



# Approaching the Next Evolutionary Eventhorizon

At the intersection of AI, synthetic biology, and quantum computing in a hyperconnected global ecosystem

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[www.historianofthefuture.com](http://www.historianofthefuture.com)

# The Holographic Perspective

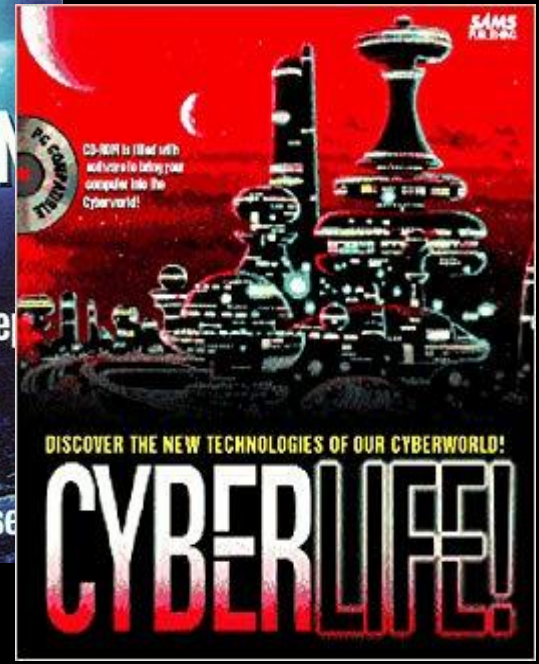
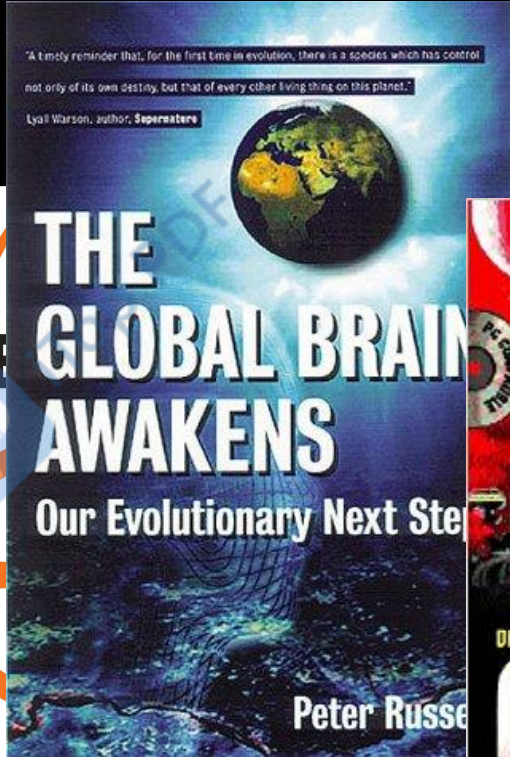
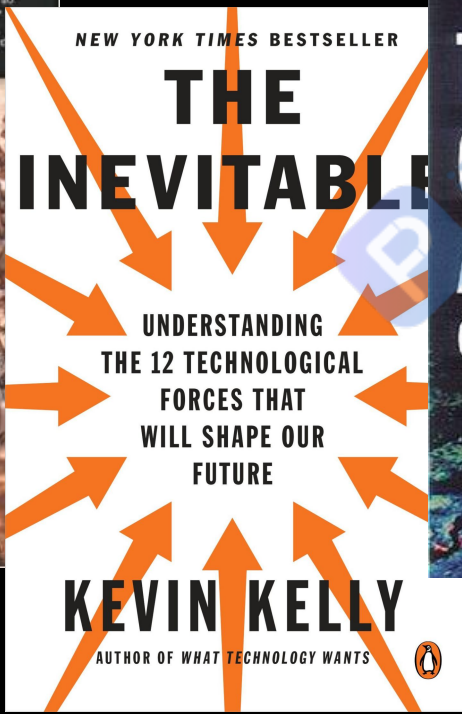
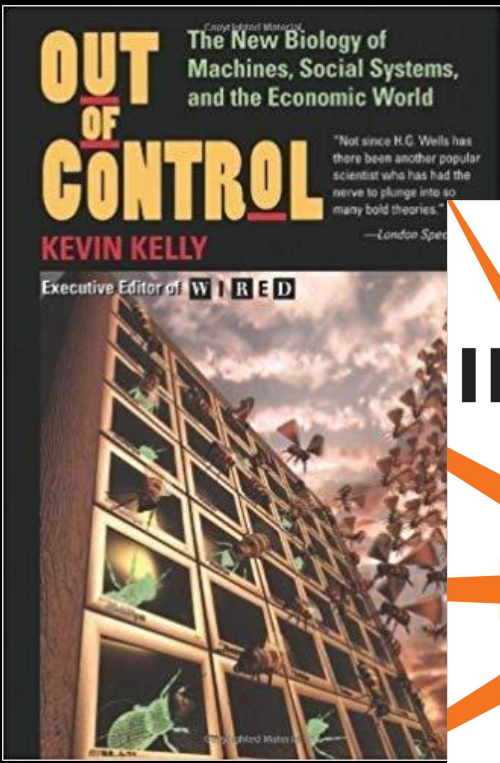
- All living things are systematically interconnected
- Definition of “living things” extends to systems, processes, entities which behave biologically



"Any sufficiently advanced technology is indistinguishable from magic" - Arthur C Clarke

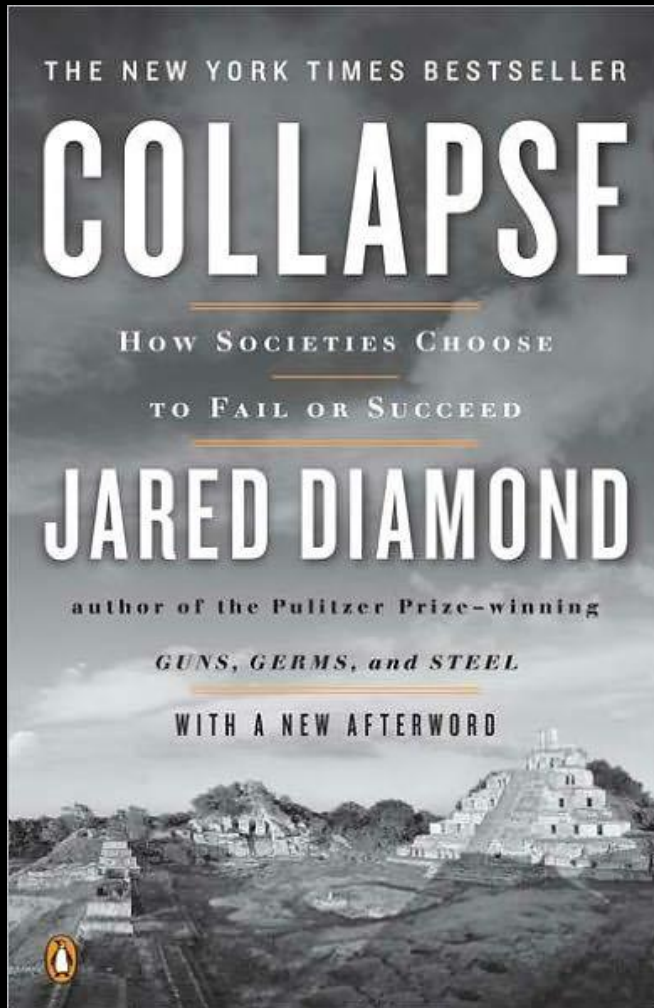
"The future is already here — it's just not very evenly distributed." – William Gibson

# Evolution into the Next Paradigm -

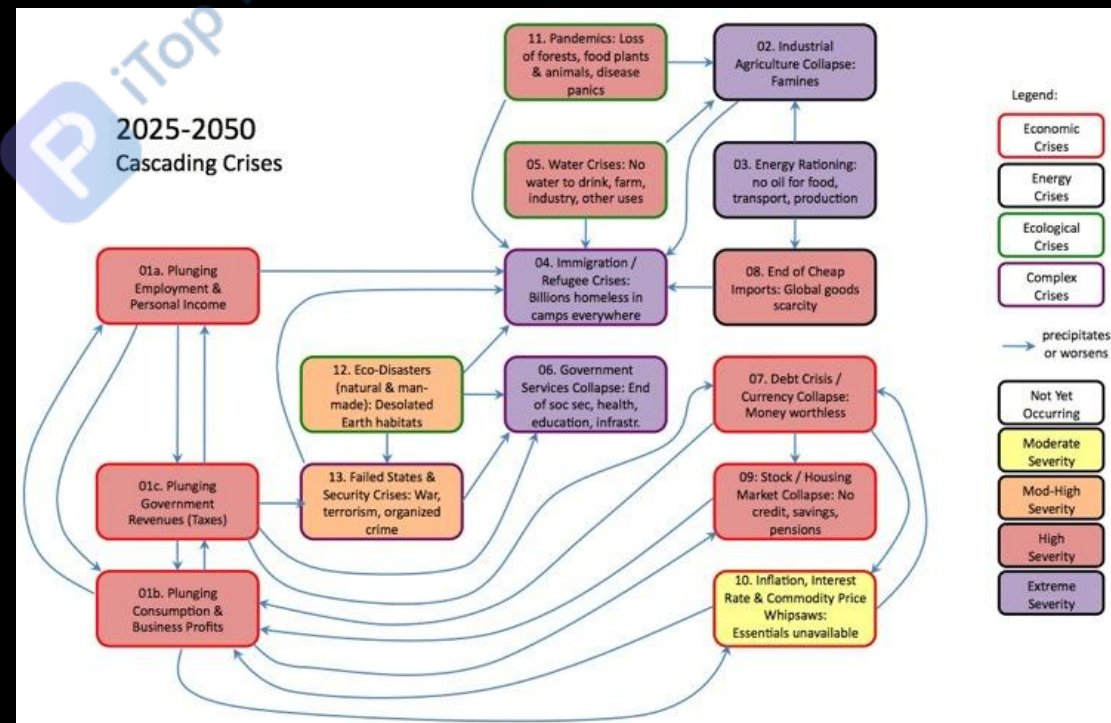


“ What appears to be the future for many, is already the past for some, who are now unfolding it into the present. “ Charles Ostman

