



Internal Audit Community of Practice (IACOP)

IT AUDIT: From Theory to Practice

WEBINAR

November 23, 2020

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Disruptive processes in the Audit Context

□ Agenda

- The 4th Industrial revolution
- The most important disruptive technologies
- Is this a topic of interest to auditors?

Navigating the next industrial revolution



Revolution	Year	Information
	1	1784 Steam, water, mechanical production equipment
	2	1870 Division of labour, electricity, mass production
	3	1969 Electronics, IT, automated production
	4	? Cyber-physical systems



The 4th Industrial Revolution

□ World Economic Forum – January 2016

□ Components

- Big Data, Artificial Intelligence, Block Chain, Robotics, Virtual Reality,
- Autonomous vehicles, Nanotechnology, Biotechnology,
- Materials science, Energy storage, Quantum computing, etc....

□ Call upon world-leaders to prepare for what is to come

- Introduction speech – summarized

□ Video link

- <https://www.youtube.com/watch?v=khjY5LWF3tg>

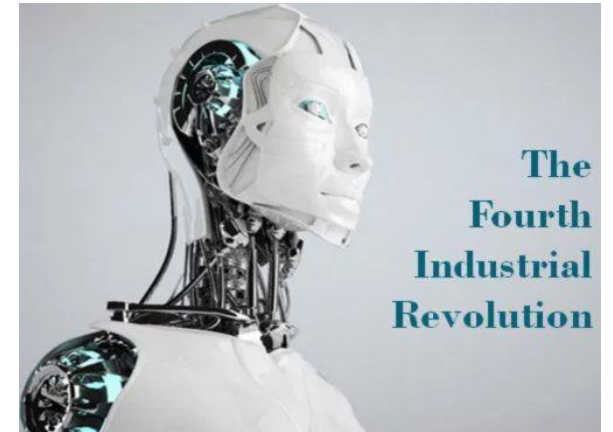


Introduction Statement - Chairman of WEF - January 2016

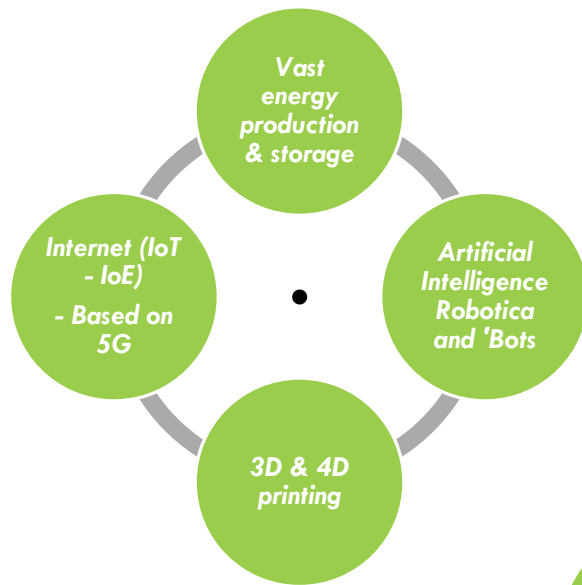
- “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another.
- “In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before.”

