



UNIC | Institute For
the Future

Convergence of Transformative Technologies

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Who we are

University of Nicosia
Institute For the Future & Blockchain Initiative
(IFF)

Our **mission**:

- To educate leaders, develop knowledge and build communities to help society prepare for a future shaped by transformative technologies.

Our **vision**:

- To push the boundaries of knowledge in exponential technologies and to inspire our students to become technology leaders of tomorrow.

Our **goals**:

- To bridge the supply/demand skill gap in emerging technologies through continuously evolving educational offerings to meet the changing needs of the market.
- To build global communities of highly engaged learners and professionals.
- To foster partnerships with academia and industry.
- To carry out basic and applied research, commercializing its outcomes where relevant.

Leading Digital Assets and Web3 Education & Research Since 2013

**1st University to offer crypto education,
MSc in Blockchain & Digital Currency**



**95,000+ participants
in crypto, blockchain
and Web3 training
from 120+ Countries**



**1st to publish
blockchain-verifiable
academic certificates
as NFTs**



**M GLOBAL
FORECASTING
COMPETITIONS**



**FREE MOOCs:
-DIGITAL CURRENCIES
-DEFI
-NFTS & METAVERSE**



**ONLINE & ON CAMPUS
MSc DEGREE IN
BLOCKCHAIN AND
DIGITAL CURRENCY**



**ONLINE MSc DEGREE
IN COMPUTER SCIENCE
& BLOCKCHAIN
TECHNOLOGIES**



**MSc DEGREE IN
METAVERSE SYSTEMS
*UNDER DEVELOPMENT,
EXPECTED TO BE
OFFERED IN 2023**



**ONLINE BLOCKCHAIN
ACADEMIC
CERTIFICATION
PROGRAMS**



**BLOCKCHAIN PROTOCOLS,
DECENTRALIZED FINANCE,
MACHINE LEARNING,
FORECASTING**



**INDUSTRY & EU
FUNDED APPLIED
RESEARCH**



**DECENTRALIZED
CONFERENCE &
CHAPTERS**



**GLOBAL
FORECASTING
COMPETITIONS**

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Zoo Constantinou



Valentinos Theofilou



Demotrios Tsoas



Gamaliel Dafa Tuoyo



Myvonne Alasia



Marika Soth



Aiki Ntouzou

IFF at a glance

Cross-disciplinary research institute at the University of Nicosia (UNIC), focusing on technologies shaping the 4th industrial revolution. Our emphasis for 2020 is on two areas:

- **Blockchain**, including digital currencies and tokenized assets
- **Forecasting**, through the Makridakis Open Forecasting Centre (MOFC)

Academic Education & Professional Training

World's first **MOOC** on digital currencies (2014)
MOOCs in DEFI and NFTs and Metaverse
World's first academic degree on blockchain (**MSc in Digital Currency**)

Professional Training Programs

Research & Technology Development

Applied research projects
(EU research grants, industry funding)

Commercial spin-off
(Block.co)

Community Building

World's premier blockchain learning conference & community
(Decentralized)

Global forecasting research competition & conference (**M-competition**)



The UNIC Open Metaverse Initiative

A new comprehensive initiative focused on the academic, research and policy issues relating to the metaverse.

About the Initiative

The Department of Digital Innovation and the Institute for the Future (IFF) of the University of Nicosia (UNIC) recently announced the UNIC Open Metaverse Initiative, a new comprehensive initiative focused on the academic, research and policy issues relating to the metaverse, with a particular emphasis on open public systems and standards.

Focus Areas:



Academic/Professional
Training Programmes



Research
& Policy



Innovation and
Entrepreneurialism



NFTs on
Campus

For more information please visit: unic.ac.cy/openmetaverse

Academic / Professional Training Programmes

- A free online 12-week course “NFTs and the Metaverse” starting October 7, 2022.
- A new Master programme in Metaverse Systems, an interdisciplinary programme focused on preparing creators, developers, architects, social scientists, financial professionals, policy makers, and others for careers in metaverse design and management.

Research & Policy

- The Center for an Open Metaverse (COM) – A new interdisciplinary research center within the Institute For the Future, focused on research on open metaverse systems.
- The Open Metaverse Alliance (OMA) – a consortium of universities, corporations, non-profits, and governmental organizations committed to developing an open metaverse.

Innovation and Entrepreneurialism

- Public launch of the first cohort of UNIC incubated NFT/metaverse startups (December 2021).
- Annual cohorts of NFT/metaverse startups.
- Support for emerging NFT/metaverse creators.

NFTs on Campus

- The first permanent university gallery for NFTs (The Block Gallery, inauguration November 2021).
- An NFT-based system for various campus activities within UNIC’s main Nicosia campus.
- The acceptance of NFTs by the University of Nicosia Foundation as donations for student scholarship and research support.

