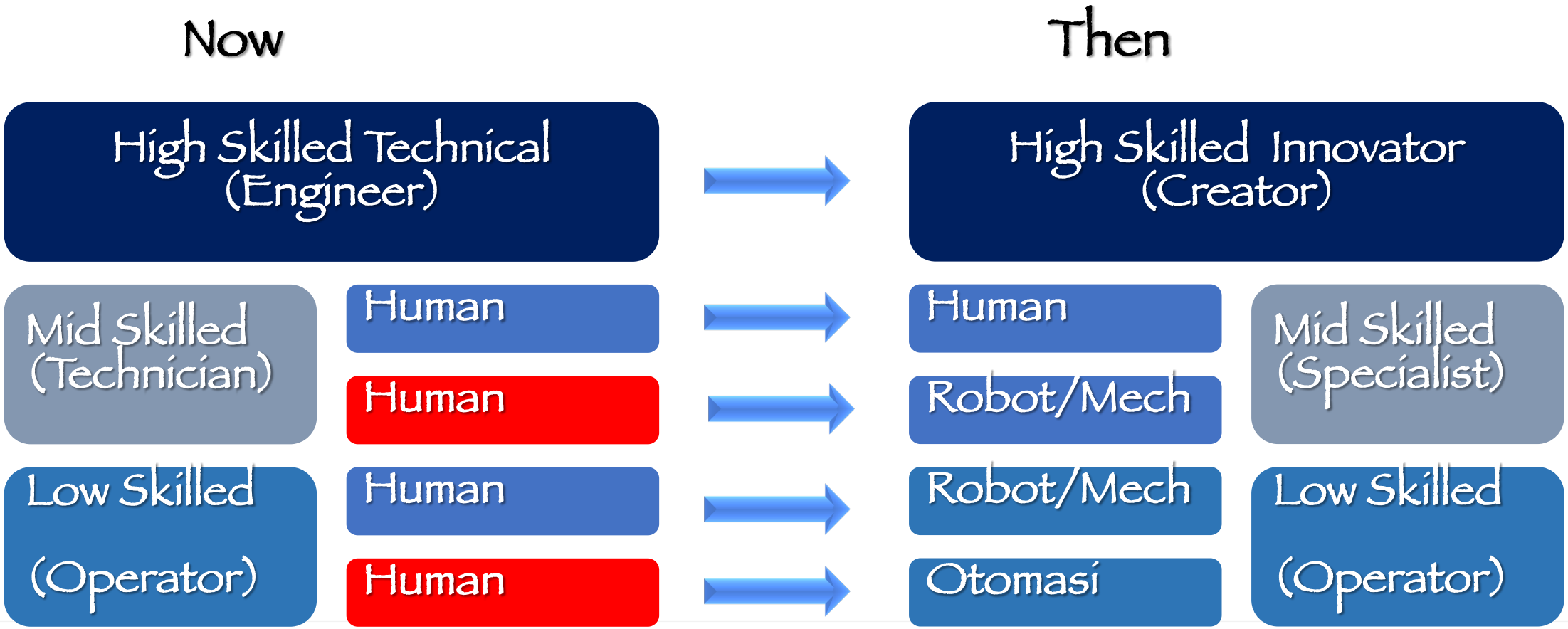
Industry 4.0

Cyber-physical system, machine intelligence, data analytics, IoT

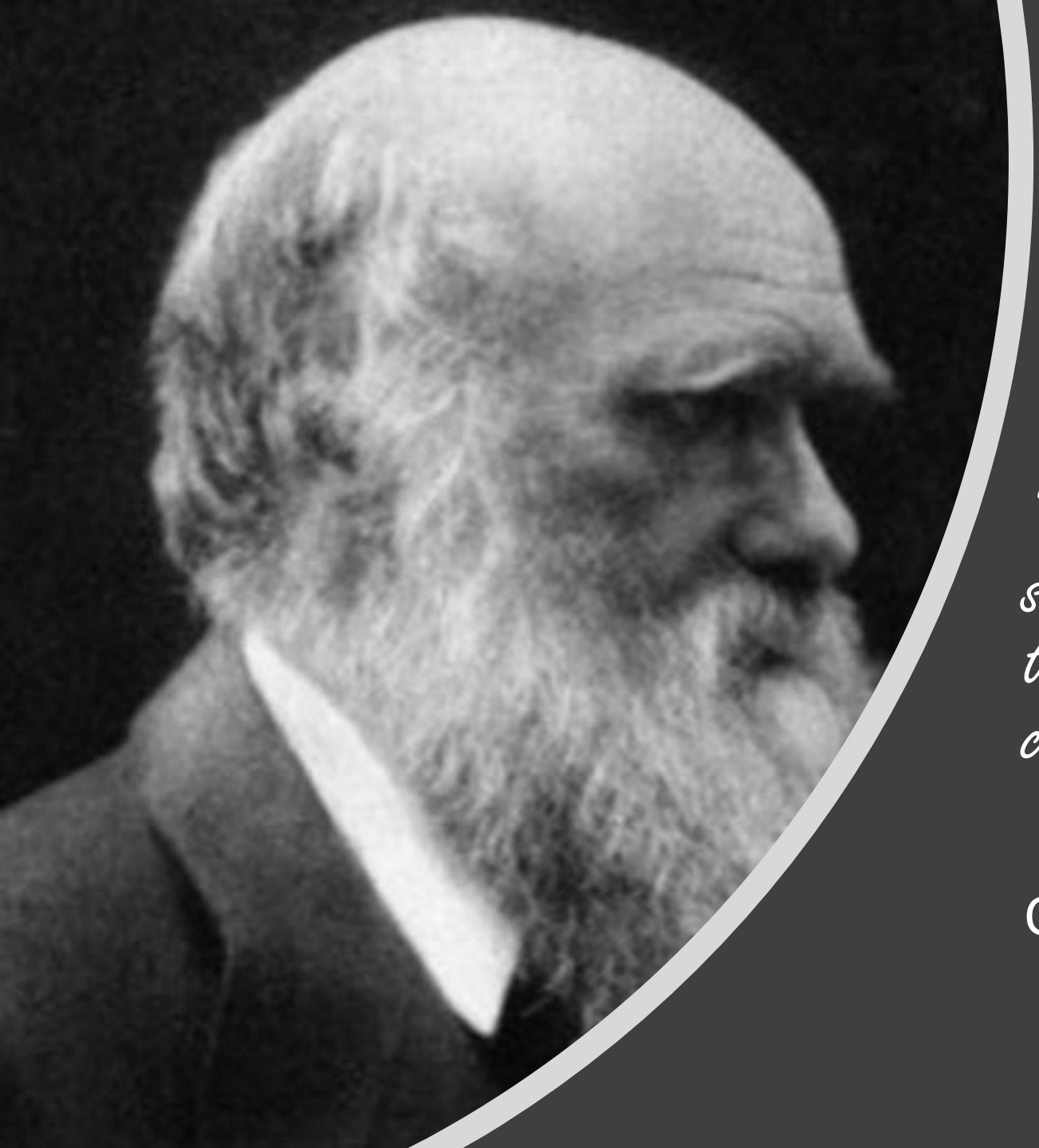
Degree of complexity



Human in Society 5.0

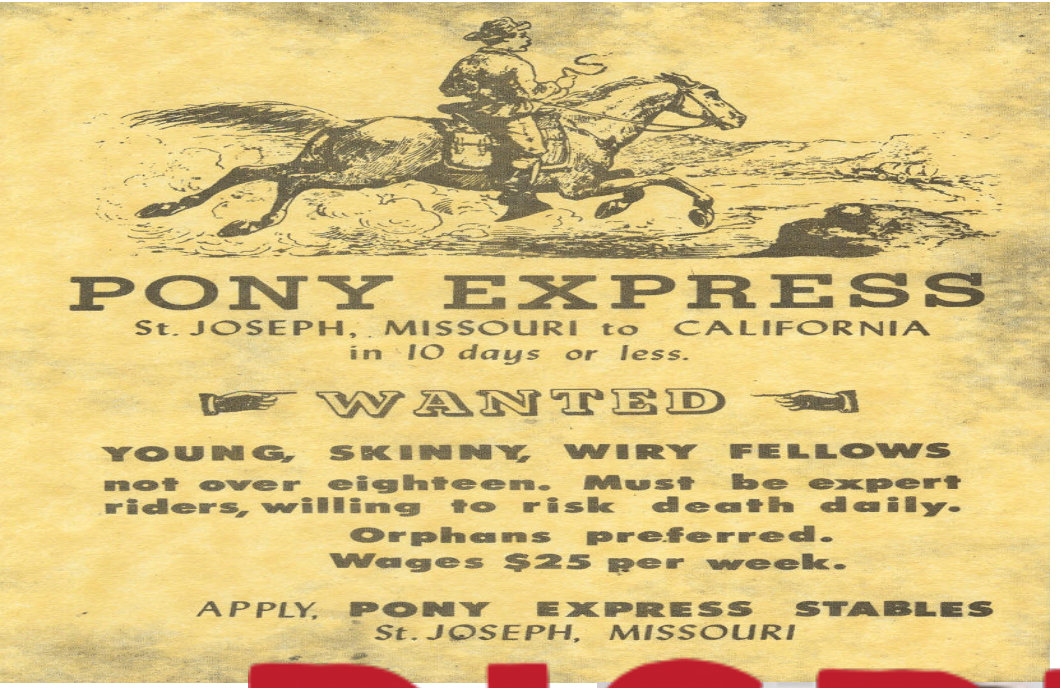



WELCOME TO THE DAY
AFTER JUDGMENT DAY
PRODUCER JAMES CAMERON RETURNS FROM TIM MILLER THE DIRECTOR OF DEADPOOL
TERMINATOR
DARK FATE
STORY BY JAMES CAMERON & CHARLES EGLEE & JOSH FRIEDMAN & DAVID GOYER & JUSTIN RHODES
SCREENPLAY BY DAVID GOYER & JUSTIN RHODES AND BILLY RAY DIRECTED BY TIM MILLER
IN THEATRES AND IMAX
NOVEMBER 1



"It is not the strongest of the species that survives, nor the most intelligent. It is the one that is the most adaptable to change."

Charles Darwin


PONY EXPRESS
St. JOSEPH, MISSOURI to CALIFORNIA
in 10 days or less.
WANTED
YOUNG, SKINNY, WIRY FELLOWS
not over eighteen. Must be expert riders, willing to risk death daily.
Orphans preferred.
Wages $25 per week.
APPLY, PONY EXPRESS STABLES
St. JOSEPH, MISSOURI


LAND OFFICE
SilverStone RANCHES
LAND OFFICE

DISRUPTION!

Human Machine Harmony

Society 5.0

Current society

Knowledge and information are not shared and cross-sector value is difficult to create.

IoT will connect all people and things, all sorts of knowledge and information will be shared, and totally new value will be born.

Current society

A variety of constraints exists with respect to social problems such as the aging society and regional depopulation making a sufficient response difficult.