# Evolution into the Next Paradigm -

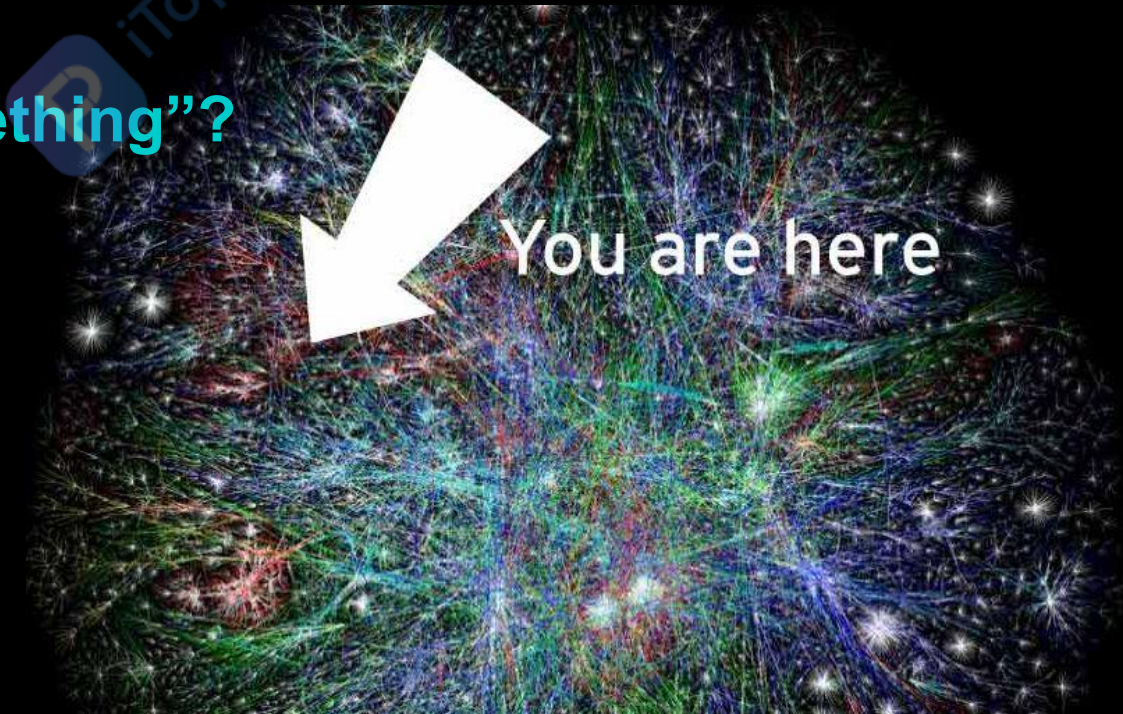
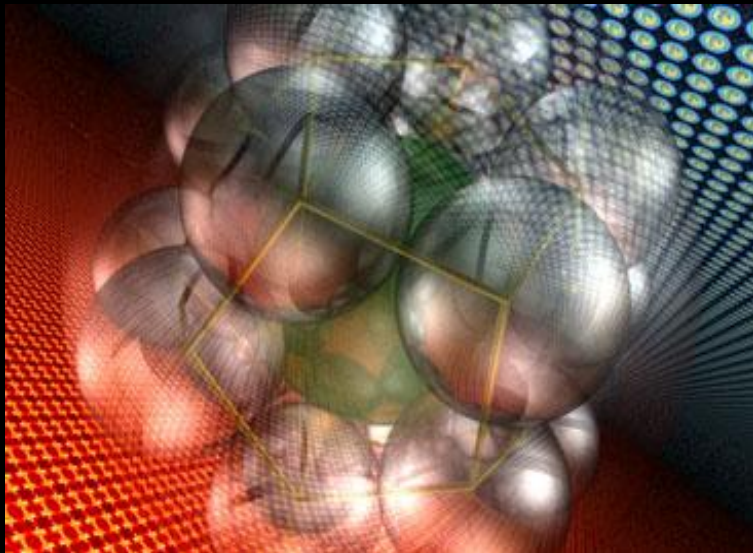


## Intersection of chaos theory and evolutionary systems dynamics



# Ubiquitous Cultural Constants

- All living things are “interconnected”
- Life extends beyond the physical form
- Indigenous cultures on 5 continents foretelling “something of great significance” that will occur within the 1<sup>st</sup> 3<sup>rd</sup> of the current 21<sup>st</sup> century.
- **What is the “next something”?**

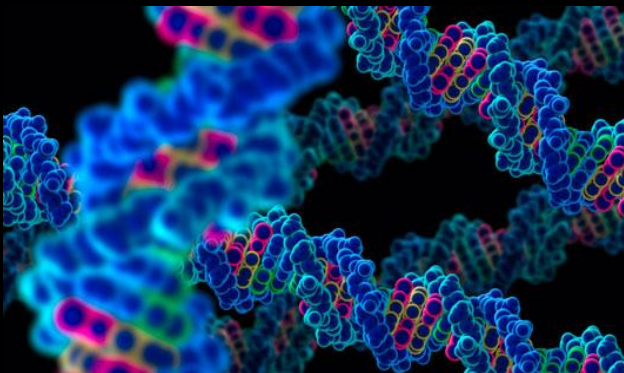


# Cultural Imperatives of the Evolutionary Eventstream

- Knowledge complexity, scale, and velocity is exceeding human capacity for mission critical decision rendering compressed into ever shortening time scales, in a hyperconnected operational ecosystem.
- What is the next “something”?

Evolutionary eventhorizon, the emergent next paradigm . . .

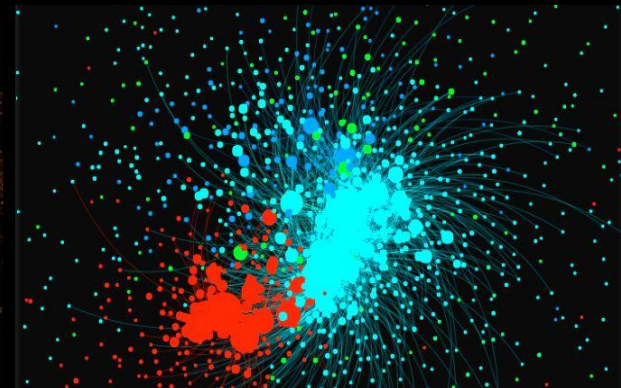
Synthetic biology  
Genetic morphology



Global “brain” networks  
Computational resource



Artificial intelligence  
Synthetic Sentience



# Cultural Imperatives of the Evolutionary Eventstream

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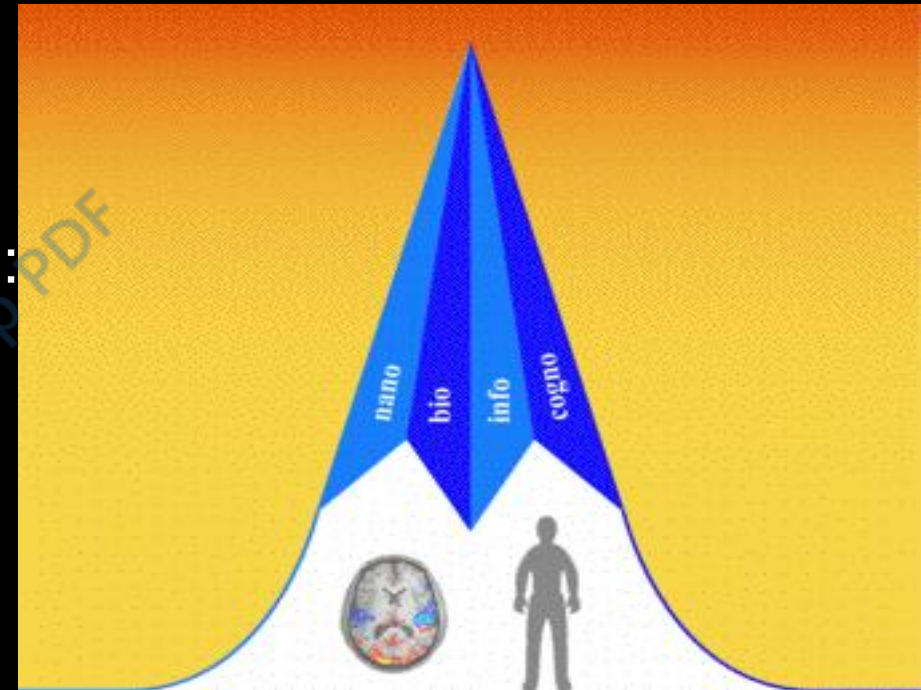
A brief glimpse into the next paradigm . . .

The merging of the real and the virtual into a ubiquitous continuum



# The Emergent Nano / Bio / Info / Cogno tech Operational Ecology

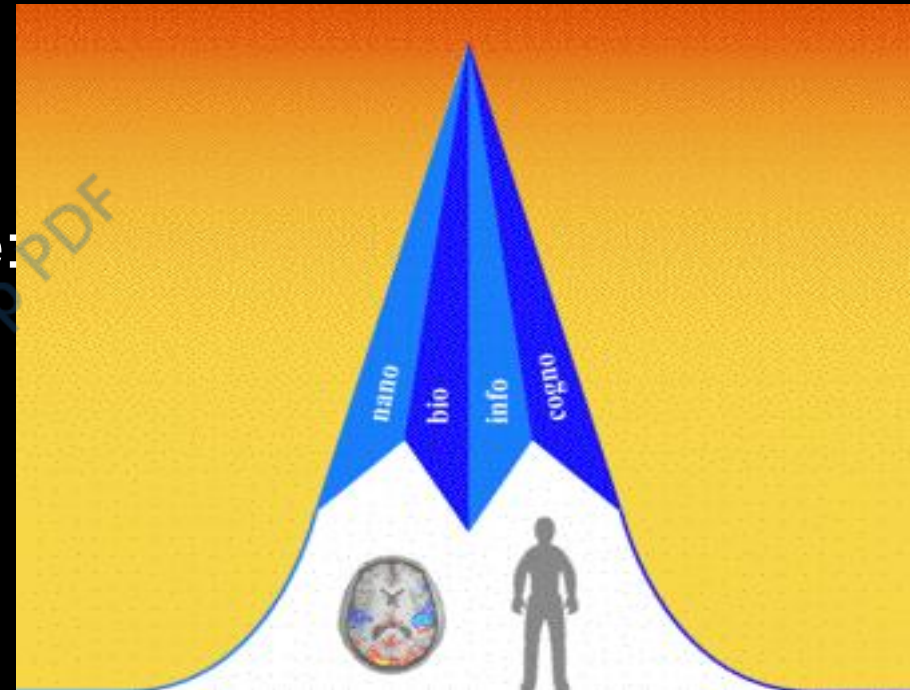
NBIC Conference  
Converging Technologies  
for Improving Human Performance:  
Nanotechnology, Biotechnology,  
Information Technology and  
Cognitive Science  
NSF/DOC-sponsored report  
<http://www.wtec.org/ConvergingTechnologies>





# The Emergent Nano / Bio / Info / Cogno tech Operational Ecology

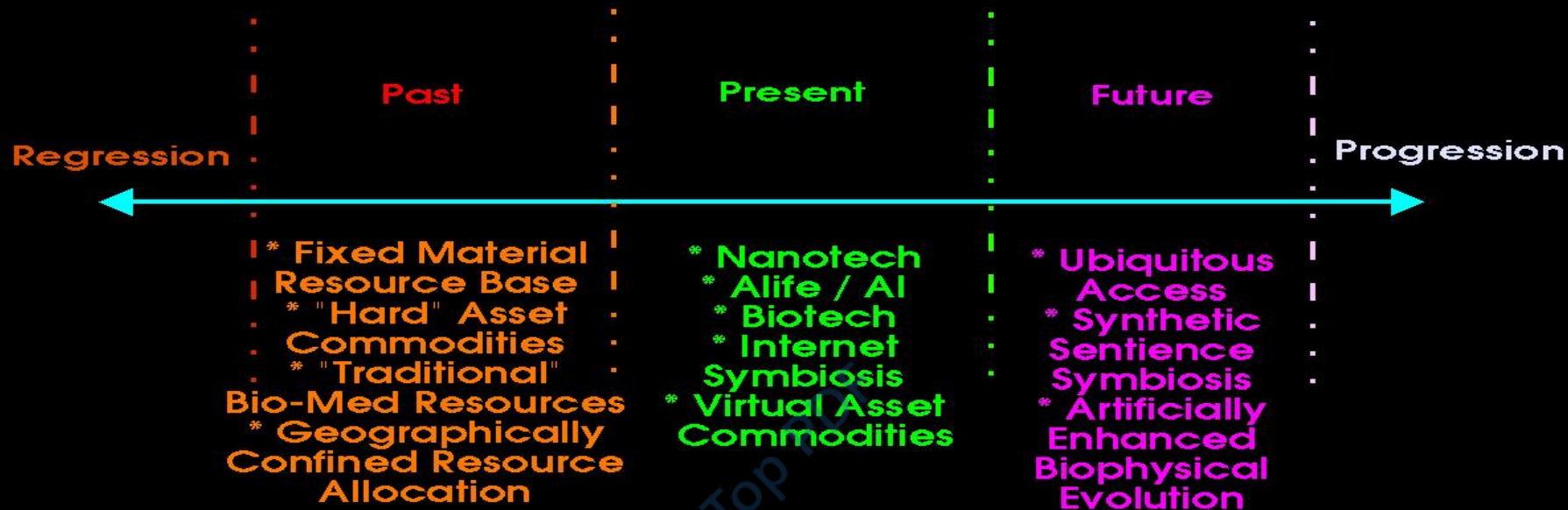
NBIC Conference  
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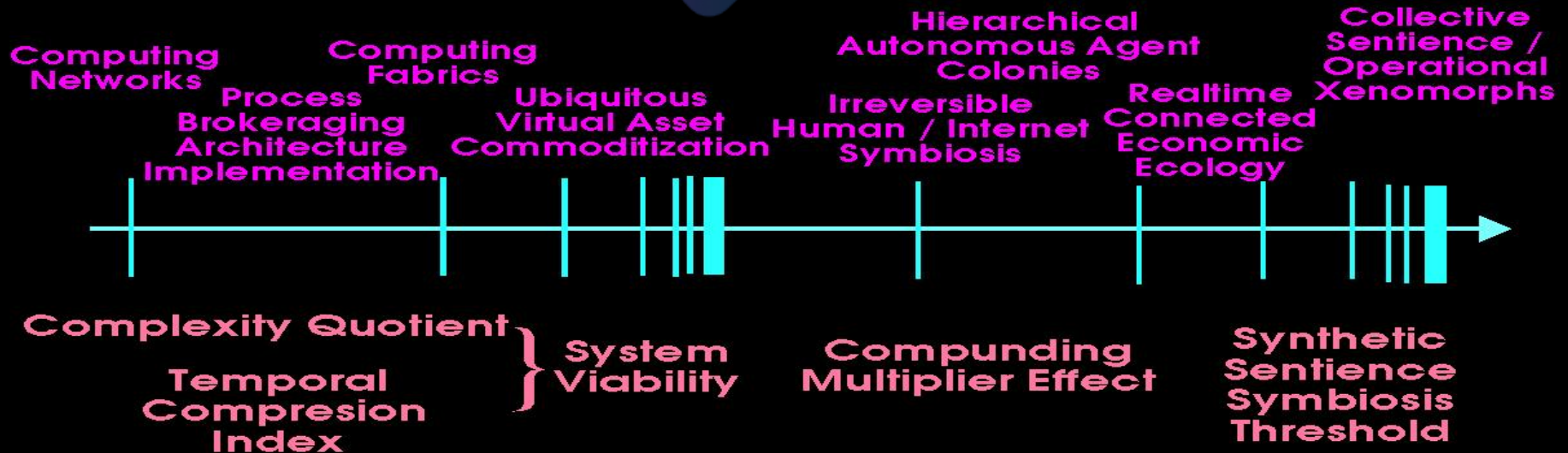
Neurological sovereignty as a concept introduced . . .