Decentralized

Top 5 University Bitcoin Courses



The Global Universities Embracing Cryptocurrency

#1 University of Nicosia

#2 University of Cumbria

#3 Simon Fraser University

#4 MIT

#5 New York University

#6 Duke University

#7 McGill University

#8 Pompeu Fabra University

#9 Imperial College

Source: [Coindesk, 2015](#)

Top 5 University Bitcoin courses

#1 University of Nicosia

#2 New York University

#3 Stanford University

#4 Princeton

#5 Duke University

Source: [The Merkle, 2017](#)

Top 5 Universities Offering Courses in Blockchain

#1 University of Nicosia

#2 Massachusetts Institute of Technology (MIT)

#3 Cornell University

#4 IT University of Copenhagen

#5 Indian Institute of Management Calcutta (IIM-C)

Source: [The Medium, 2020](#)

The best Universities to study Blockchain in Europe

#1 University of Nicosia

#2 Universidad de Alcala

#3 University of Stirling

#4 Imperial College Business School

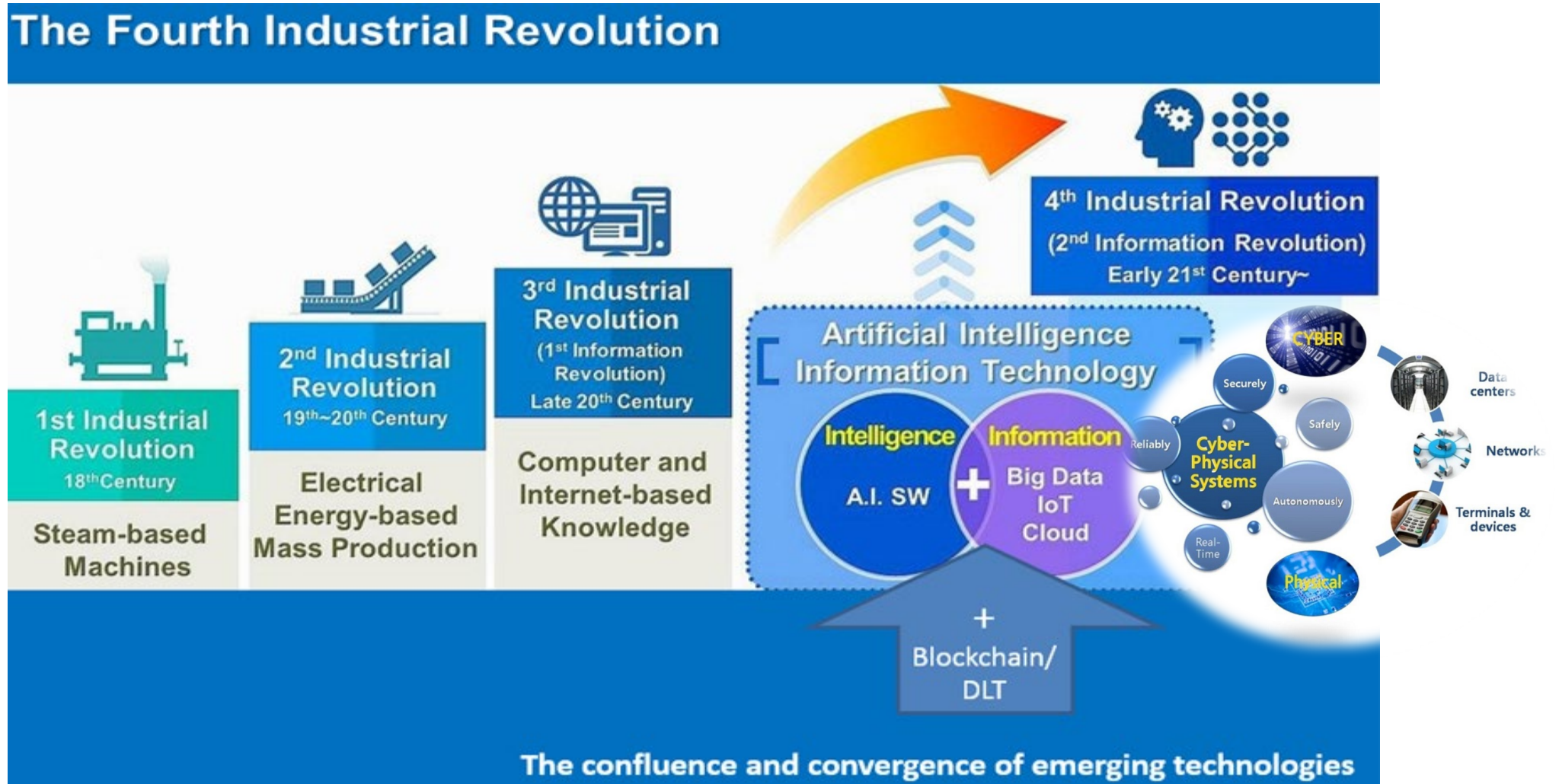
#5 UCL Centre for Blockchain Technologies

Source:

<https://invezz.com/cryptocurrency/blockchain-universities/>

Digital Transformation: Setting the Scene

The Dawn of the 4th Industrial Revolution



The Future of Digital Transformation

So, what does all this mean for the future?