Social issues will be overcome and humans will be liberated from various types of constraints.

AI will free humans from the burdensome work of analyzing huge amounts of information.

Current society

With an overflow of information, the work of finding and analyzing the information desired is difficult and burdensome.

The possibilities open to humans will expand through the use of robots, automatic-driving cars, etc.

Current society

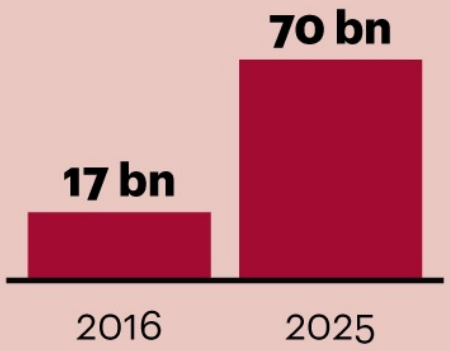
[source: CAO]

A cyber-physical collision is being driven by four key technology clusters...

Connectivity and computing power

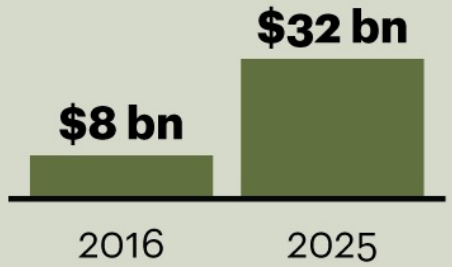
Internet of Things
Connecting the unconnected

85%
of production assets today are still unconnected

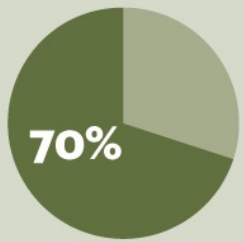


Analytics and intelligence

Machine learning
Coming of age



70% of captured production data goes unused.
AI can change that



Human-machine interface

Wearables
Digitizing the workforce

$700 million market, projected to grow to **$5 billion by 2020**

Wearables improve operator productivity by **25 percent**

Most industries still in early stages of adoption

Digital to physical transformation

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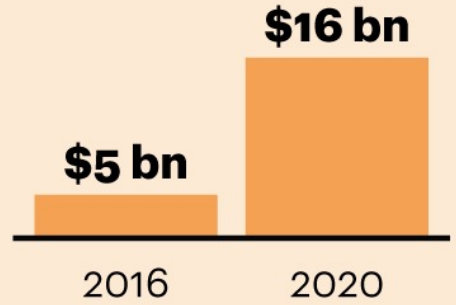
Global market



Recent surge in metal capabilities

Source: A.T. Kearney

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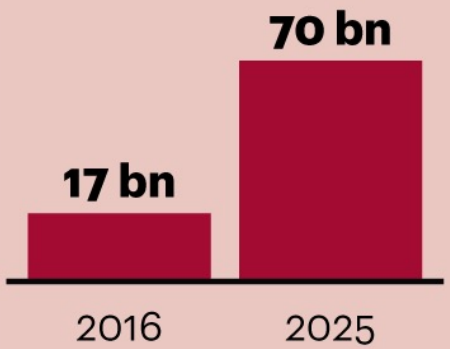