The 4th Industrial Revolution

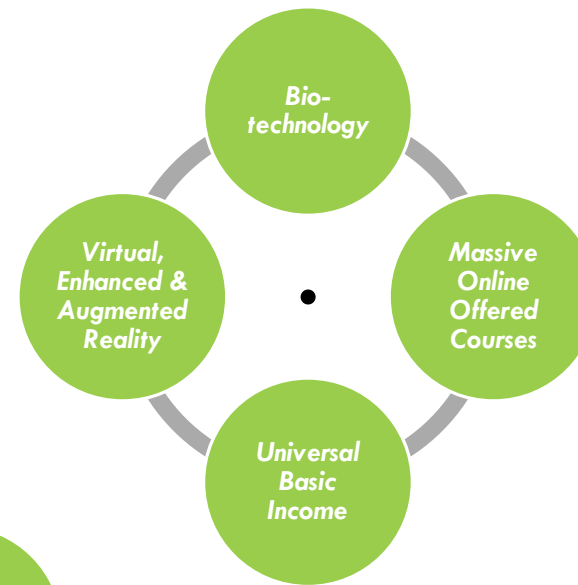
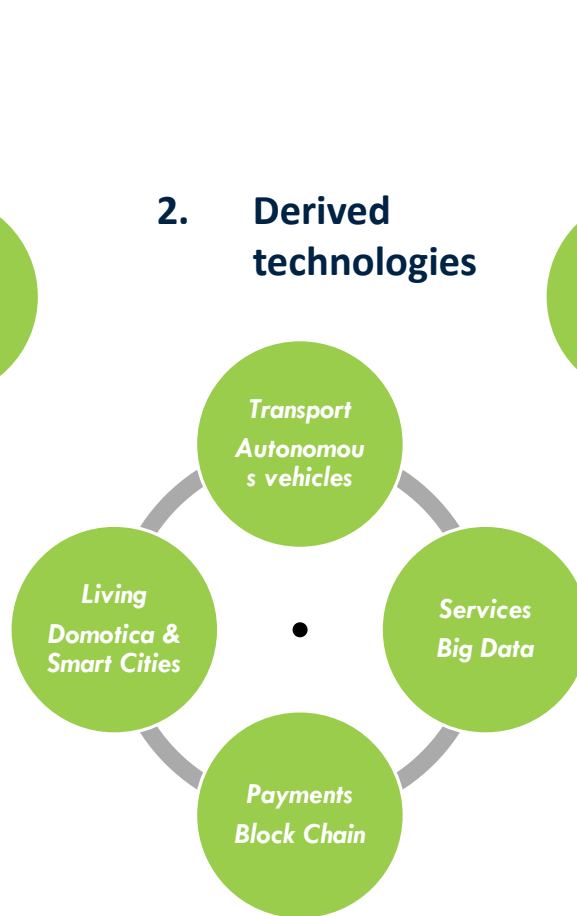
- ❑ Today's Internet is expanded with the Internet of Things (IoT)
- ❑ People will be connected to Internet of Everything (IoE)
 - ❑ By means of wearables and electronical implants
- ❑ The IoE will be embedded in our daily lives
 - ❑ Without having to actively connect to it, in order to use it
 - ❑ It will be there, without thinking about it
 - ❑ Like the air we breath – we don't think about taking a breath, nor about the air itself
- ❑ The technology of Internet will disappear in the background, to become part of us all the time
- ❑ This process will take approximately three decades only
 - ❑ Started in 2010 and expected to be fully integrated in society by 2040



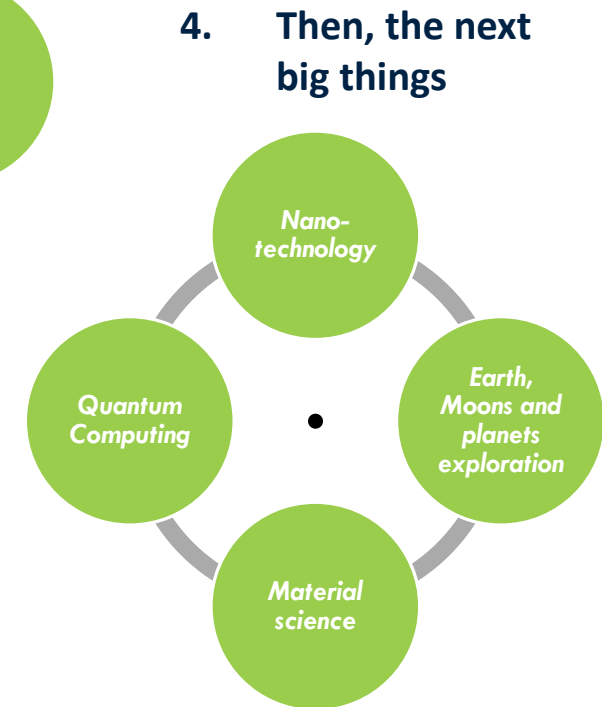
The 16 most important Disruptive Technologies



1. Building Blocks of the 4th Industrial Revolution

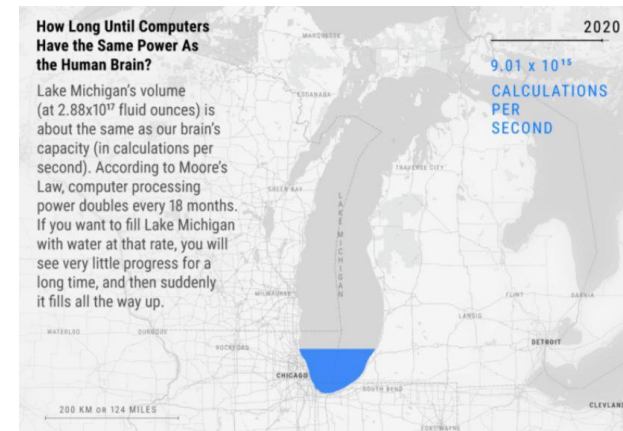


3. Human implications



Speed of onset

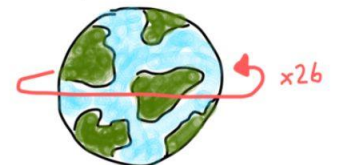
- ❑ Technology is not suddenly going to come to a stop
 - ❑ At the contrary, it will increasingly go faster
 - ❑ Linear thinking: from 1 to 100 are 100 steps
 - ❑ Exponentially is that (less than) 8 steps
 - 1, 2, 4, 8, 16, 32, 64, 128
 - In 6 steps not yet in 1/3rd
 - The next two steps more than reach the goal
 - Moore's law
 - Computer capacity doubles every 18 months
 - "It comes to an end!"
 - Has been said many times in the past already – but is still going on
 - Sometimes also referred to as the 'tsunami' effect



If your stride is 1 meter, 30 linear steps will take you 30 meters from the starting point.