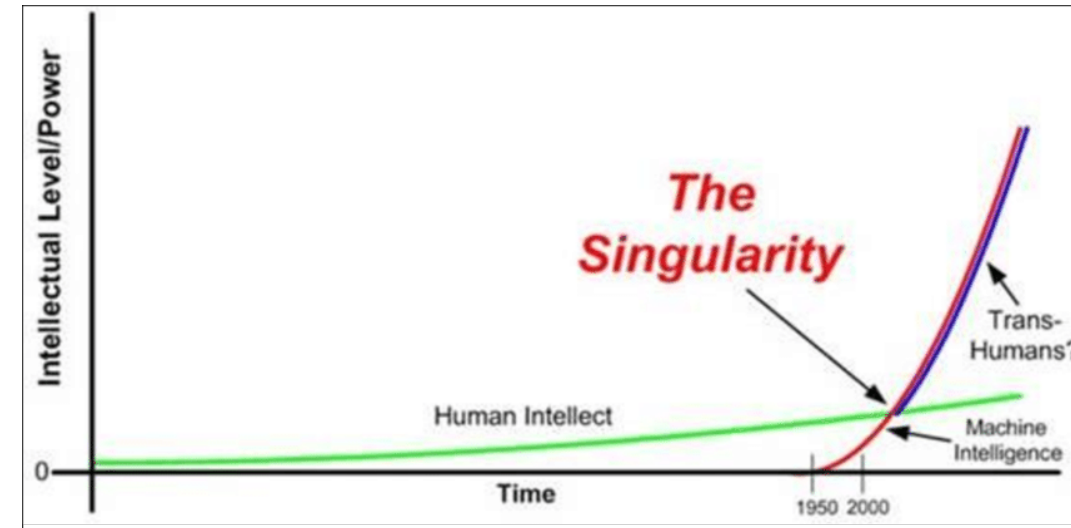
#1: Artificial superintelligence will trigger runaway technological growth, resulting in profound changes to human civilization.

- As superintelligence continues to upgrade itself, technology would advance at an incomprehensible rate.
- At some point, **machines will be more intelligent than humans.**
- **Singularity!** (we cannot predict the outcome)

#2: Major trends: Decentralization & Machine Intelligence

- From the Internet of information to the Internet of value
- M2M/H2M commerce
- New forms of corporations (code-only, autonomous) - DAOs

#3: Implications for economic growth & social disruption



Consequences have been hotly debated:

Some (R. Kurzweil) claim that humanity **will transcend the limitations of the human body and brain.**

Others (S. Hawking, E. Musk) claim that the singularity could lead even to **human extinction.**