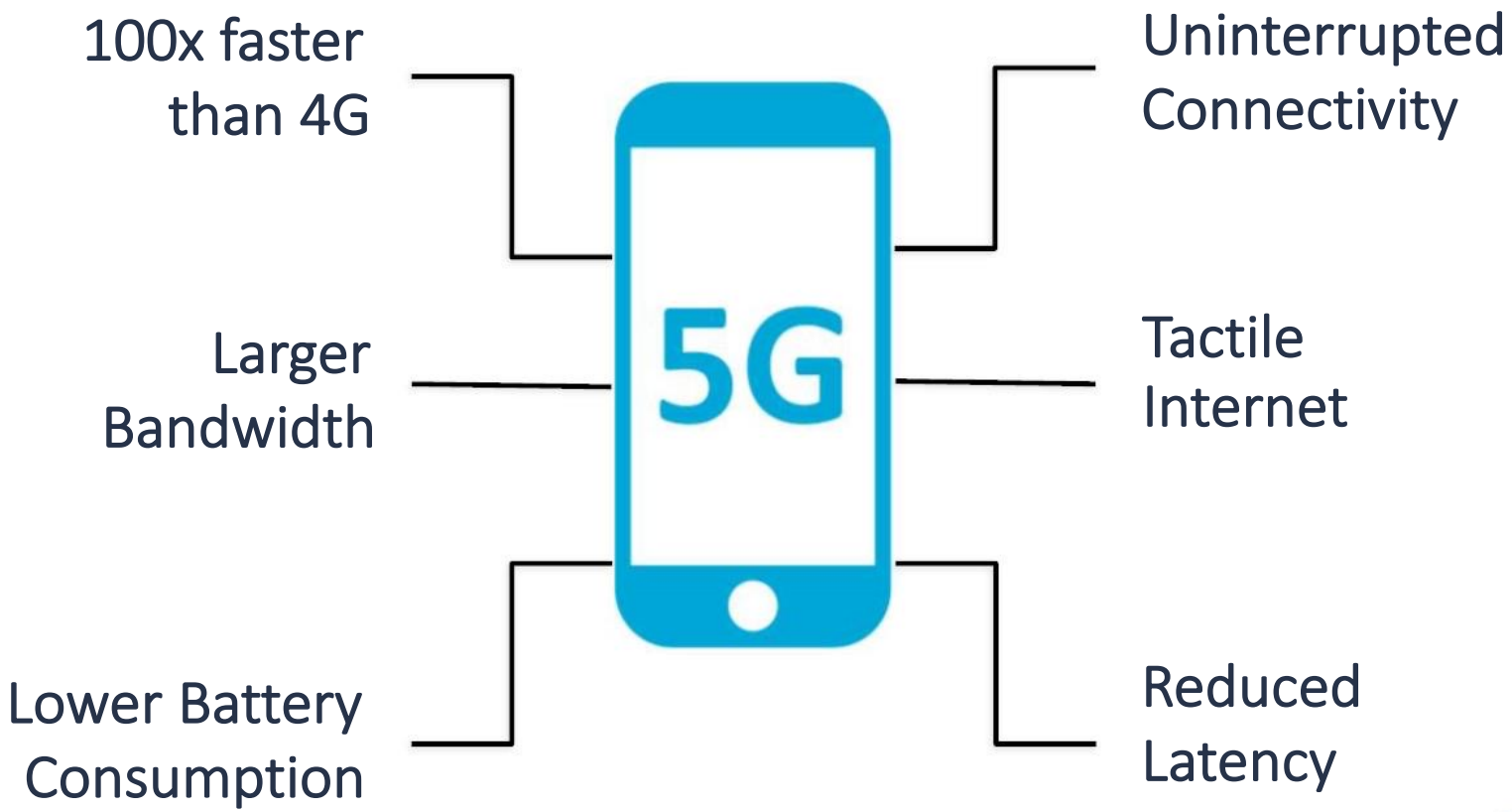
Source: A.T. Kearney

5G in a glance

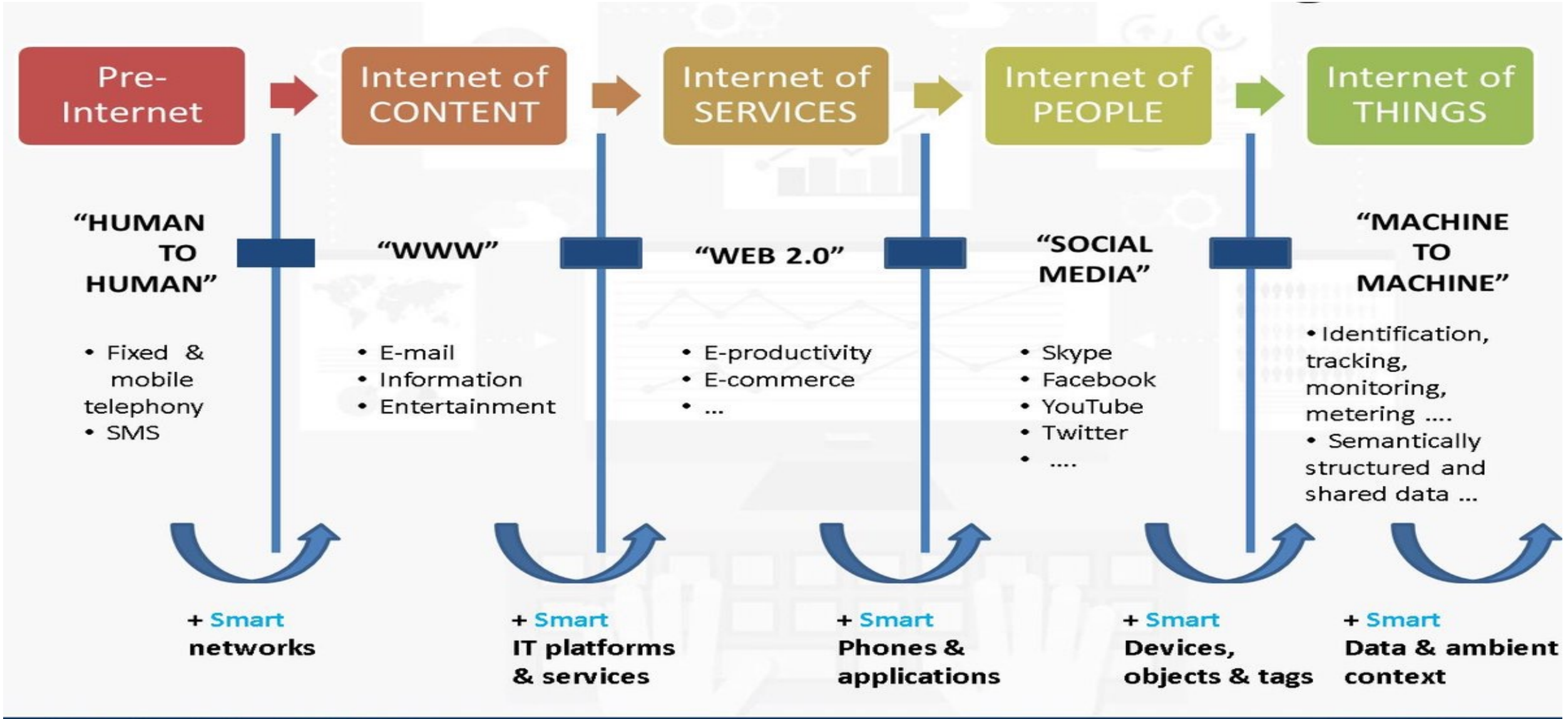
Quick Fact!

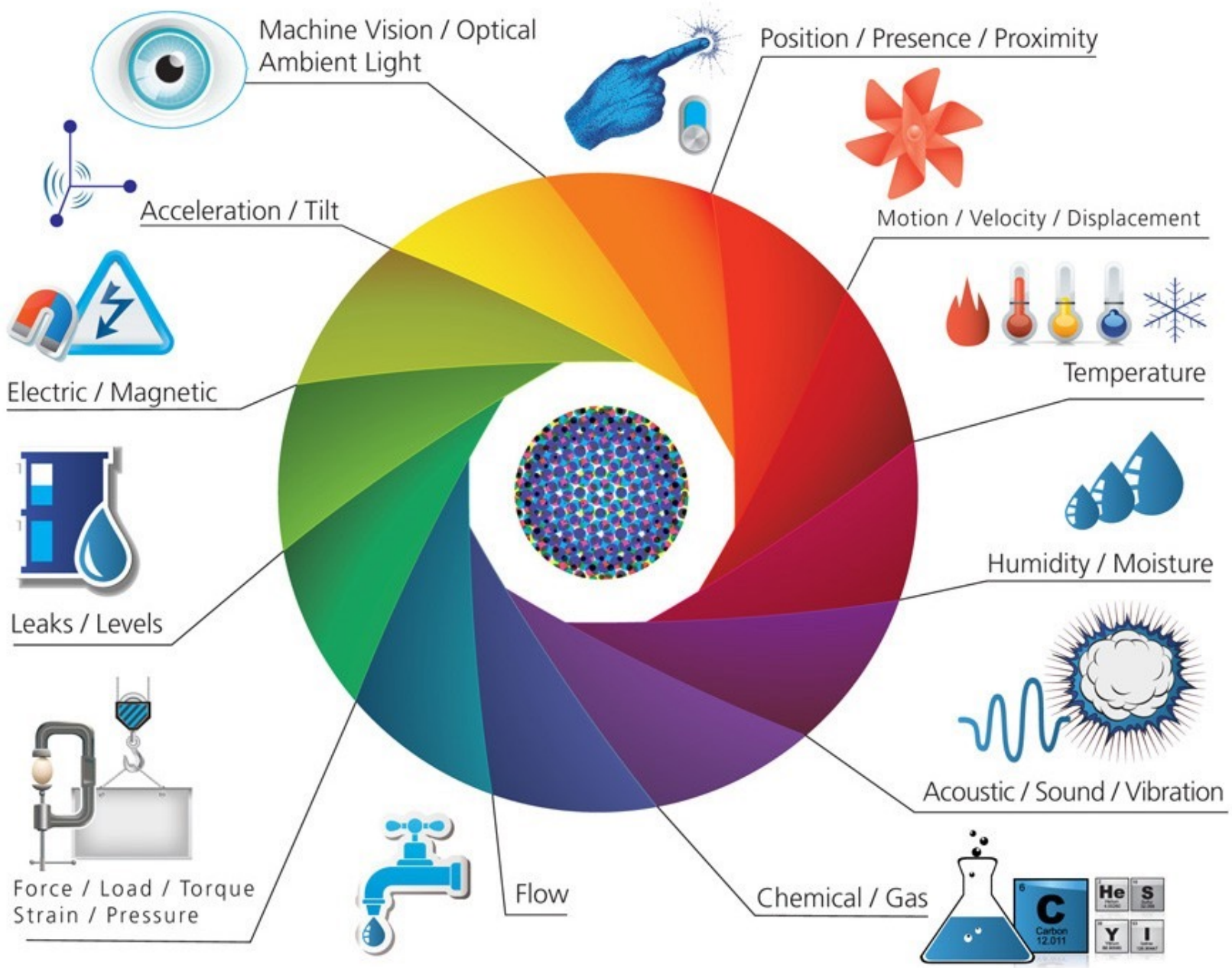
At Mobile World Congress 2017, Samsung showcased its 5G Home Routers, which reached up to 4 (Gbps) according to