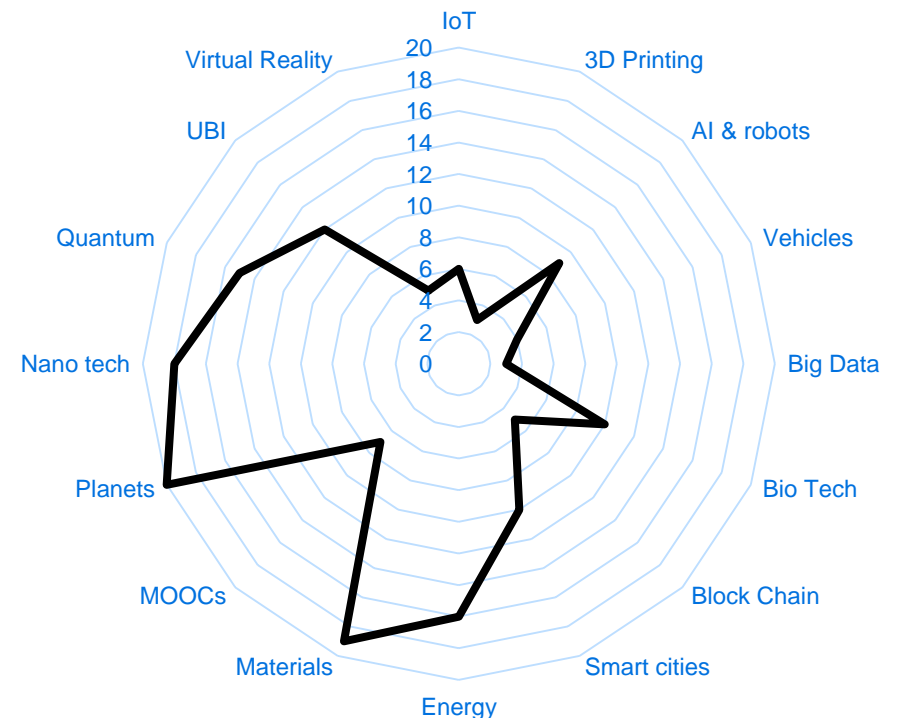
With a 1 meter stride, 30 exponential steps will take you 26 trips around the world!



When will it change?

- ❑ Nobody can predict the detailed future
 - ❑ Time horizon was set at 25 years mostly realized by 2042
 - ❑ When exactly which technology will break through, is hard to predict
 - ❑ Graph is only an example of what could be...
 - ❑ Also next slide: Gartner Hype Cycles
- ❑ Is all this really going to happen?
 - ❑ Yes, it is irreversible; the seeds were already planted
- ❑ Is society going to survive this?
 - ❑ Open question
 - ❑ Must be careful
 - ❑ Only when it will support us