Socioeconomic effects

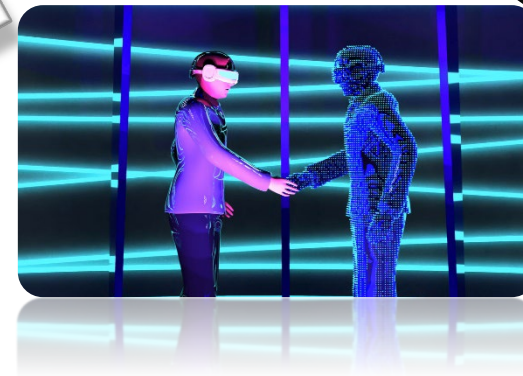
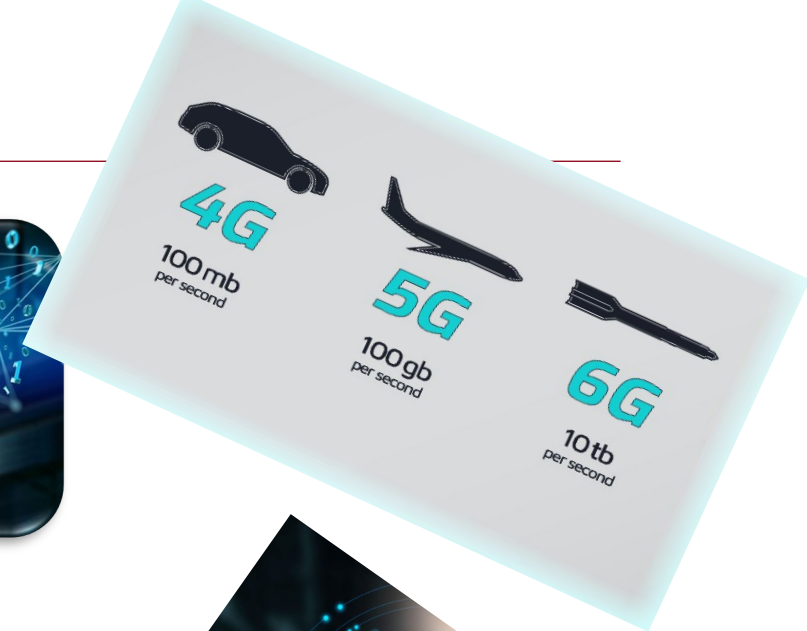
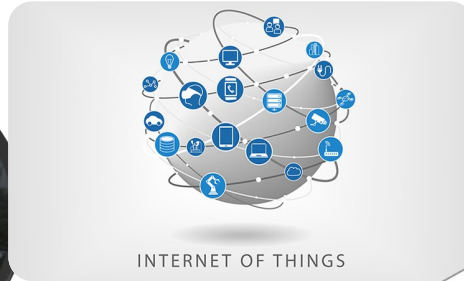
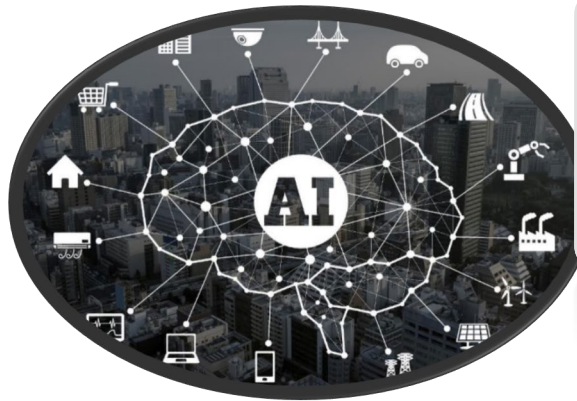
Job creation, inequality and cohesion



- Last year (2021), almost 9 million people in the EU worked as ICT specialists, representing 4.5% of the total EU workforce.
- The share of ICT specialists has been increasing in the EU by 1.3% since 2012.

Overview of some transformative technologies

Examples of Transformative Technologies



<https://www.hitec-dubai.com/back-to-basics-using-big-data-to-improve-customer-experience/>
<https://www.internationalairportreview.com/news/77041/iot-charleroi-passenger-experience/>
<https://newsroom.intel.com/news/many-ways-define-artificial-intelligence/#gs.b8w4i6>

<https://www.simplilearn.com/how-to-start-a-career-in-blockchain-technology-article>
<https://www.analyticsinsight.net/understanding-three-types-of-artificial-intelligence/>

<https://www.vcloudgroup.net/event/cloud-computing/>

Blockchain - The Internet of Value

The Origin

Blockchain was introduced, in 2008, as the technology underlying Bitcoin, the platform and cryptocurrency that has gained immense popularity due to the upward trend in the value of bitcoins.

The Potential

Despite it being invented to support Bitcoin, important stakeholders from various industries recognized its potential and started exploring applications of the technology to either improve current practices, or create new ones that were not possible until now.

- A distributed **ledger** of any type of transactions;
 - **Transaction** – exchange of data that represent medical data, consumer details, product data....
 - **Shared:** blockchains do not make much sense unless two or more parties (or systems) are involved.
 - **Time-stamped:** transactions are stored in chronological order.
 - **Append-only:** you can only add new transactions to a blockchain. **Immutable:** Once written, a transaction cannot be erased or altered.
 - **Cryptographically-secured:** advanced cryptography enables all the above
 - **Enables smart contracts:** can be programmed so that certain conditions are met.