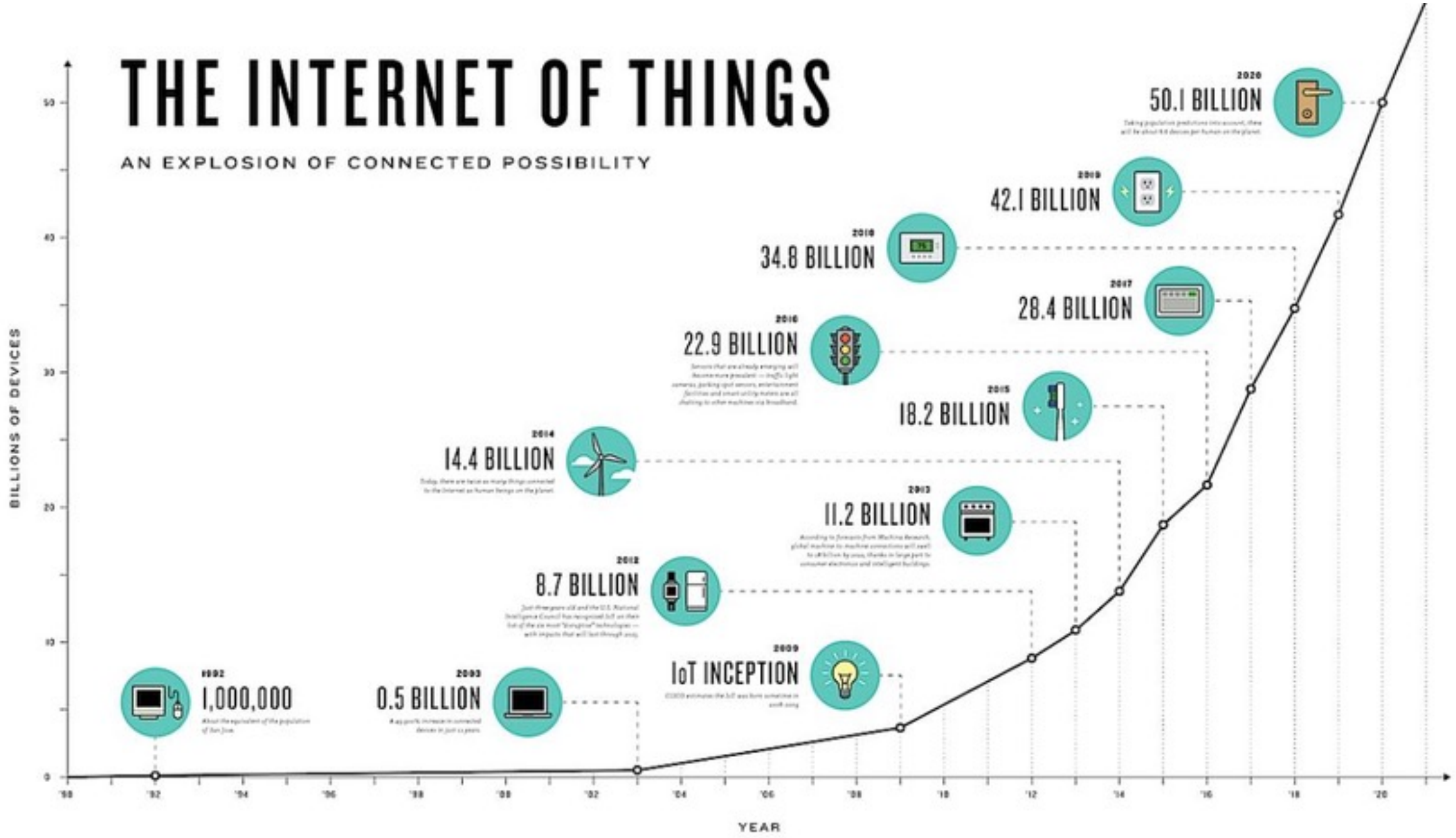
Source: PCMag.



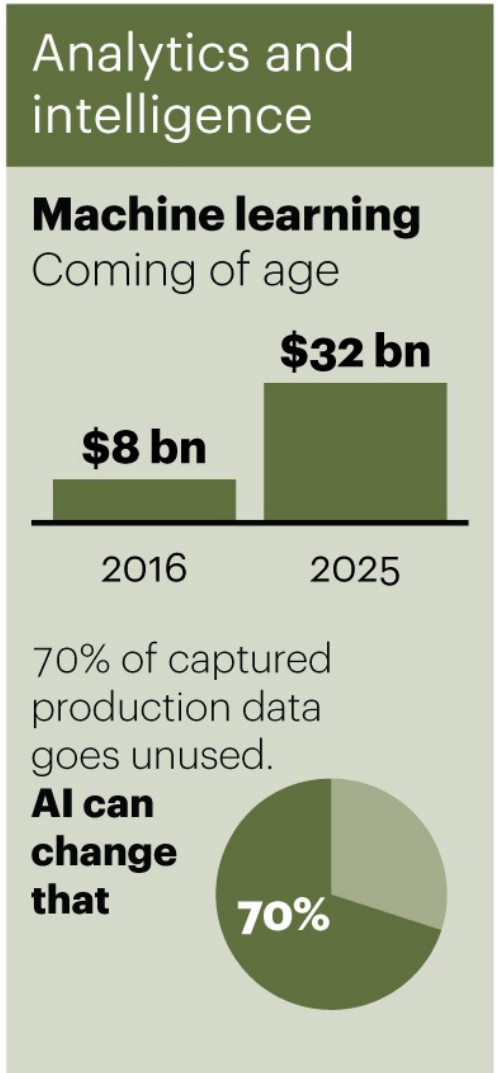
Digital Connectivity Evolutions




Machine Vision / Optical
Ambient Light
Position / Presence / Proximity
Acceleration / Tilt
Motion / Velocity / Displacement
Electric / Magnetic
Temperature
Leaks / Levels
Humidity / Moisture
Acoustic / Sound / Vibration
Force / Load / Torque
Strain / Pressure
Flow
Chemical / Gas
C
Carbon
12.011
He
S
Y
I