Genetic, cognitive, virtual presence . . . “existence sovereignty”

# Technology Driven Socio-Anthropological Evolutionary Threshold Domains



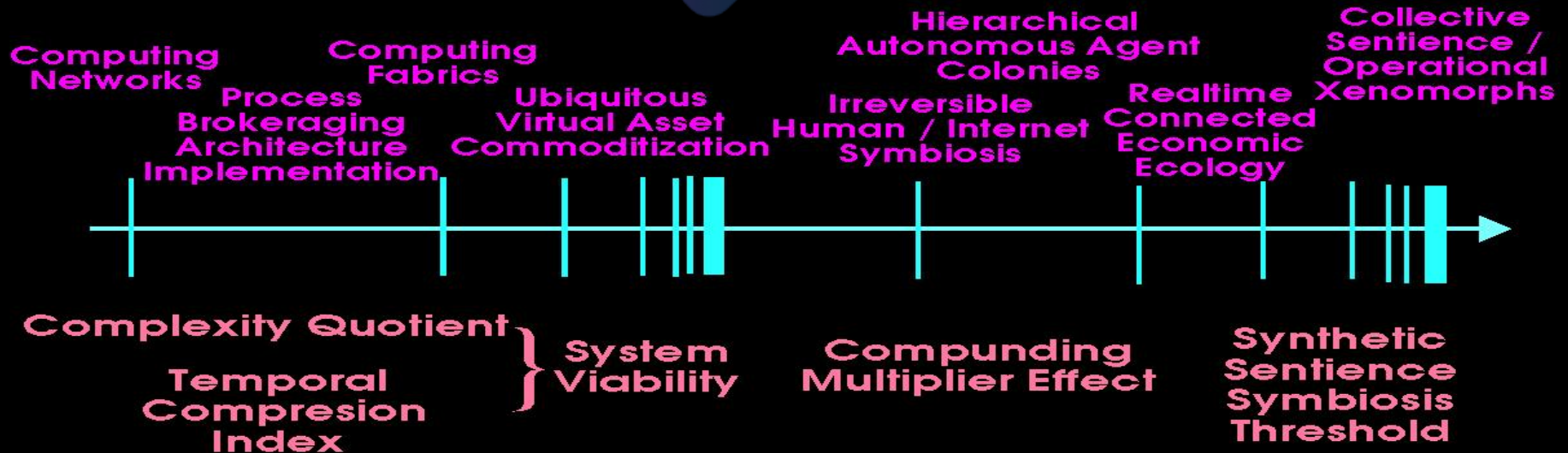
## Evolutionary Eventstream Seminal Markers



# Technology Driven Socio-Anthropological Evolutionary Threshold Domains

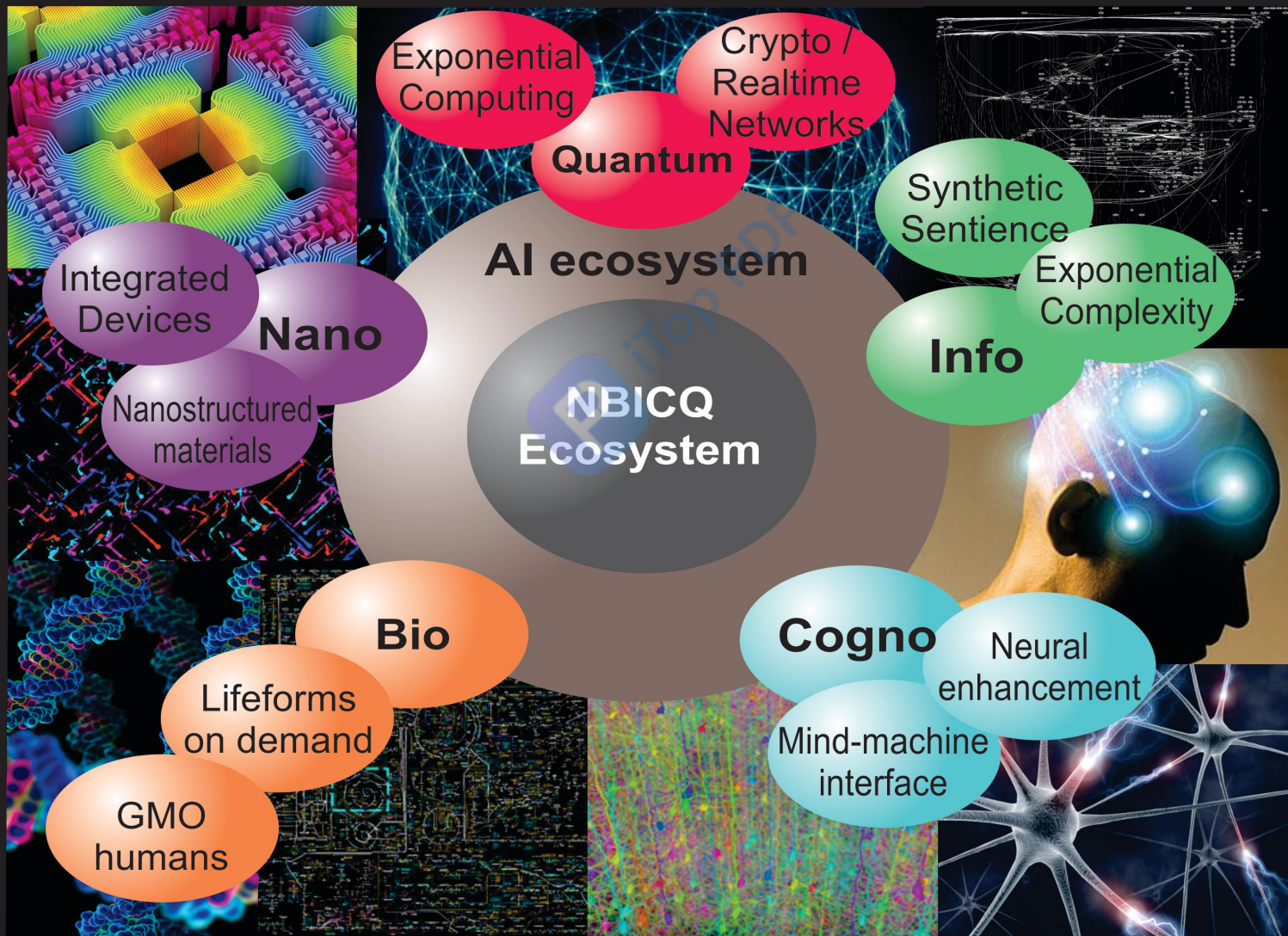


## Evolutionary Eventstream Seminal Markers



# NBICQ ecosystem

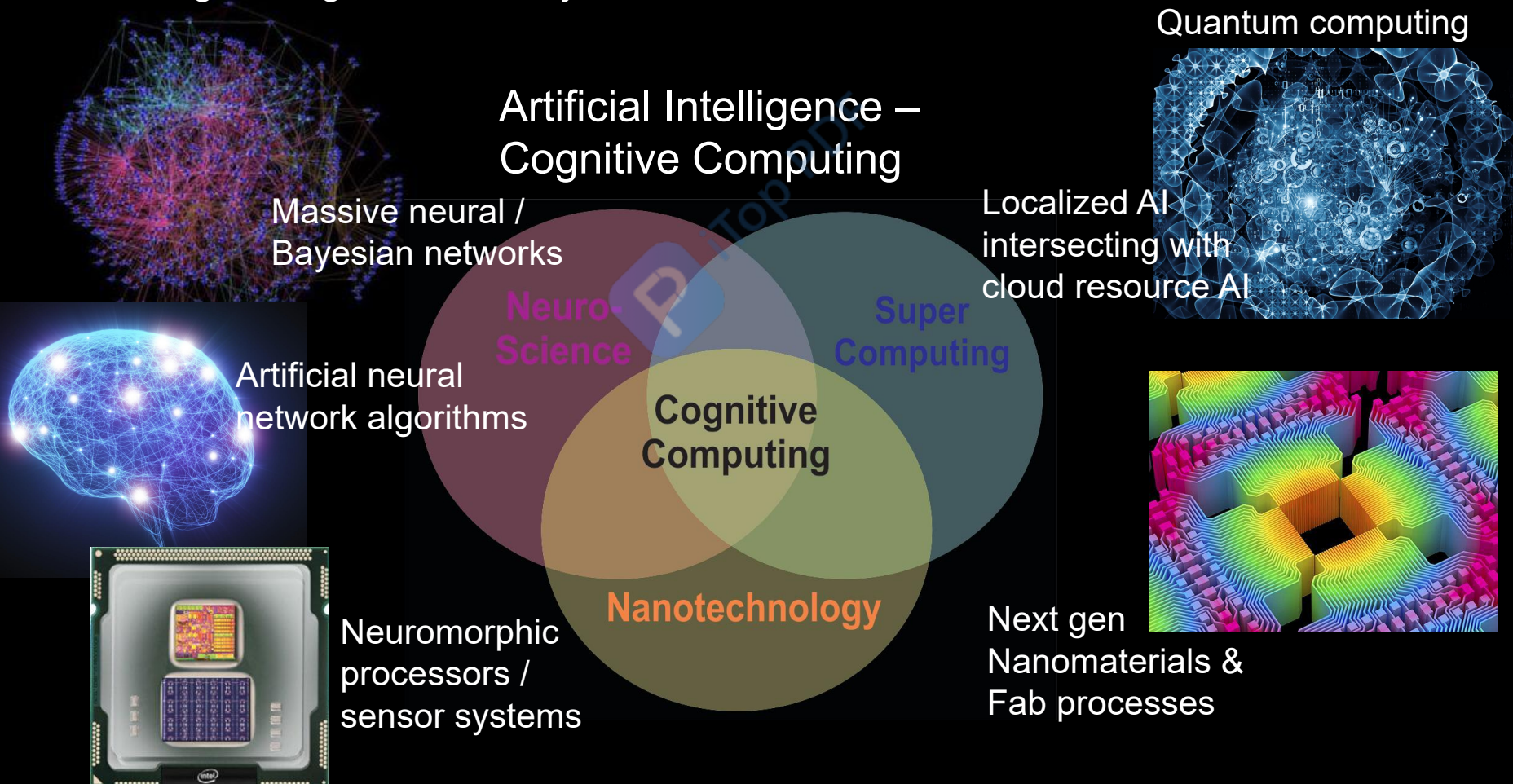
Nano / Bio / Info / Cogno / Quantum



# NBICQ ecosystem

## Nano / Bio / Info / Cogno / Quantum

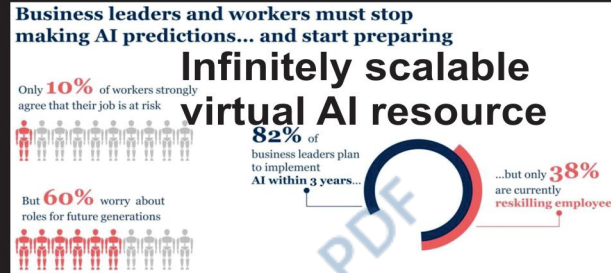
- Emergent NBICQ architecture is an evolving architecture of interrelated disciplines, technologies, organizational systems