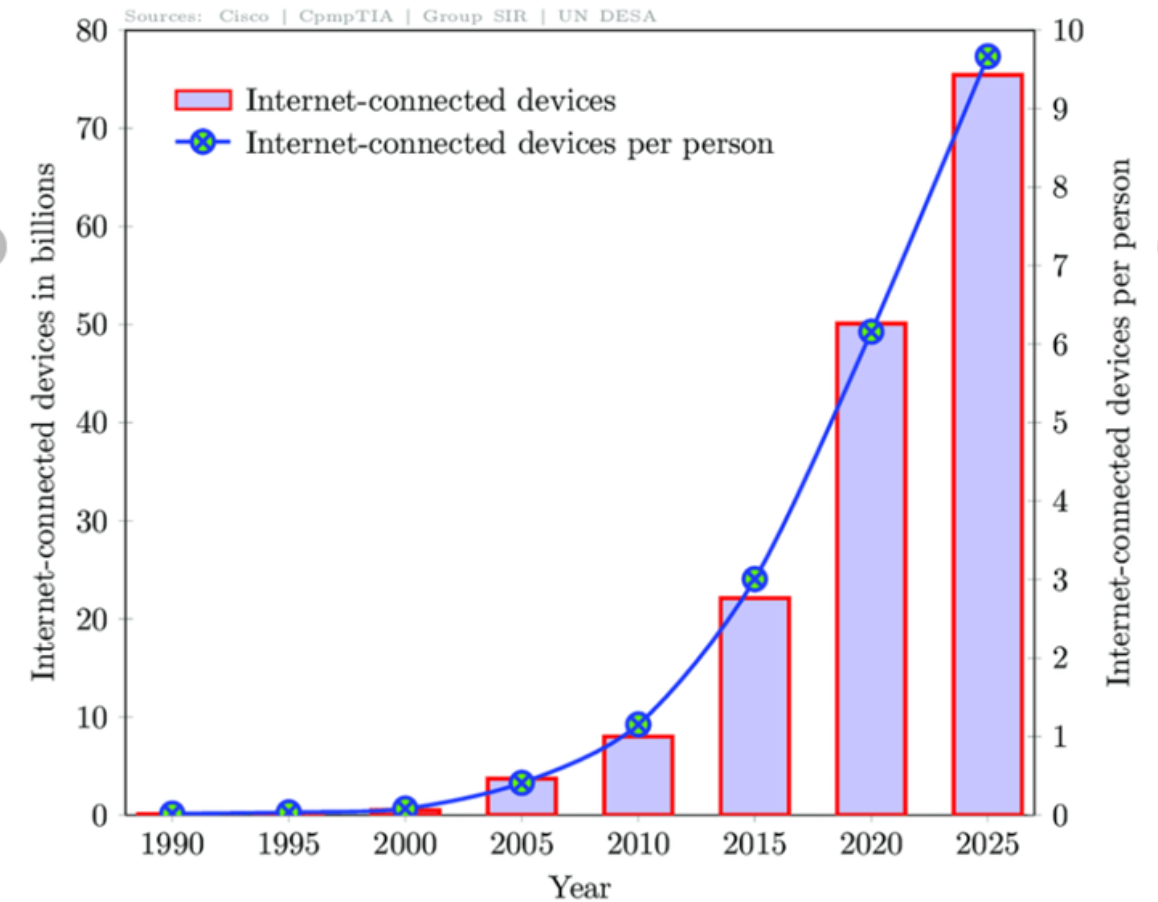
Blockchain Applications



Internet of Things (IoT)

IoT is larger than IoH (Internet of Humans)!

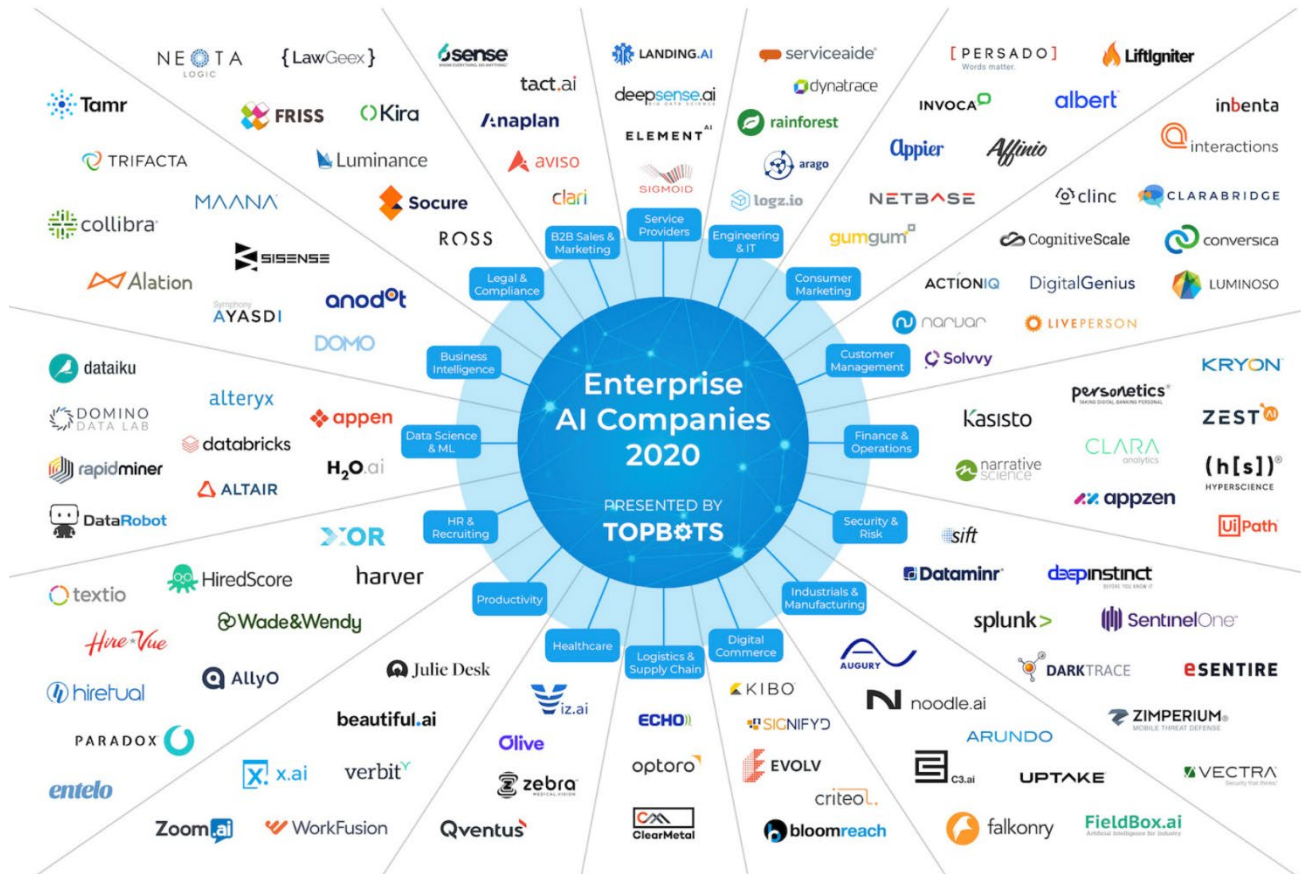
- Most people do not realize just how many objects are (autonomously) connected to the internet
 - Size of IoT surpassed that of the human internet
- Internet-connected devices:
 - 75.44 billion devices are to be installed by 2025 worldwide