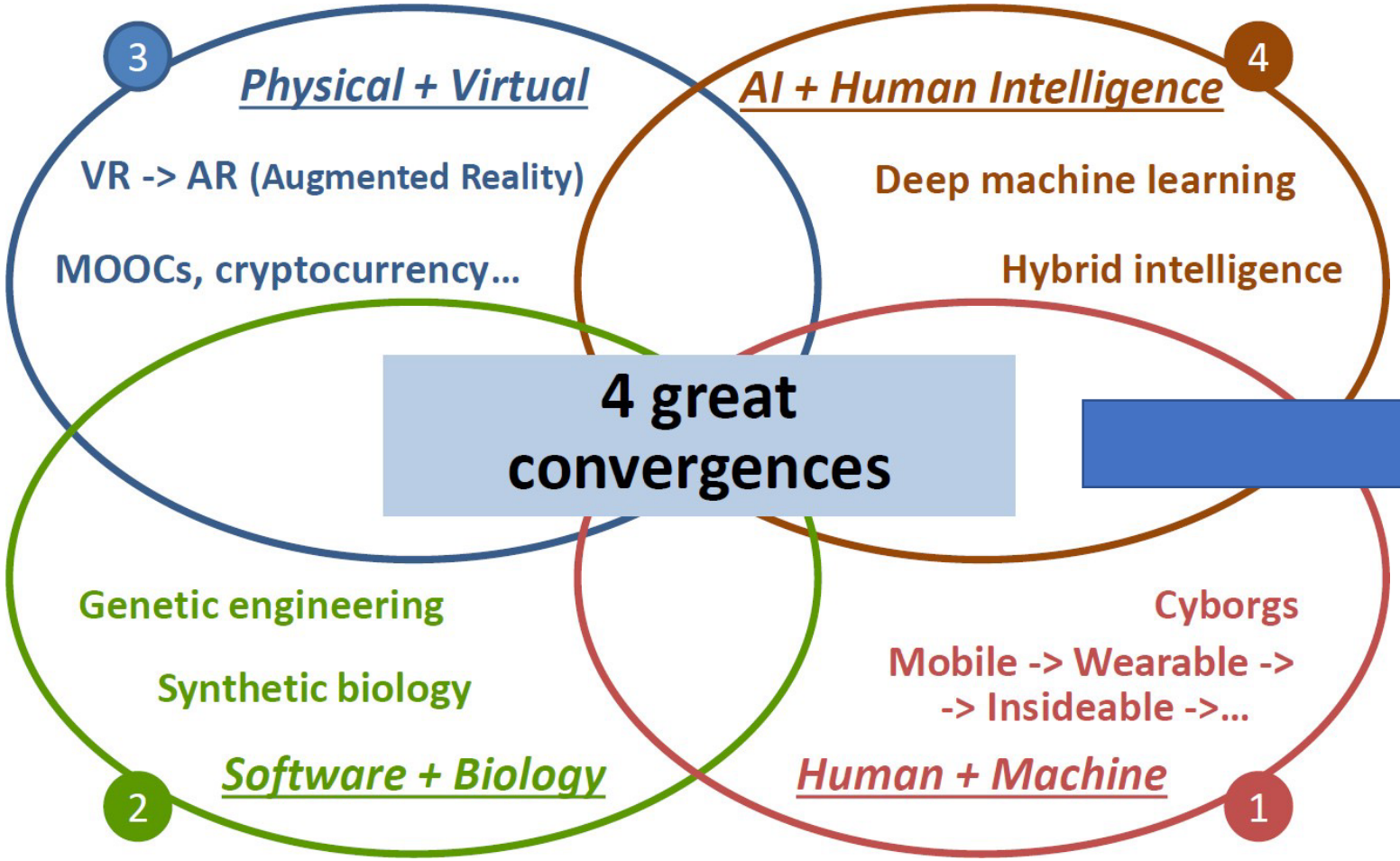

THE INTERNET OF THINGS
AN EXPLOSION OF CONNECTED POSSIBILITY
BILLIONS OF DEVICES
YEAR
1992
1,000,000
2003
0.5 BILLION
2009
IoT INCEPTION
2012
8.7 BILLION
2013
11.2 BILLION
2014
14.4 BILLION
2015
18.2 BILLION
2016
22.9 BILLION
2017
28.4 BILLION
2018
34.8 BILLION
2019
42.1 BILLION
2020
50.1 BILLION

A cyber-physical collision is being driven by four key technology clusters...



Source: A.T. Kearney

4 Great Convergences

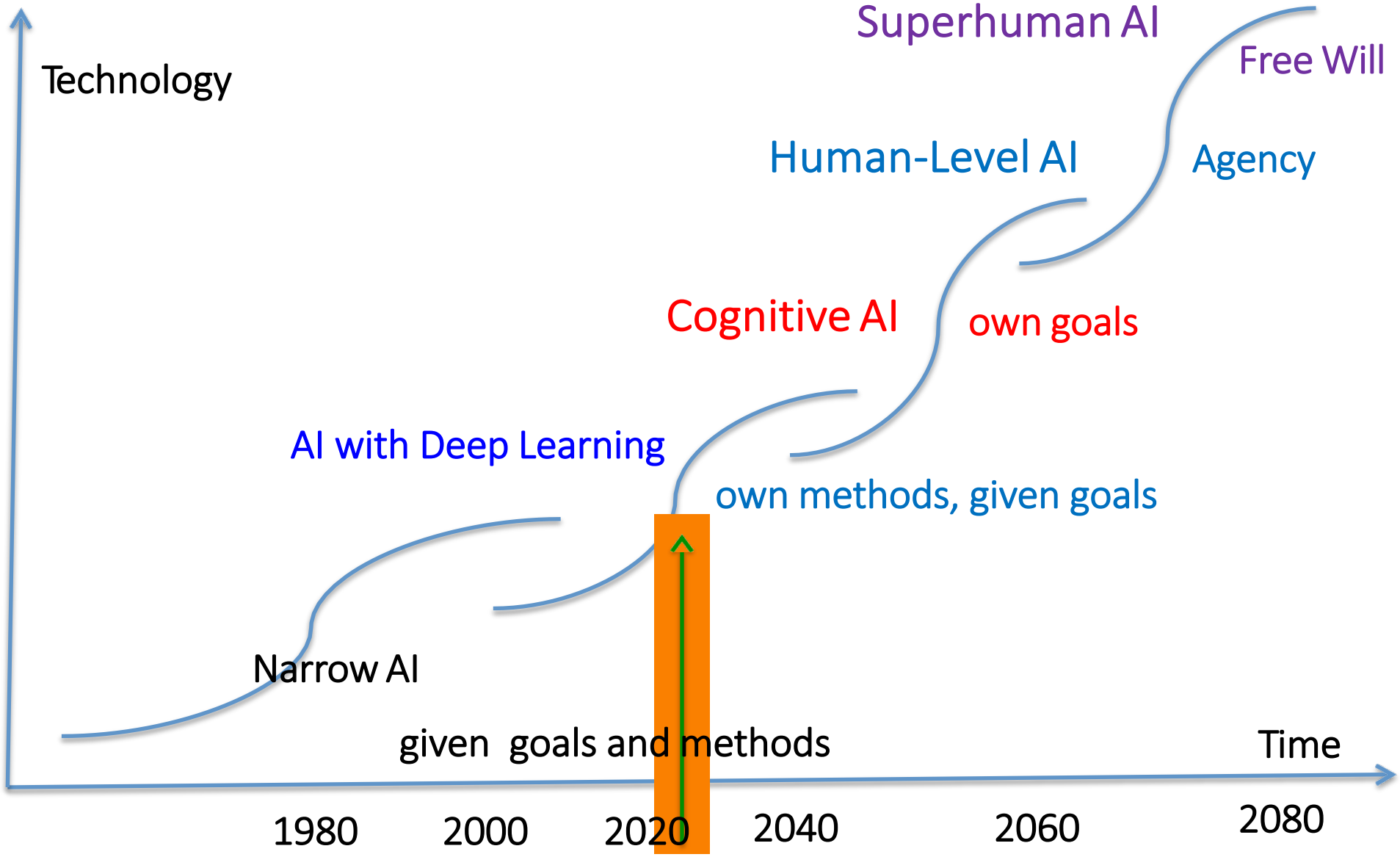


Cognitive Artificial Intelligence

Intelligence Explosion (Good, 1965)

- Hypothesis: The smarter you are, the more creativity you can apply to the task of making yourself even smarter.
- Prediction: Positive feedback cycle rapidly leading to superintelligence.
- Extreme case of more common belief that reflectivity / self-modification is one of the Great Keys to AI.

(Good, I. J. 1965. Speculations Concerning the First Ultraintelligent Machine. Pp. 31-88 in *Advances in Computers*, **6**, F. L. Alt and M. Rubinoff, eds. New York: Academic Press.)


Technology
Superhuman AI
Free Will
Human-Level AI
Agency
Cognitive AI
own goals
AI with Deep Learning
own methods, given goals
Narrow AI
given goals and methods
Time
1980
2000
2020
2040
2060
2080

AI Automation Path: Enterprises are moving from BPA to IPA to fully exploit AI, enhance productivity and reduce costs of operation

Macros and Scripts

Rules-based automation within a specific application (e.g., Excel) to provide users with a way to automate a repeatable process with highly structured data

Business Process Automation (BPA)

Reengineering existing business processes by using software, integrating systems, and restructuring labor to optimize workflows and minimize costs

Robotic Process Automation (RPA)

Alias: Robotic Desktop Automation (RDA)

Automating labor-intensive, repetitive activities across multiple systems and interfaces by training and/or programming third-party software to replicate a user's workflow

Operates at the presentation layer without the need to change existing systems

Intelligent Process Automation (IPA)

Aliases: Cognitive Computing, Smart Workflows

Combining RPA with artificial intelligence technologies to identify patterns, learn over time, and optimize workflows

Through "supervised" and "unsupervised" learning, algorithms make predictions and provide insights on recognized patterns

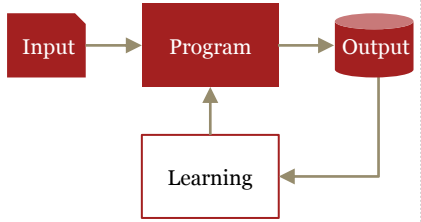
Algorithmic Business

Industrialized use of complex mathematical algorithms to drive improved business decisions or process automation for competitive differentiation