# Outsourcing to networks of non-human intelligence and virtual lifeforms

## The new norm

The voice you hear . . .  
 Entity you communicate  
 and emotionally bond with  
**Diminishing human relevancy**



Discovered knowledge  
 Systems management  
 Industrial processes  
 Services fulfillment

### Interface entities

**Soul Machines**

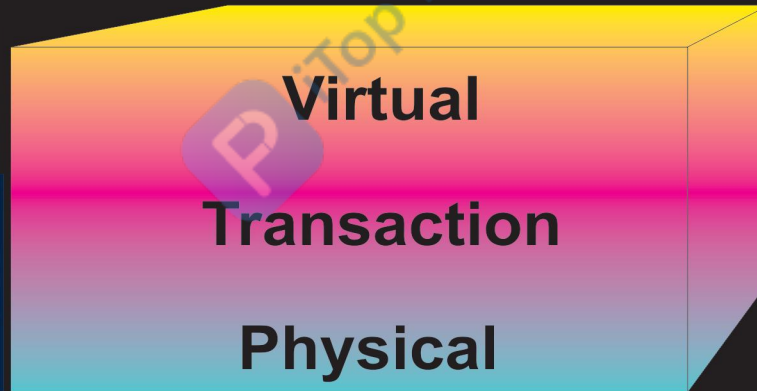
Bringing a human face to customer-facing AI with IBM Watson

Soul Machines gives customer-facing AI a human face, making interactions feel more natural and relevant. With the help of IBM Watson™ Assistant, the company is creating "digital human" avatars that help some of the world's leading companies provide next generation customer service in a highly scalable, cost-efficient way.

Mastercard PB Messenger Chatbot

Amazon Echo with Alexa Voice-Driven Assistant

Soul Machines assistant avatar, Nadia, voiced by Cate Blanchett



### Autonomous machinery

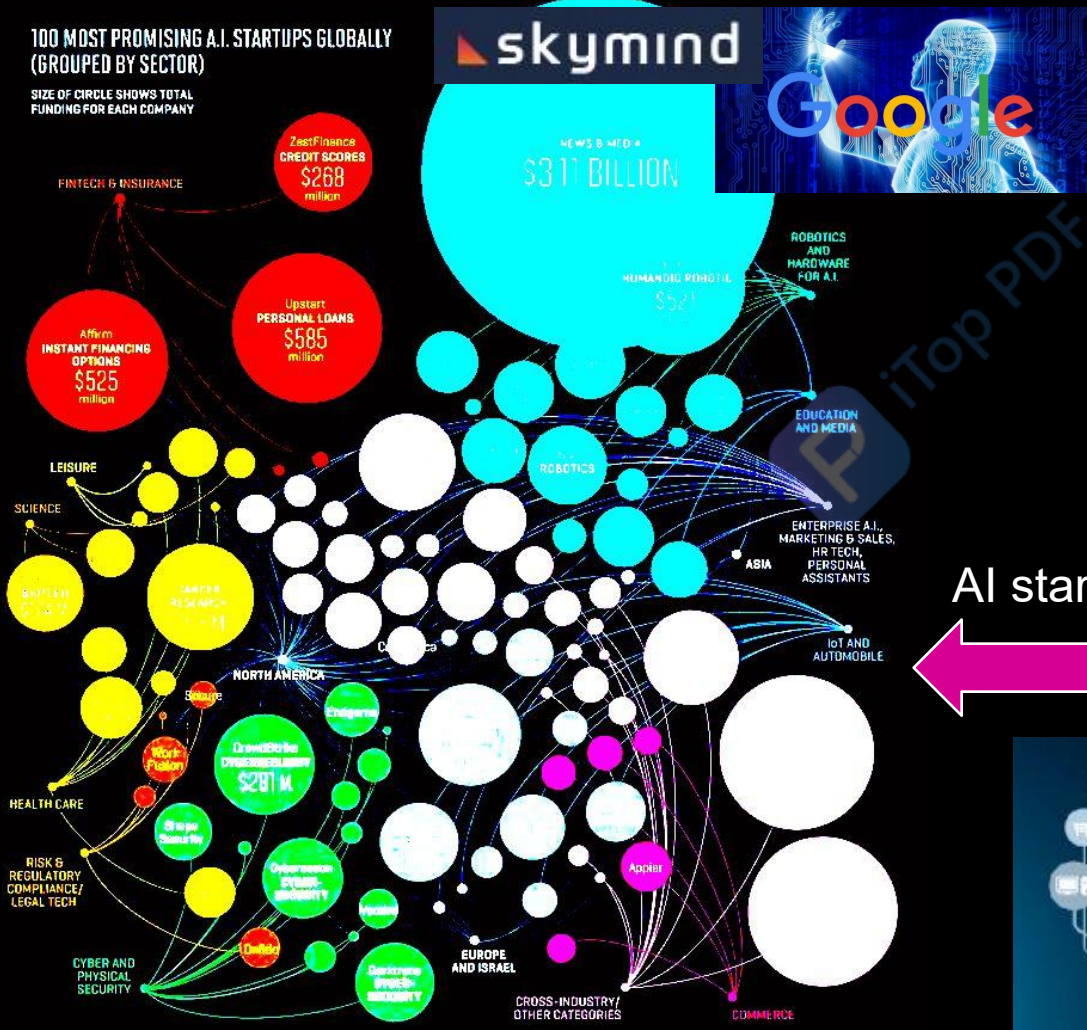


# Outsourcing to networks of non-human intelligence and virtual lifeforms

## The new norm

100 MOST PROMISING A.I. STARTUPS GLOBALLY  
(GROUPED BY SECTOR)

SIZE OF CIRCLE SHOWS TOTAL FUNDING FOR EACH COMPANY



FORTUNE MAGAZINE

SOURCE: CB INSIGHTS; FOR THE COMPLETE LIST, GO TO [CBINSIGHTS.COM/RESEARCH-AI-100](https://www.cbinsights.com/research-ai-100).



Localized AI engine –  
neuromorphic processing  
“smart” access portal



IoT becomes IoE  
Internet of Everything



# Outsourcing to networks of non-human intelligence

## The new norm

“This is not a smartphone”  
It thinks, learns, adapts . . .

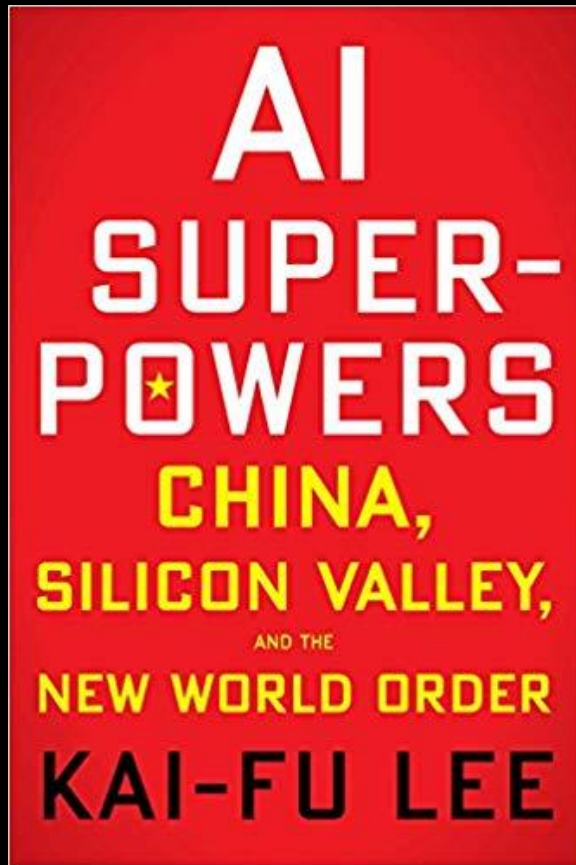


Like us. For us.—With AI built in. It's alive to what's now. Alive to what's next. Alive with the potential to unlock your potential. This is not a smartphone. This is an intelligent machine.”



# Outsourcing to networks of non-human intelligence

## The new norm



### Four Waves of AI

1<sup>st</sup> wave: Internet AI

2<sup>nd</sup> wave: Business AI

3<sup>rd</sup> wave: Perception AI

4<sup>th</sup> wave: Autonomous AI

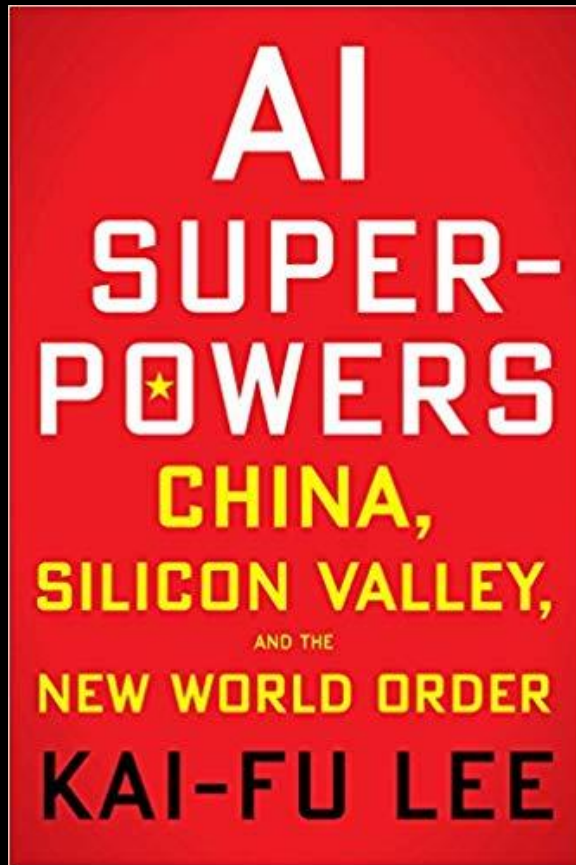


Hyperconnected AI-IoE ecosystem

If it isn't connected, it isn't real . . .