https://www.researchgate.net/publication/332331620_Ranked_Sense_Multiple_Access_Control_Protocol_for_Multichannel_Cognitive_Radio-Based_IoT_Networks/download

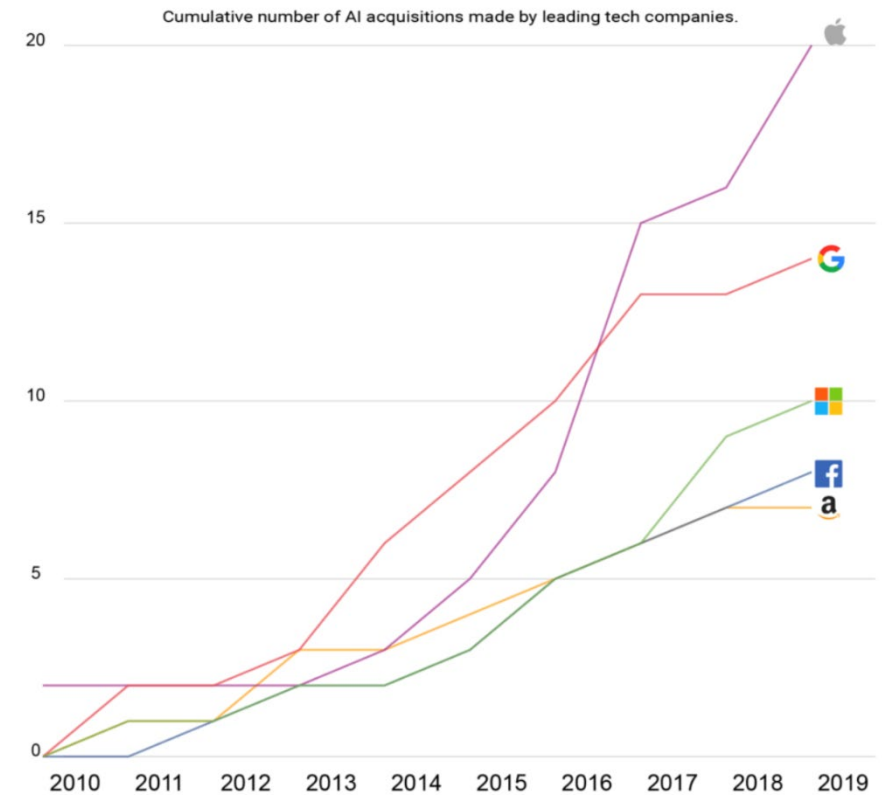
Artificial Intelligence (AI)

A fast growing area capturing the interest of tech giants



Source: <https://www.topbots.com/enterprise-ai-companies-2020/>

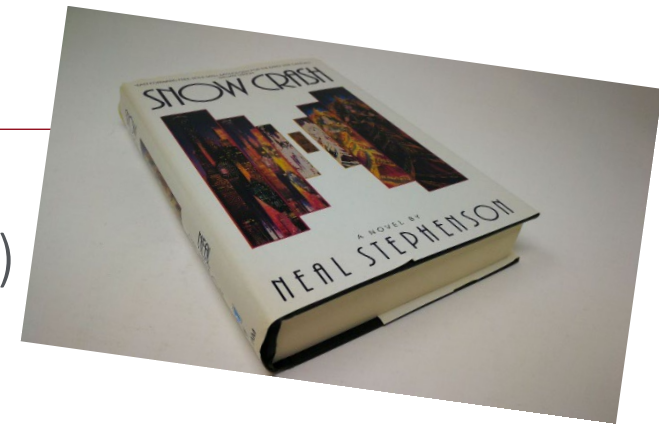
THE RACE FOR AI



Source: <https://www.cbinsights.com/research/top-acquirers-ai-startups-ma-timeline/>