Technology in Years to completion, just an example

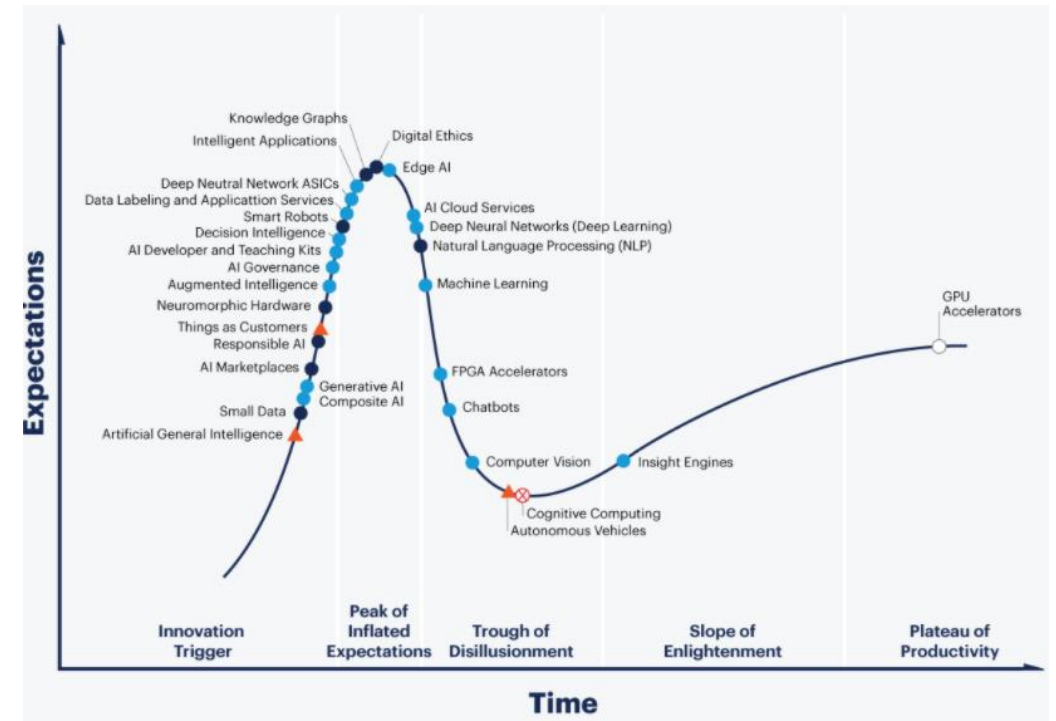
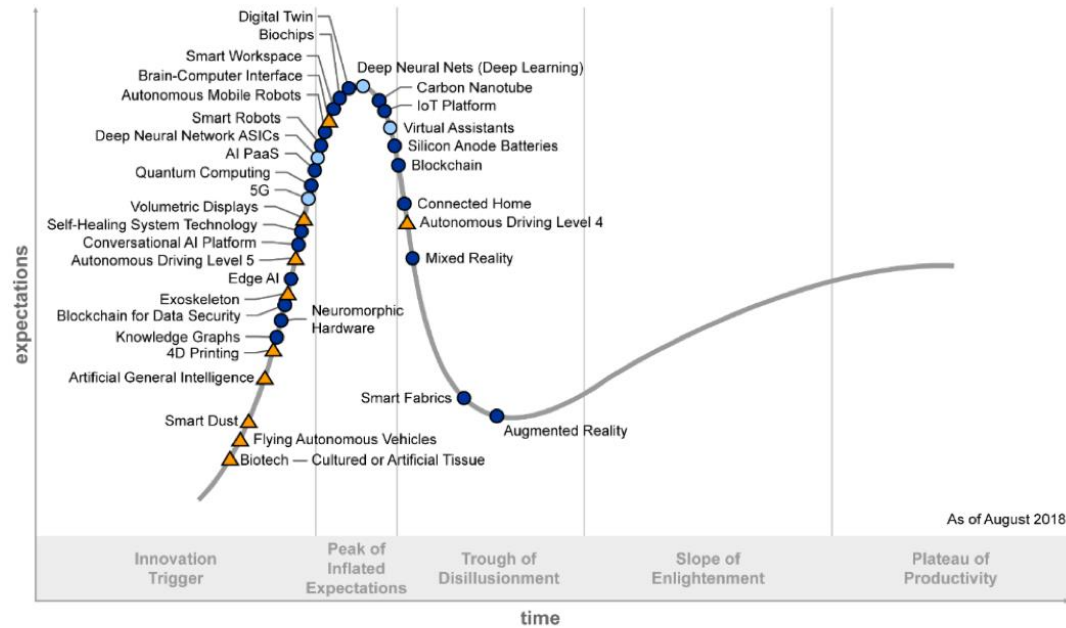


When will it change?

□ Gartner Hype Cycles

□ Per subject

□ Per year



Role of Internal Audit

- Internal Audit should provide important insights on disruption, considering the impact on the whole organization
 - Stakeholders expectations
 - Are the strategic objectives aligned for disruption?
 - Are disruptive technologies accepted in the organization?
 - How are disruptive technologies implemented and utilized?
 - ...
- Internal Audit is well-positioned to assess risks arising from disruptive change
 - Are disruptive implications for the organization sufficiently examined, including changes to the organization's culture, work environment, business plans, customer's expectations...?
 - Mind that processes become data driven instead of procedural
 - Have these data risks been identified and are they sufficiently addressed?

Role of Internal Audit

- ❑ Disruptive change is coming - this is irreversible and unavoidable
 - ❑ 5G will boost the IoT/loE, on top of which AI and robots will materialize
 - ❑ Disruption is a discontinuity from the past, it is not destructive
- ❑ Benefits
 - ❑ Safety, Health, Profits
- ❑ The future is controversial
 - ❑ Still a lot of uncertainty, maybe even fear
- ❑ Taking on our role as auditors
 - ❑ Give insight to our organizations
 - ❑ Also play our role in society
 - ❑ Embrace the future
 - ❑ Help other to prepare
 - Communication, assurance, join in



ANY QUESTIONS?



THANK YOU!