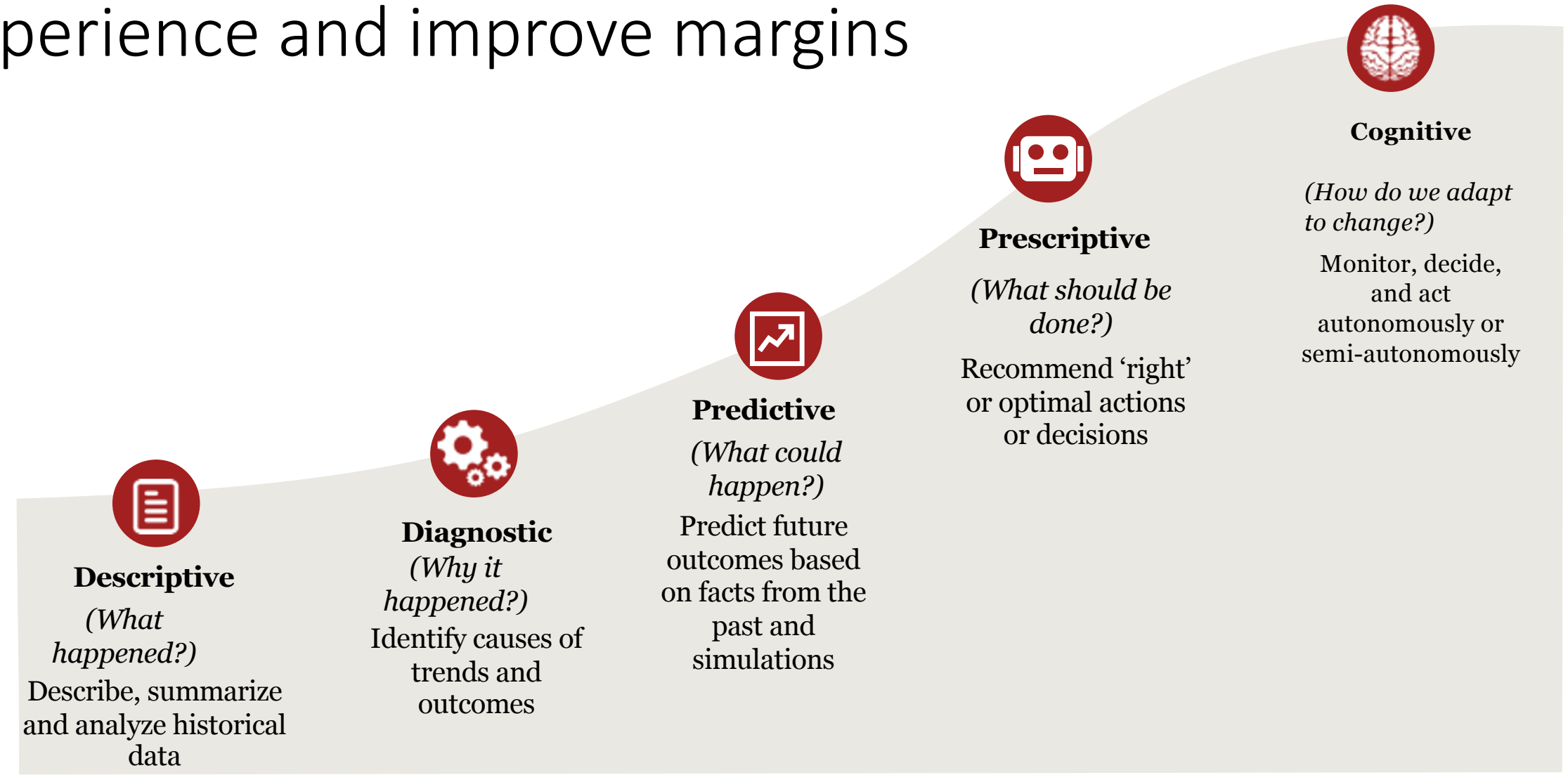
How do RPA and IPA differ?

RPA directly mimics human behavior

IPA learns how to become more efficient



AI Analytics Path: Enterprises are moving from descriptive analytics to cognitive analytics to fully exploit AI, enhance experience and improve margins



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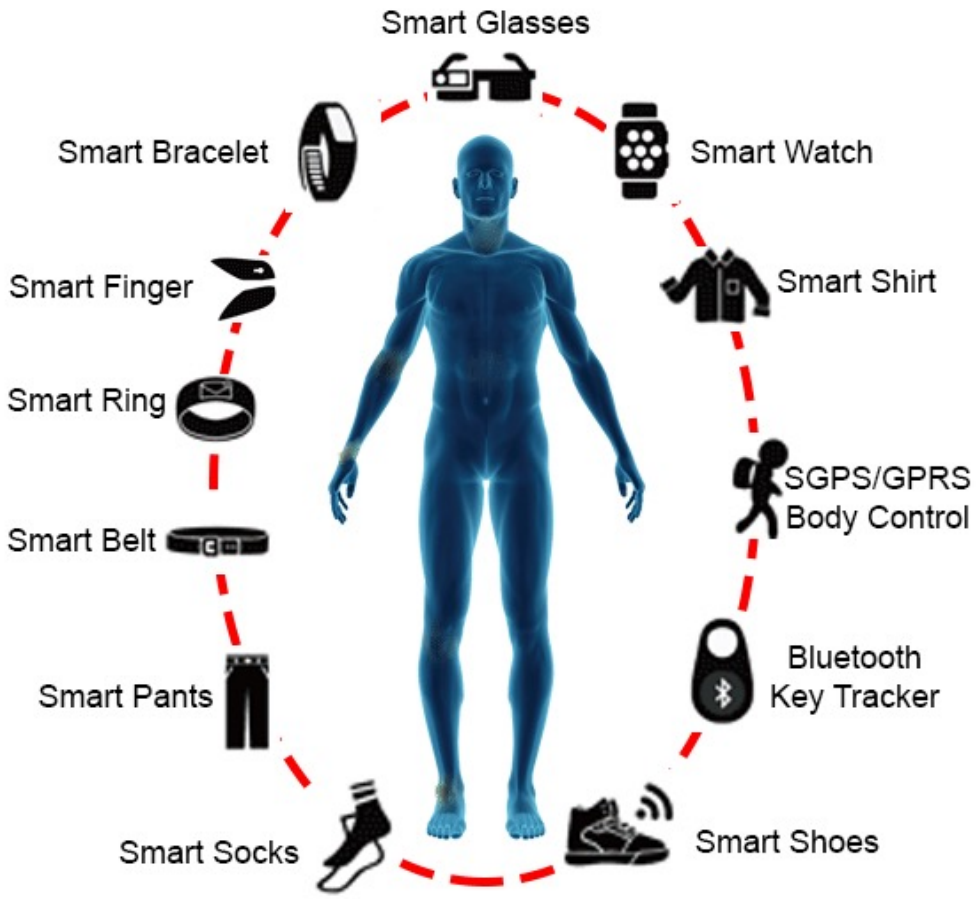