Metaverse

- Term first used in Neal Stephenson's novel "Snow Crash" (1992)
- Metaverse
 - Where users can create their own avatars for carrying out transactions
 - Collective virtual shared space, created by the convergence of virtually enhanced physical reality and physically persistent virtual space, including the sum of all virtual worlds, augmented reality, and the Internet.
 - **My definition** – the convergence of the physical and the digital world! (we immerse ourselves to the digital world to escape from a dystopian reality)



Convergence of Technologies

Blockchain converging with IoT and AI

A future of transacting intelligent machines

- Individually, each of these technologies deserves all the attention they're getting as enablers and disruptors
- But, taken together?
- Their transformative effect becomes multiplicative
- **A future driven by machine connectivity, data exchange and commercial services:**
 - **IoT** connects billions of machines and sensors generate unprecedented quantities of real-time data
 - **AI** enables the machines to act on data and trigger services
 - **Blockchain** - safely stores/transmits trustworthy data, creating a new internet layer – removing the intermediaries across industries, enabling us to move from the Internet of information → to the Internet of value and trust

Toward a world of machine commerce

Crypto: New forms of money

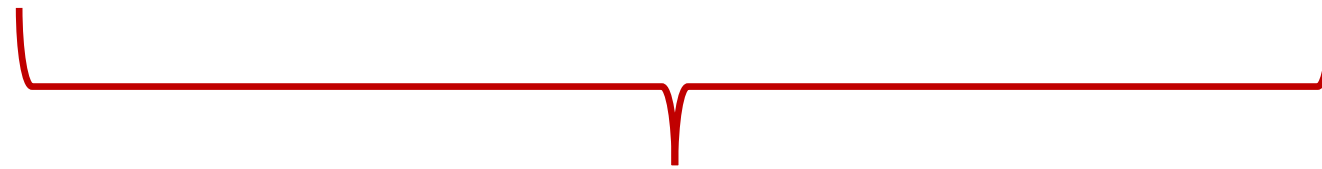
Programmable & active

Money for machines?

DLT: Internet of trust

Alone: Remove middlemen

With AI/IoT: Remove men?