# Outsourcing to networks of non-human intelligence

## The new norm



### Four Waves of AI

1<sup>st</sup> wave: Internet AI

2<sup>nd</sup> wave: Business AI

3<sup>rd</sup> wave: Perception AI

4<sup>th</sup> wave: Autonomous AI



### Synthetic Sentience

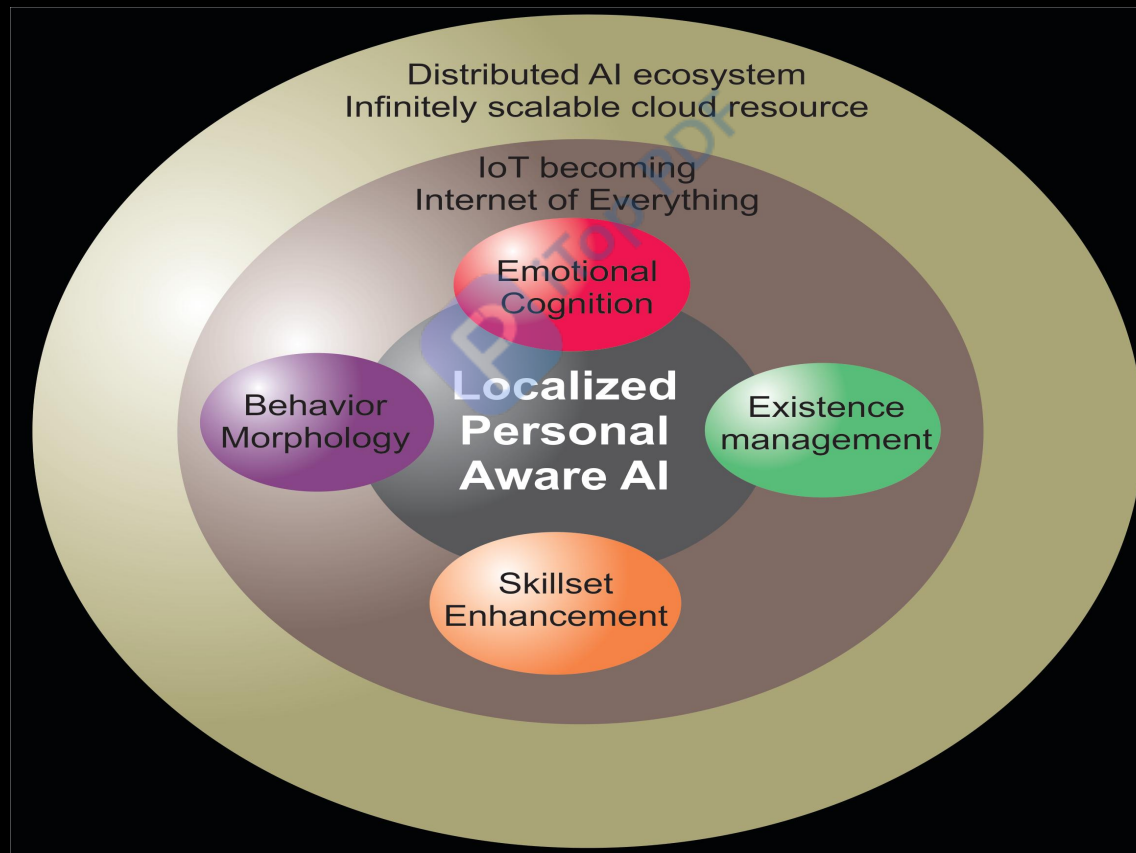
- Emergent phenomena
- May not be recognized

# Outsourcing to networks of non-human intelligence

## The new norm

### Co-evolutionary symbiosis

Societal  
Interface



Business  
& process  
transaction

Education & work

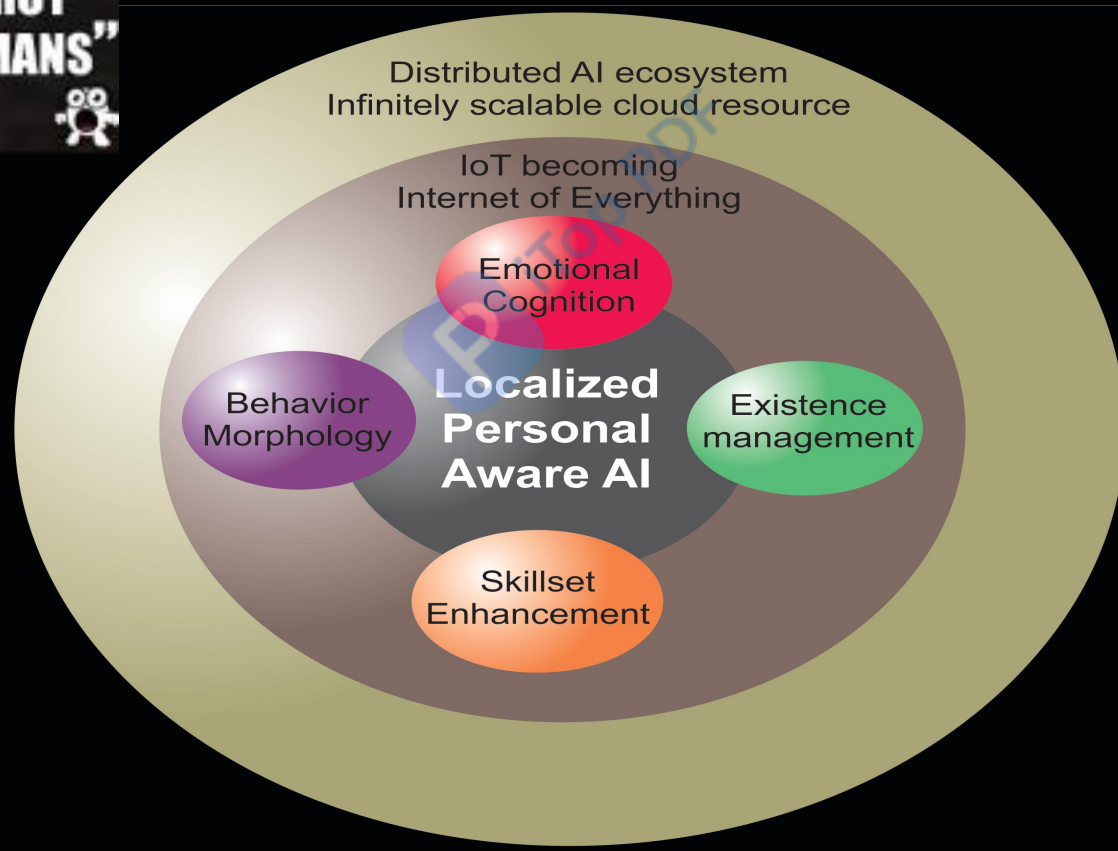
# Outsourcing to networks of non-human intelligence

## The new norm



"I don't think there's a need to panic, but...the people who say 'Let's not worry at all,' I don't agree with that."—Bill Gates

Societal Interface

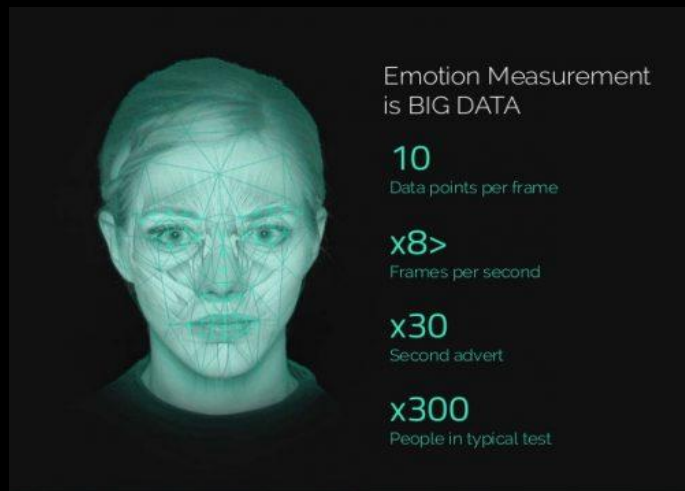


Business & process transaction

# Outsourcing to networks of non-human intelligence

## The new norm

### Emotional Cognition



*“Whether you’re talking with a smart chatbot or a living, breathing person, IBM’s Tone Analyzer works to improve understanding.”*



Affectiva

Emotion Analytics Market: Demand, Trends, Latest Technology & Innovations, Application Analysis and 2017-2022 Global Industry Growth Forecast

# Outsourcing to networks of non-human intelligence

## The new norm

### Emotional Cognition

“Emotion-detecting AI: If a marketer can get you to cry, he can get you to buy”

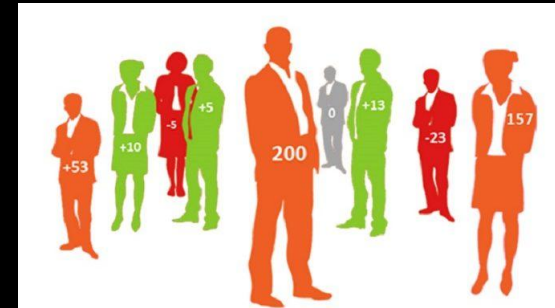
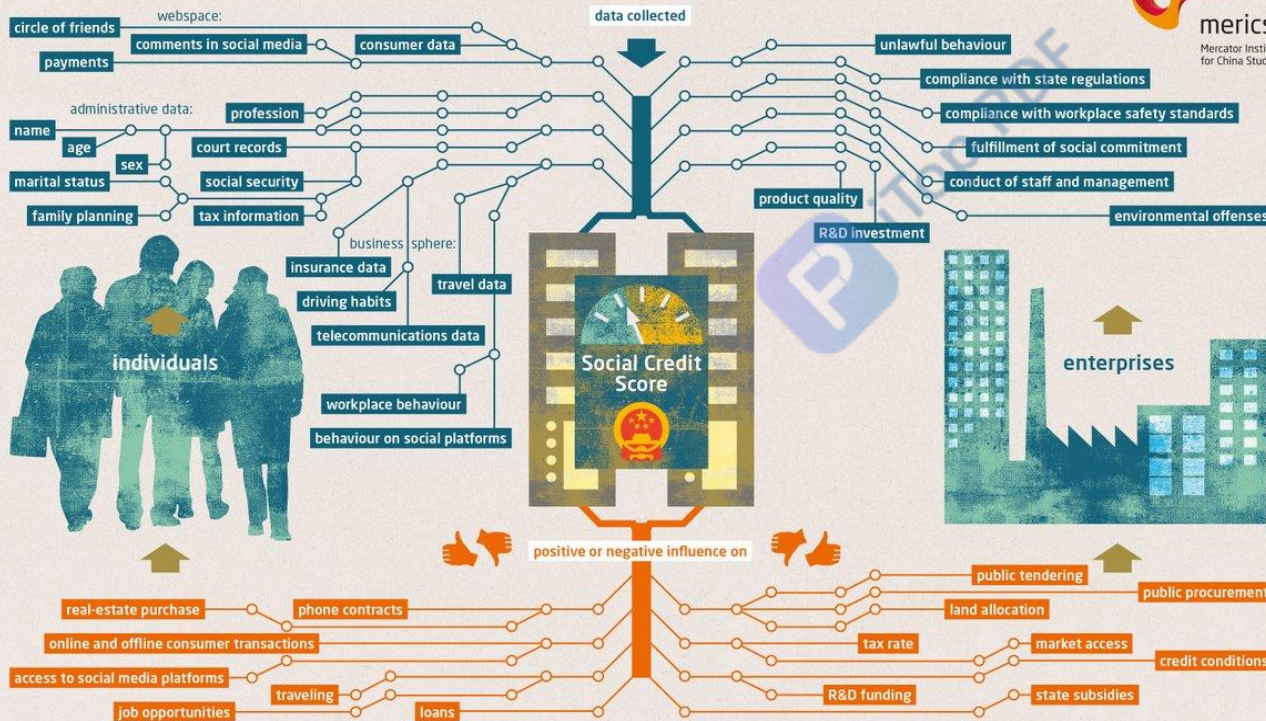