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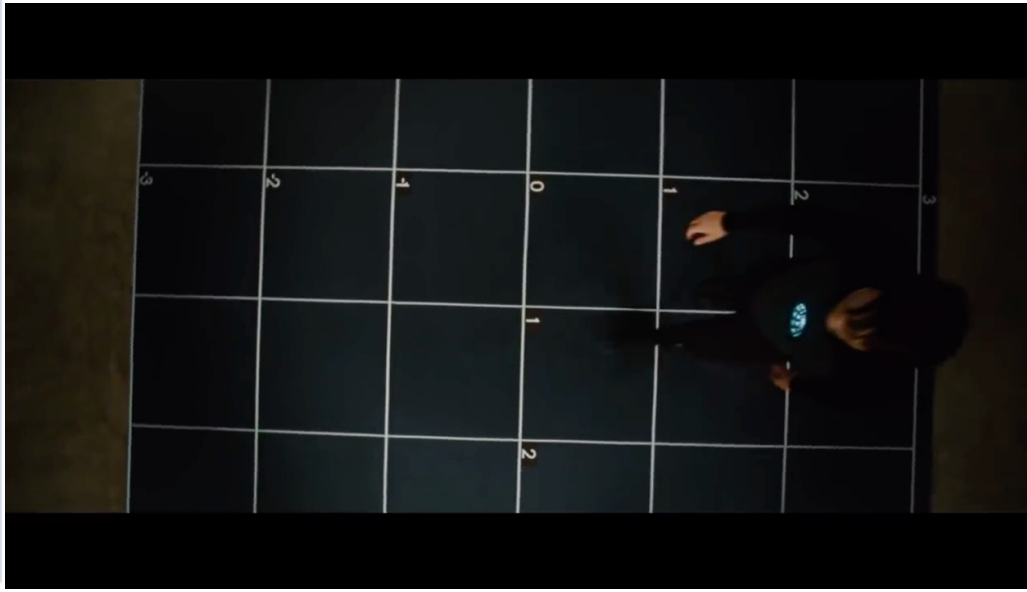
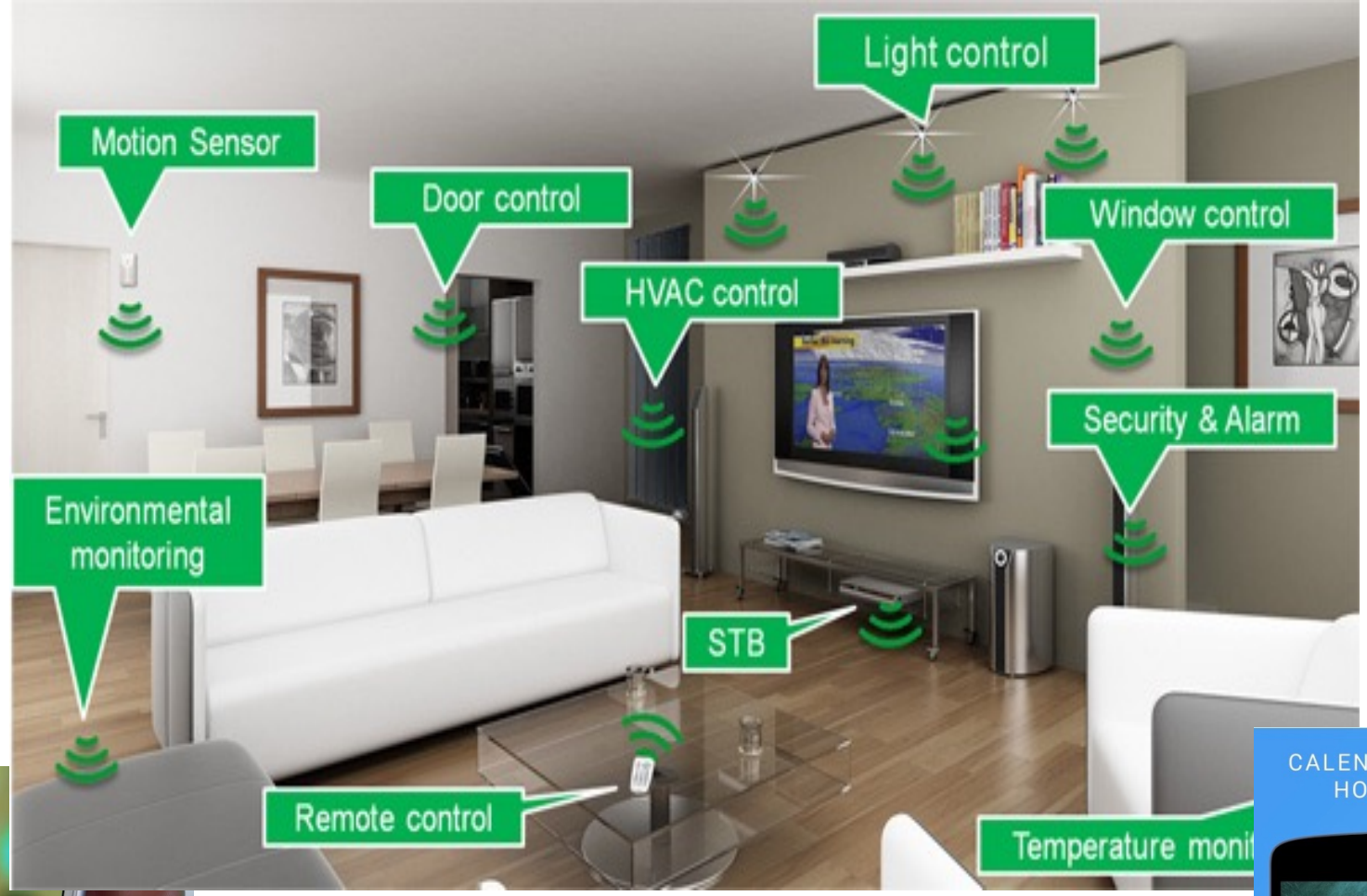
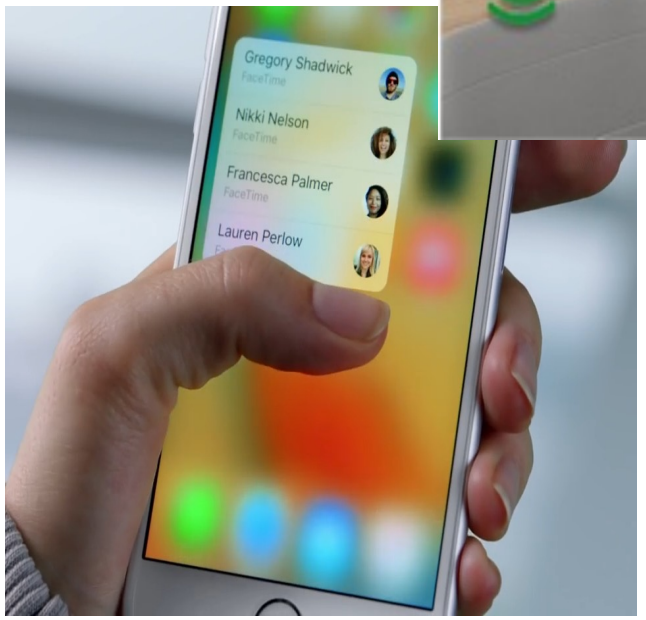
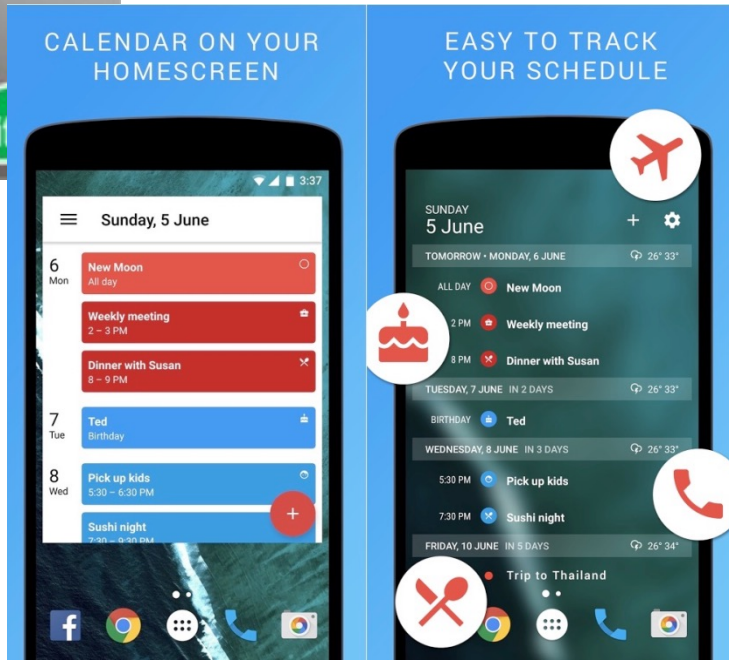