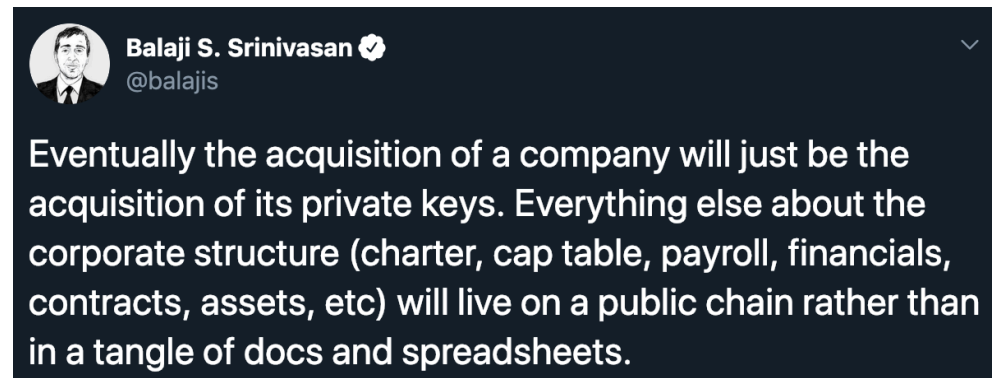
Consequences

Autonomous, AI-based, economic agents

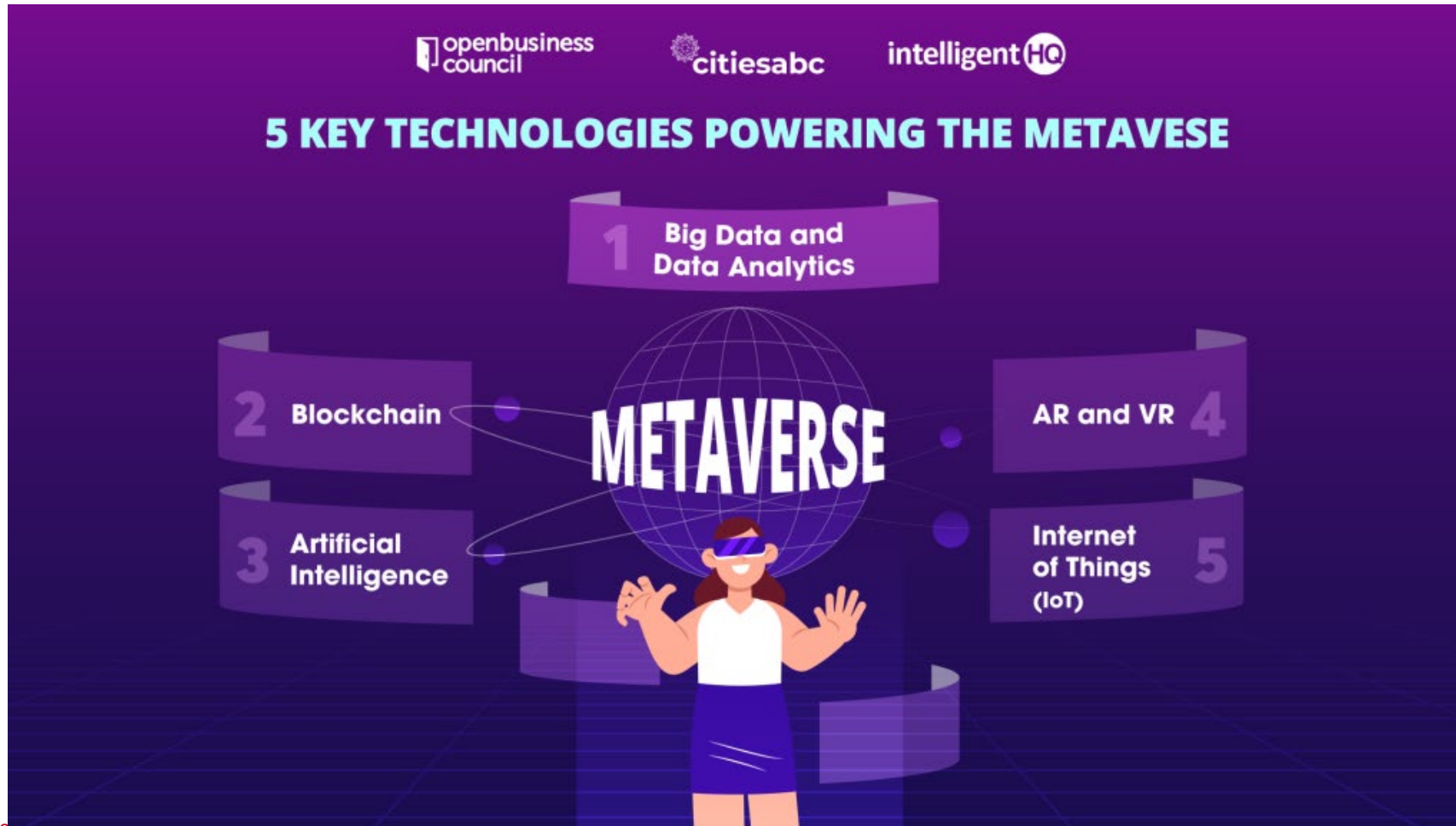
Human-to-machine (H2M) and machine-to-machine (M2M) commerce

Next milestones: Decentralized Organizations (DOs)

- DOs are good at:
 - Coordinating resources that do not know/trust each other (including hybrid H/M)
 - Governing in a geography-agnostic, censorship-resistant manner
 - Enabling short-term or informal organizational structures (networks/communities)
 - Tracking and rewarding contribution
- Challenges
 - Jurisdictional issues
 - Legislating new types of work for humans and work rules for machines
 - Governance modalities, including external supervision



Next milestones: Metaverse



[Key Technologies for the Metaverse \(waynerz.com\)](https://www.waynerz.com/), [What Are the Top 5 Technologies Powering the Metaverse? \(citiesabc.com\)](https://citiesabc.com/)

Challenges

- New/upgraded system architectures
 - From legacy to blockchain/AI/IoT-native systems
 - Integration, interoperability, backward compatibility
- Advanced analytics capabilities
 - As devices at the edge become smarter, the smart contracts enabled by blockchain platforms will require more advanced data analytics capabilities and gateways to the physical world
- New business models
 - Disruptive innovation will dominate – but not without boom-and-bust cycles and big failures along the way
 - Winners will NOT be the ones focusing on efficiency gains, but on disruptive models
- Technology maturity;
- Regulatory framework;
- Consumer protection;
- Standards to use blockchain on an industrial scale are still not in place;
- Replacing existing infrastructure – time and investment;

Concluding Remarks

- Look out for the new exciting innovations that are emerging!
- Align these innovations with the sustainability challenges humanity is faced with – in order to protect our planet for the future generations!

Social consequences will be vast

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

Charles Darwin



UNIVERSITY *of* NICOSIA

**Dept. of Digital Innovation
&
Institute For the Future**

Thank You!

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