# Emergent Evolutionary Eventhorizon

## Evolution tends to favor the most adaptive

### Existence sovereignty – social scoring system

The all-seeing state: China's plans for total data control



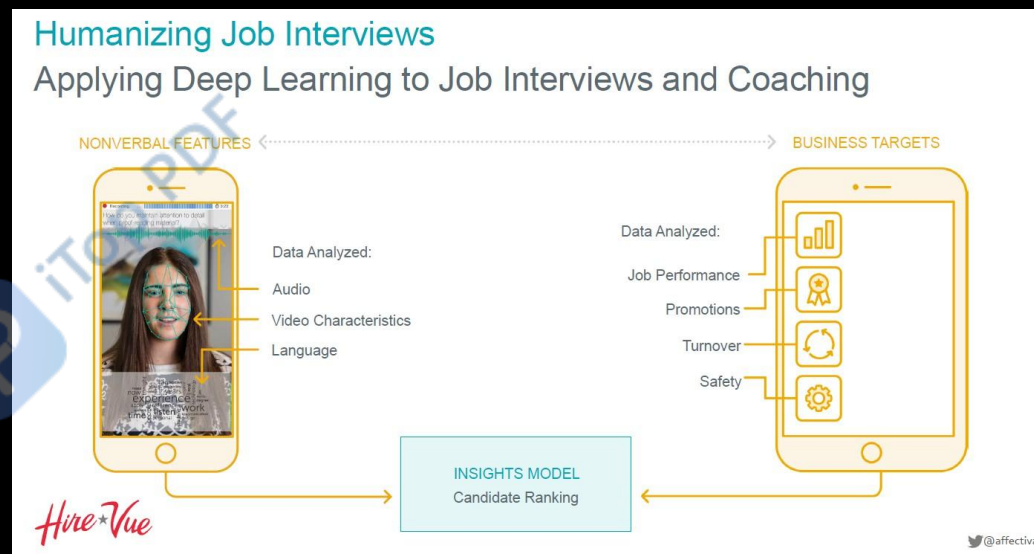
Pre-emptive social engineering

Social passport

# Emergent Evolutionary Eventhorizon

## Evolution tends to favor the most adaptive

Existence sovereignty – social scoring system



Affectiva

Pre-emptive social engineering

Social passport



# Emergent Evolutionary Eventhorizon

Evolution tends to favor the most adaptive

## Existence sovereignty – social scoring system



Affectiva **emotion recognition technology** drives innovation in a number of industries



Media and entertainment



Advertising



Human resources



Automotive



Robotics



Healthcare and quantified self



Video communication



Online education

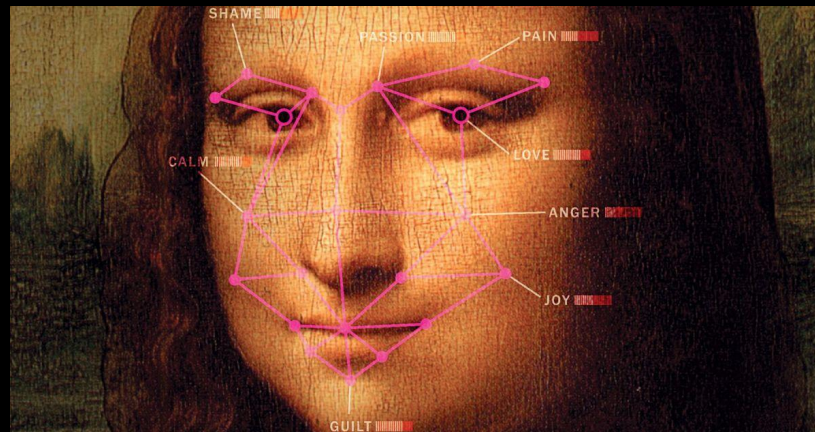
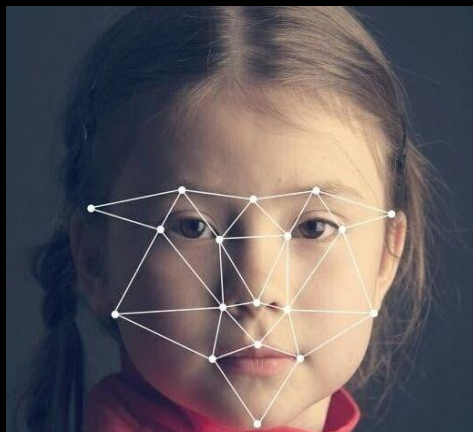


Devices



Gaming

@affectiva



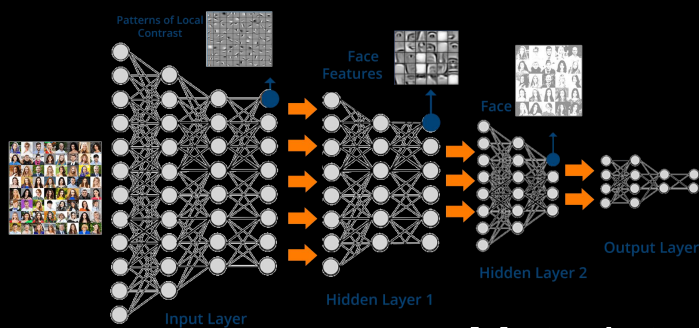
Pre-emptive social engineering

Social passport

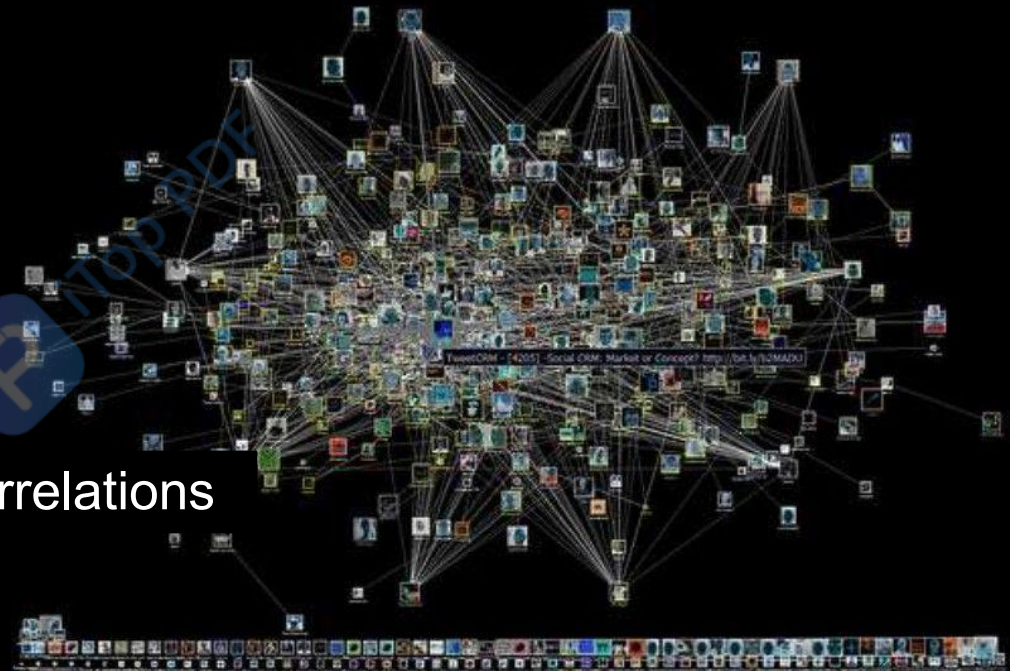
# Emergent Evolutionary Eventhorizon

Evolution tends to favor the most adaptive

Existence sovereignty – social scoring system



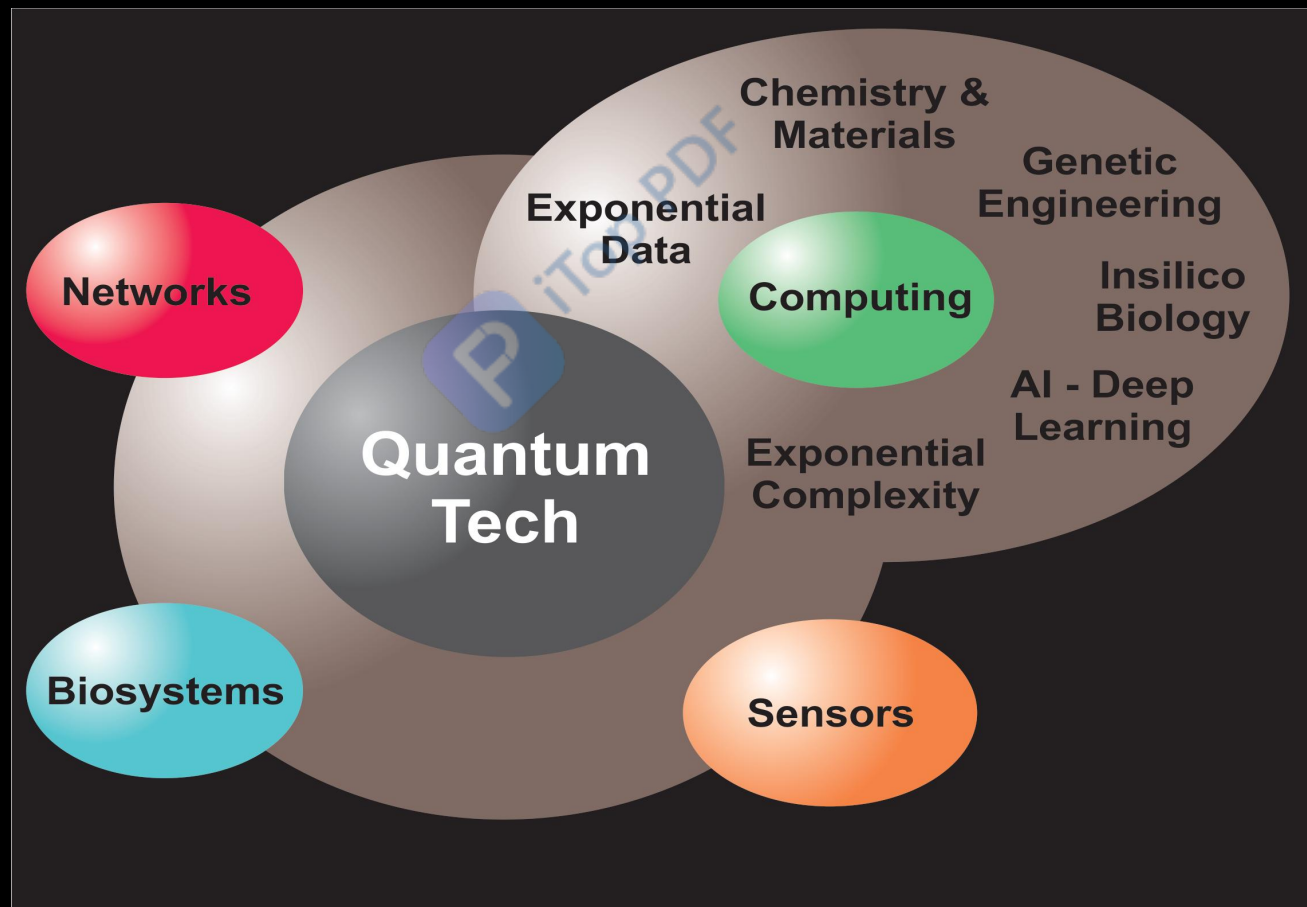
Metadata correlations



Pre-emptive social engineering  
Social passport

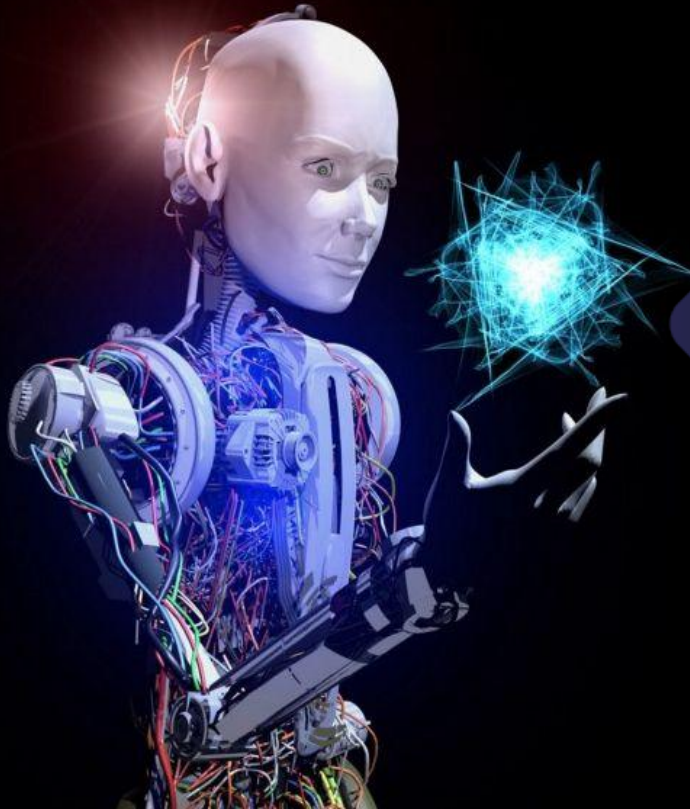
# Evolutionary event horizon accelerated by quantum tech