Source: A.T. Kearney

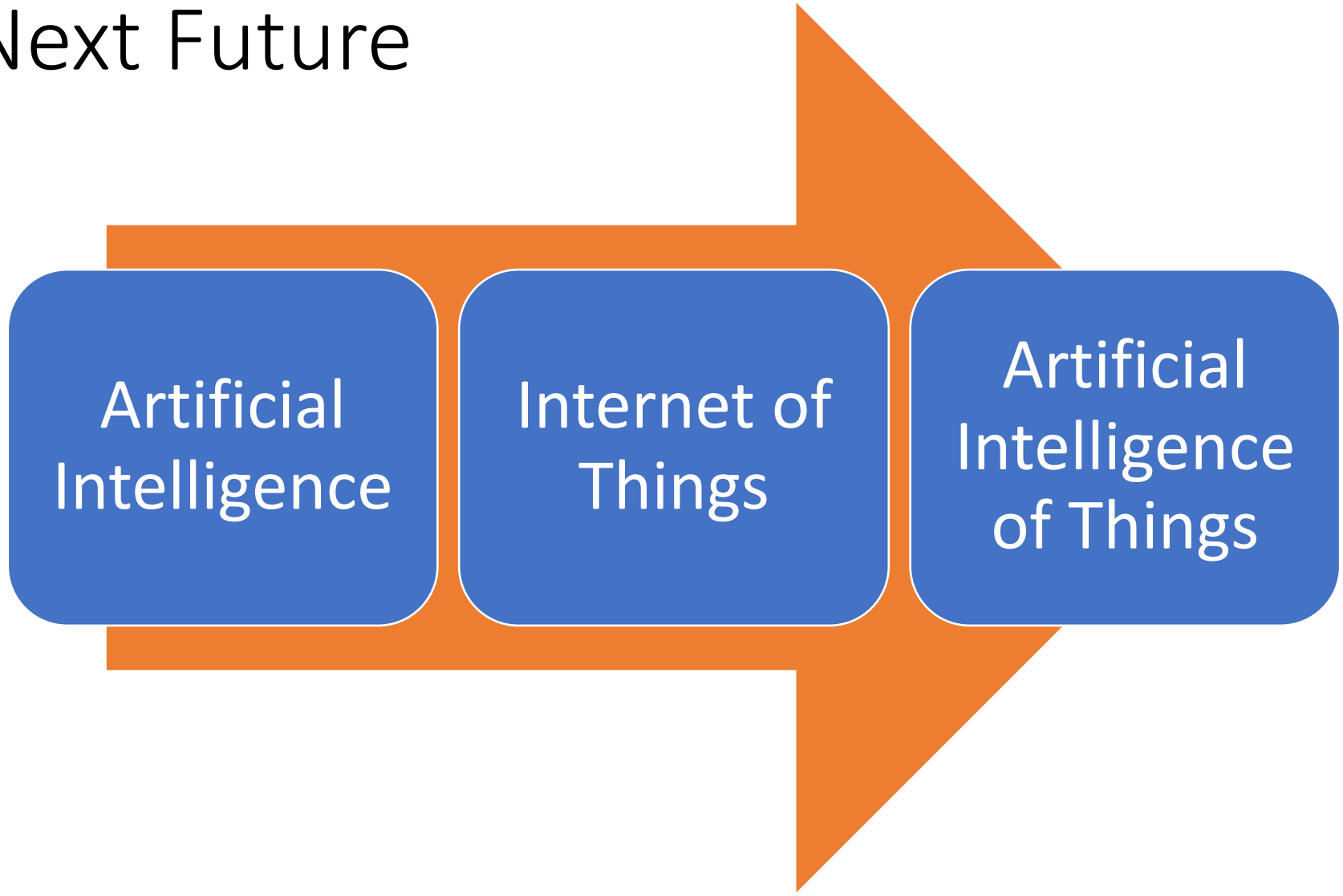

Light control
Motion Sensor
Door control
Window control
HVAC control
Security & Alarm
Environmental monitoring
STB
Remote control
Temperature moni


Gregory Shadwick
FaceTime
Nikki Nelson
FaceTime
Francesca Palmer
FaceTime
Lauren Perlow


11:52
OUTLOOK
Caitlin McGarry
Outlook on Apple Watch
Hi Jared, So is this Outlook app worth using or what? I'm dying to know. Caitlin -- Caitlin McGarry Staff Writer


CALENDAR ON YOUR HOMESCREEN
Sunday, 5 June
6 Mon
New Moon
All day
Weekly meeting
2 – 3 PM
Dinner with Susan
8 – 9 PM
7 Tue
Ted
Birthday
8 Wed
Pick up kids
5:30 – 6:30 PM
Sushi night
EASY TO TRACK YOUR SCHEDULE
SUNDAY
5 June
TOMORROW • MONDAY, 6 JUNE
ALL DAY New Moon
2 PM Weekly meeting
8 PM Dinner with Susan
TUESDAY, 7 JUNE IN 2 DAYS
BIRTHDAY Ted
WEDNESDAY, 8 JUNE IN 3 DAYS
5:30 PM Pick up kids
7:30 PM Sushi night
FRIDAY, 10 JUNE IN 5 DAYS
Trip to Thailand

The Next Future



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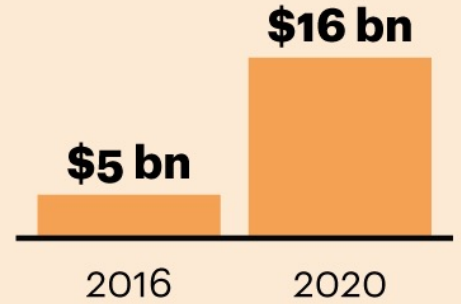

Recent surge in metal capabilities

Robotic Process Automation

Accuracy
- ✓ The right result, decision or calculation the first time

Standardisation / Consistency
- ✓ Identical processes and tasks reducing the output variation

Audit Trail
- ✓ Fully maintained logs essential for compliance
- ✓ Enable analytical insights

Productivity
- ✓ Freeing up manual resources for more value-added tasks

Elasticity / Flexibility
- ✓ Instant ramp-up/down to deal with spikes and troughs in demand

Staff Retention
- ✓ Allows focus shift towards more stimulating tasks

Reliability
- ✓ 24/7, all year around, full availability

Right Shoring
- ✓ Geographical independence allow "right shoring" without negative business impact

blueprism
WorkFusion
Fusion
winautomation
Celaton
IPSOFT
openspan
EXELANT
UiPath
AUTOMATION ANYWHERE

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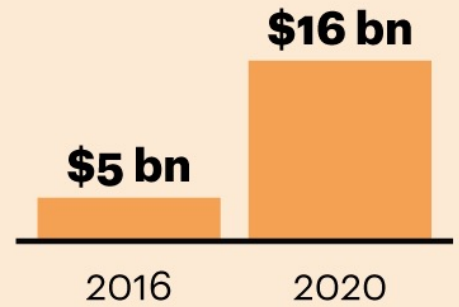
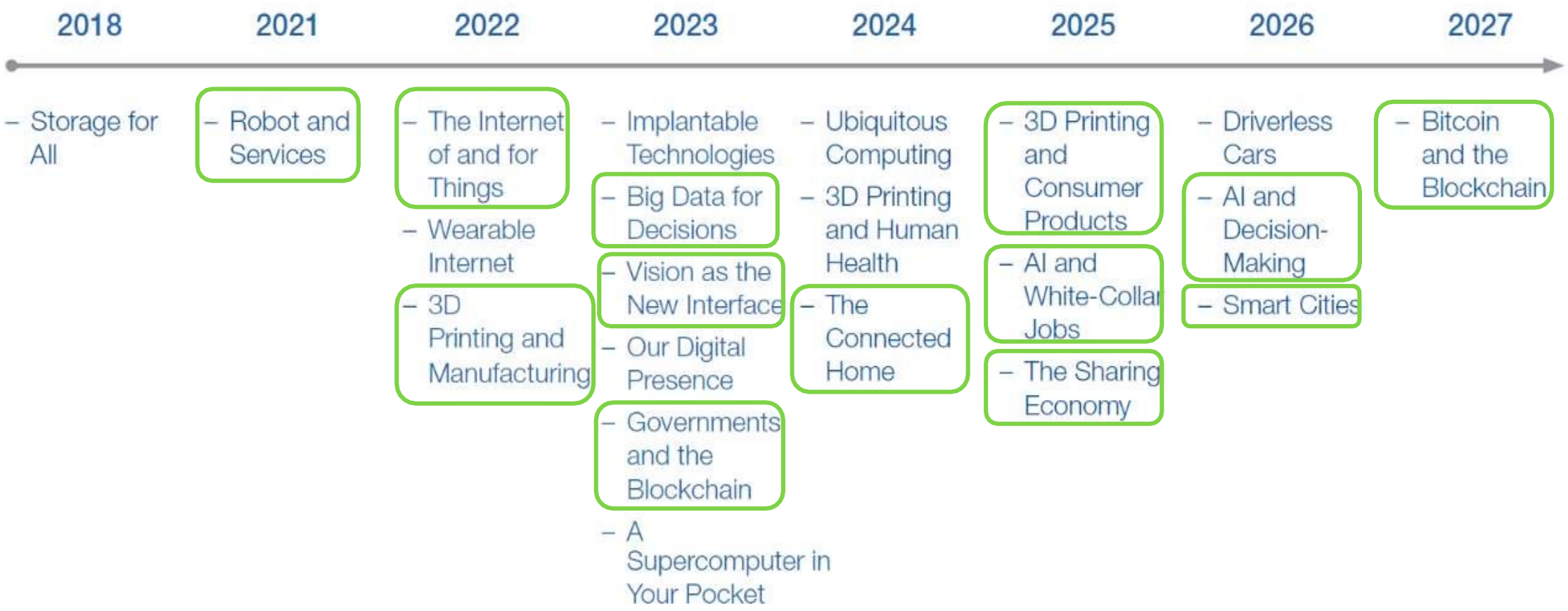


Recent surge in metal capabilities

Source: A.T. Kearney

Technologies AT “Tipping Point”

2018 - 2027



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FB: Marsudi Wahyu Kisworo
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+62818-888-537