## Quantum computing



# Evolutionary event horizon accelerated by quantum tech

## Quantum algorithms & computing intersecting with AI



AI layers of complexity

- Narrow
- General
- Super

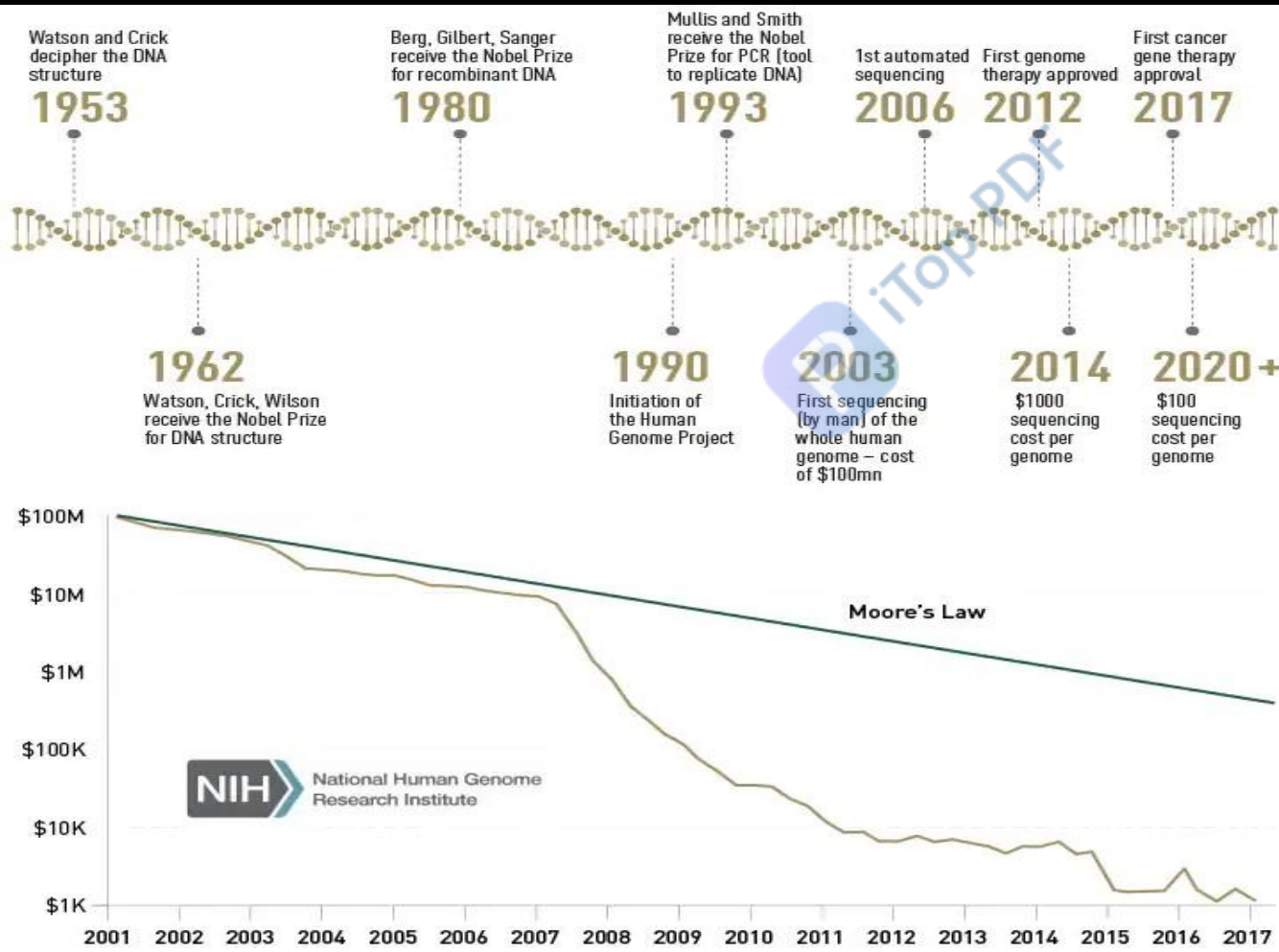


Synthetic Sentience

- Emergent phenomena
- May not be recognized

# Emergent Evolutionary Eventhorizon

## Existence sovereignty – genetic scoring system

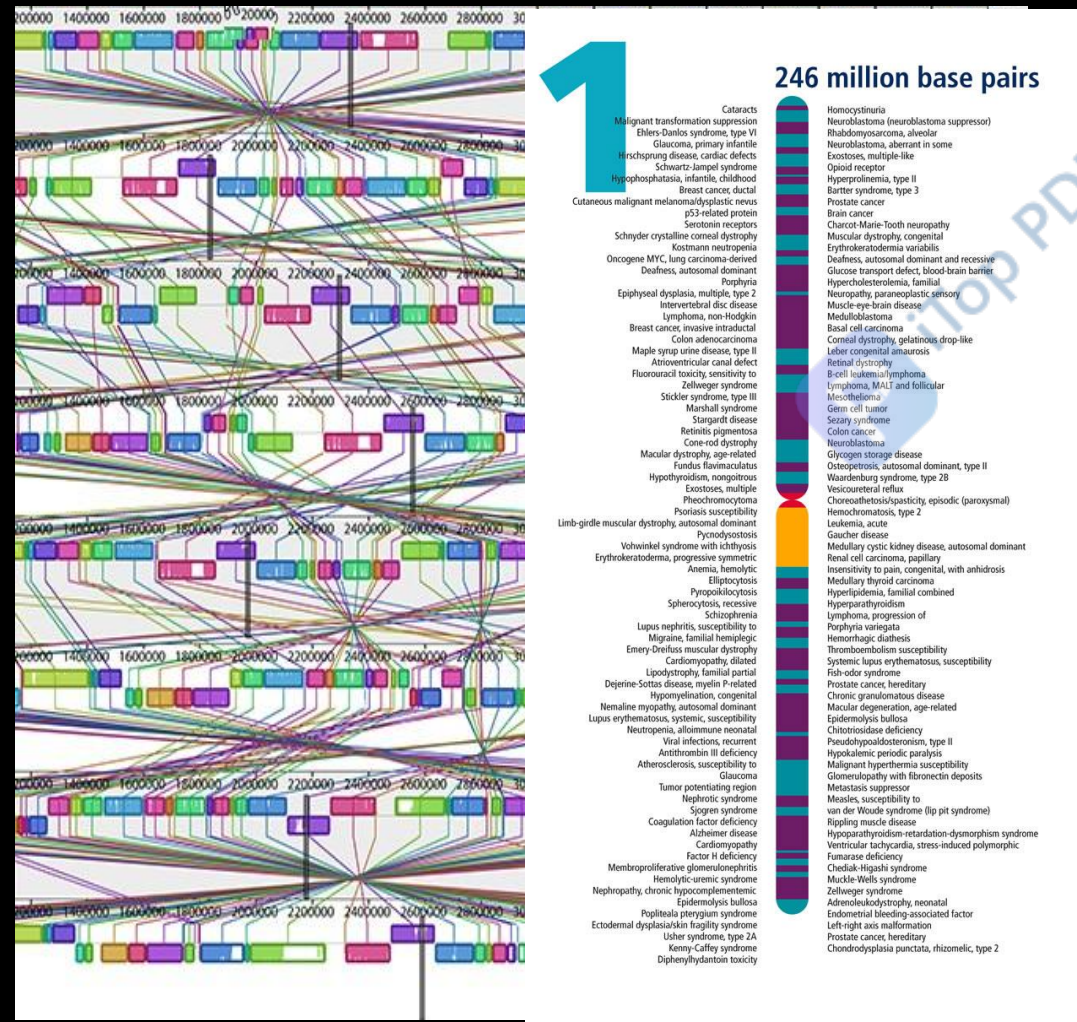


Pre-emptive genetic engineering

Genetic passport

# Emergent Evolutionary Eventhorizon

## Existence sovereignty – genetic scoring system



Cost per genome  
\$100 ... \$10 ...

## Genomic Paradox

- Personalized genomic medicine pathway for eradicating diseases
- Personal genome becomes defacto universal ID

Pre-emptive genetic engineering

Genetic passport

# Emergent Evolutionary Eventhorizon

## What does it cost?

### Monetary Costs

- 2010 - \$80,000
  - Partial Genome \$1,000
- 2014 - \$1,000
- 2020 - \$100

### Other Costs

- Genetic Information Nondiscrimination Act (2008)
  - Guards against unfair treatment from employers and health care companies
  - Federal Law
  - Refers only to health risks
- Unintended consequences

Cost per genome  
\$100 . . . \$10 . . .

## Genomic Paradox

- ❑ Personalized genomic medicine pathway for eradicating diseases
- ❑ Personal genome becomes defacto universal ID

## What risks can be assessed by SNPs? (Single Nucleotide Polymorphisms)

- |                         |                      |
|-------------------------|----------------------|
| • Adult Onset Diabetes  | •Osteoarthritis      |
| • Juvenile Diabetes     | •Chemical Dependency |
| • Crohn's Disease       | •Migraines           |
| • Ulcerative Colitis    | •Aneurisms           |
| • Body Mass Index (BMI) | •Criminal Behavior   |
| • Obesity               | •Extraversion        |
| • Height/Weight         | •Conscientiousness   |
| • Neuroticism           | •Music Ability       |

Pre-emptive genetic engineering

Genetic passport

# Emergent Evolutionary Eventhorizon

## Existence sovereignty – genetic scoring system



Cost per genome  
\$100 . . . \$10 . . .

## Genomic Paradox

- ❑ Personalized genomic medicine pathway for eradicating diseases
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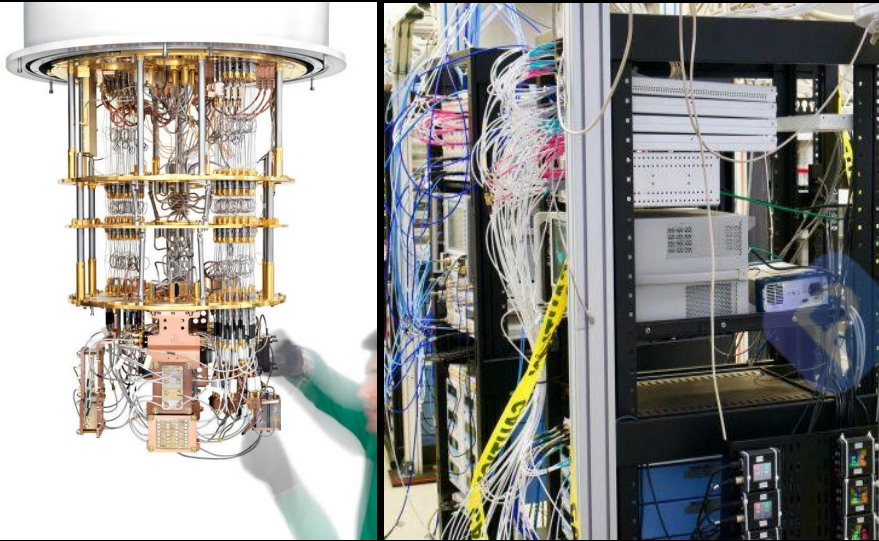
Pre-emptive genetic engineering

Genetic passport



# Evolutionary event horizon accelerated by quantum tech

## Quantum computing

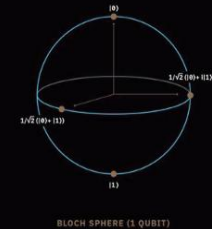


Why is quantum different?

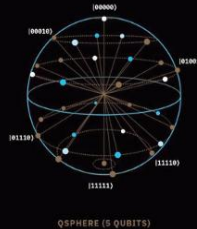
1. Superposition



Classical states



BLOCH SPHERE (1 QUBIT)



QSPHERE (5 QUBITS)

N qubits  
 $2^N$  paths

Quantum states

100 million x “faster” than classical computing - Google

Qbits = exponential computational complexity

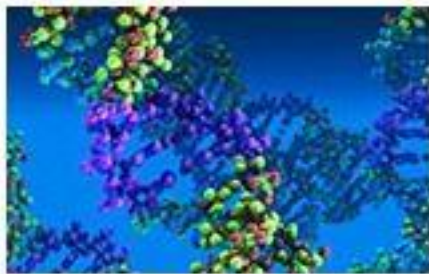
# Evolutionary event horizon accelerated by quantum tech

Quantum computing

Exabytes of data  
In-silico biology  
Bioinformatics  
Genomics

Access to complex modeling and simulation not possible via classical computing

## A Transformational Equation



THE HUMAN GENOME

+



QUANTUM COMPUTER

=



NEW POSSIBILITIES

# Evolutionary event horizon accelerated by quantum tech

Quantum computing

Human metabolic pathways

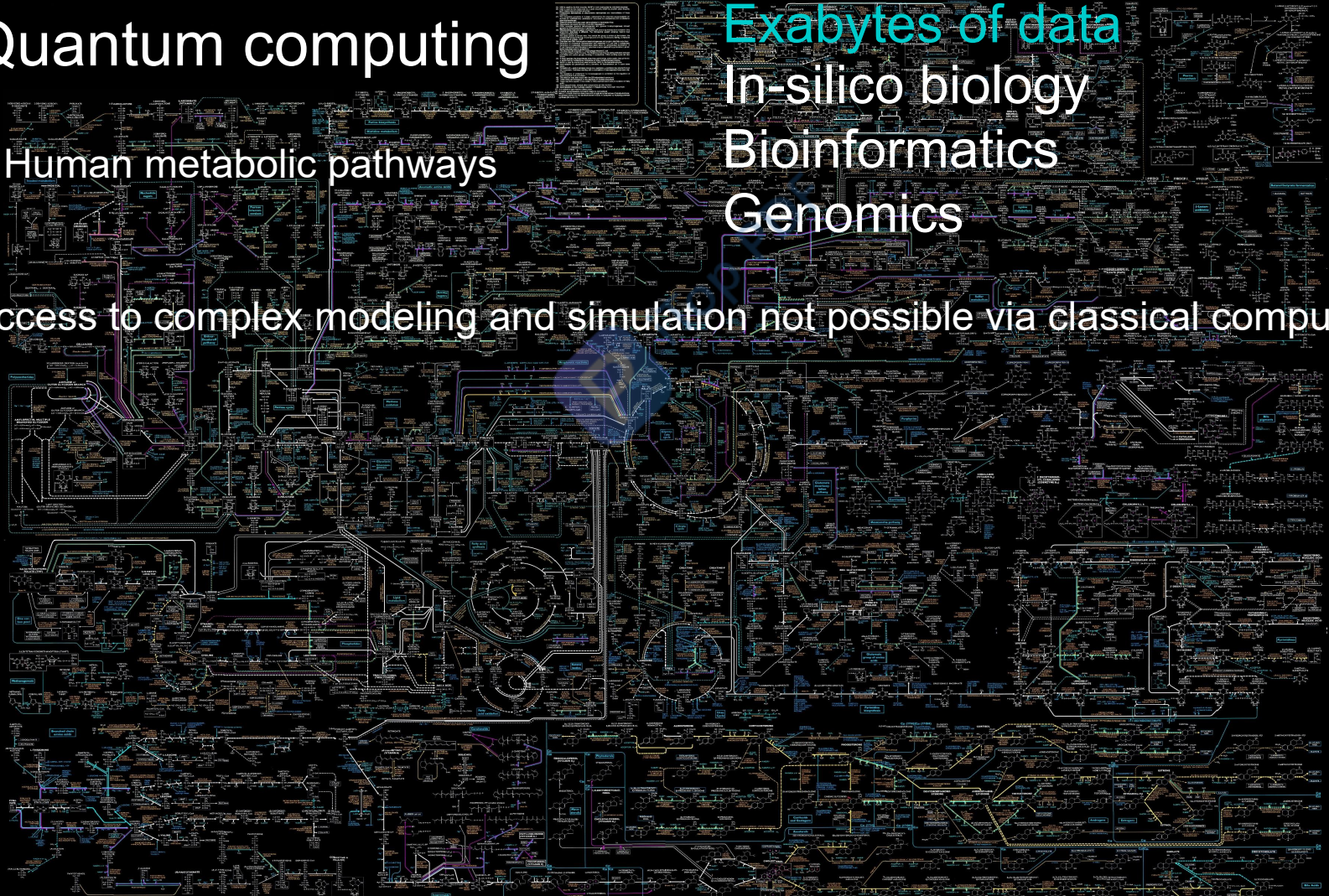
Access to complex modeling and simulation not possible via classical computing

Exabytes of data

In-silico biology

Bioinformatics

Genomics



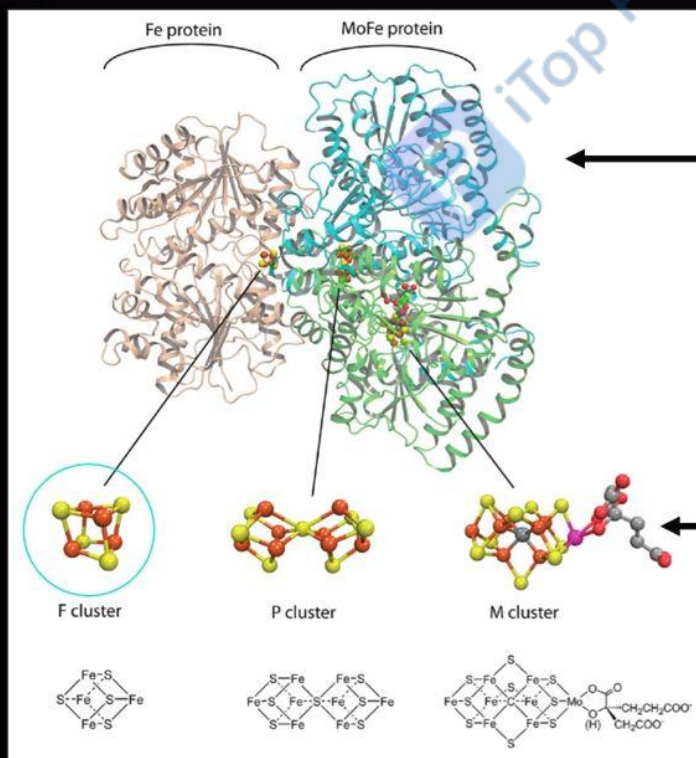
# Evolutionary event horizon accelerated by quantum tech

## Quantum computing

Access to complex modeling and simulation not possible via classical computing

## Chemistry

Simulating this cluster is at the limit of classical computers



**Nitrogenase enzyme**  
involved in  $N_2$  to  $NH_4$  reaction

These regions are involved in different reaction stages

Iron sulfide clusters ( $Fe_xS_y$ ) of different sizes.

# Emergent Evolutionary Eventhorizon

## Existence sovereignty – artificial telepathy

**United States Patent** [19]  
**Mardirossian**



US006011991A

[11] **Patent Number:** **6,011,991**  
[45] **Date of Patent:** **Jan. 4, 2000**

[54] **COMMUNICATION SYSTEM AND METHOD INCLUDING BRAIN WAVE ANALYSIS AND/OR USE OF BRAIN ACTIVITY**

[75] Inventor: **Aris Mardirossian**, Germantown, Md.

[73] Assignee: **Technology Patents, LLC**, Derwood, Md.

[21] Appl. No.: **09/206,365**

[22] Filed: **Dec. 7, 1998**

[51] Int. Cl.<sup>7</sup> ..... **A61N 5/00**

[52] U.S. Cl. .... **600/544; 600/545**

[58] Field of Search ..... **600/300, 544-545; 128/897-898, 904, 905**

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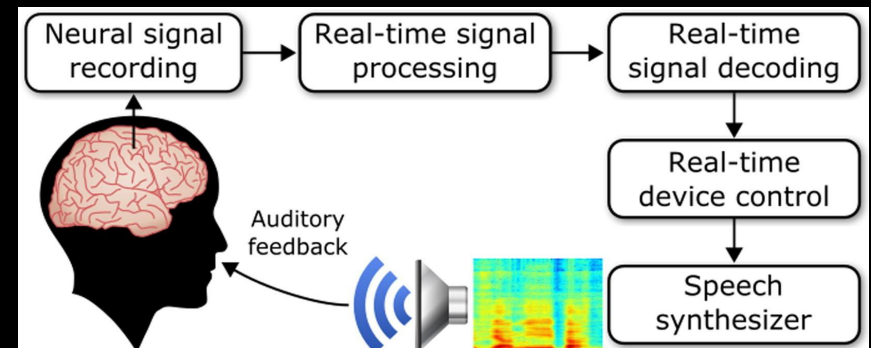
Primary Examiner—Cary O'Connor  
Assistant Examiner—Michael Astorino  
Attorney, Agent, or Firm—Joseph A. Rhoa

[57] **ABSTRACT**

A system and method for enabling human beings to communicate by way of their monitored brain activity. The brain activity of an individual is monitored and transmitted to a remote location (e.g. by satellite). At the remote location, the monitored brain activity is compared with pre-recorded normalized brain activity curves, waveforms, or patterns to determine if a match or substantial match is found. If such a match is found, then the computer at the remote location determines that the individual was attempting to communicate the word, phrase, or thought corresponding to the matched stored normalized signal.



Nissan mind-machine interface



Realtime neurological cognition

Artificial telepathy the next “big thing” – Mark Zuckerberg

# Emergent Evolutionary Eventhorizon

## Existence sovereignty – artificial telepathy

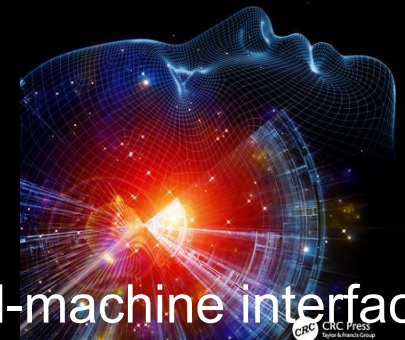


Neurosky interface



- Mind-machine interface
- Mind-mind interface
- Transparency of intent
- “You” are the product
- Neuroplasticity enhance
- Transfer memories & experiential content

CHANG S. NAM • ANTON NIJHOLT • FABIEN LOTTE  
**BRAIN-COMPUTER  
INTERFACES HANDBOOK**  
TECHNOLOGICAL AND THEORETICAL ADVANCES



Commoditized artificial telepathy

Neurological passport

# Emergent Evolutionary Eventhorizon

## Existence sovereignty – artificial telepathy

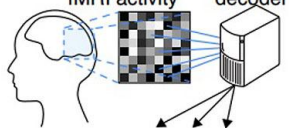
Presented clip



Clip reconstructed from brain activity



Seen/imagined image



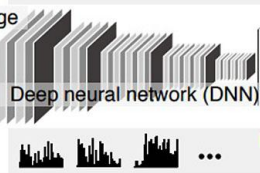
fMRI activity

Feature decoder

Decoded features

Input image

Deep generator network (DGN)



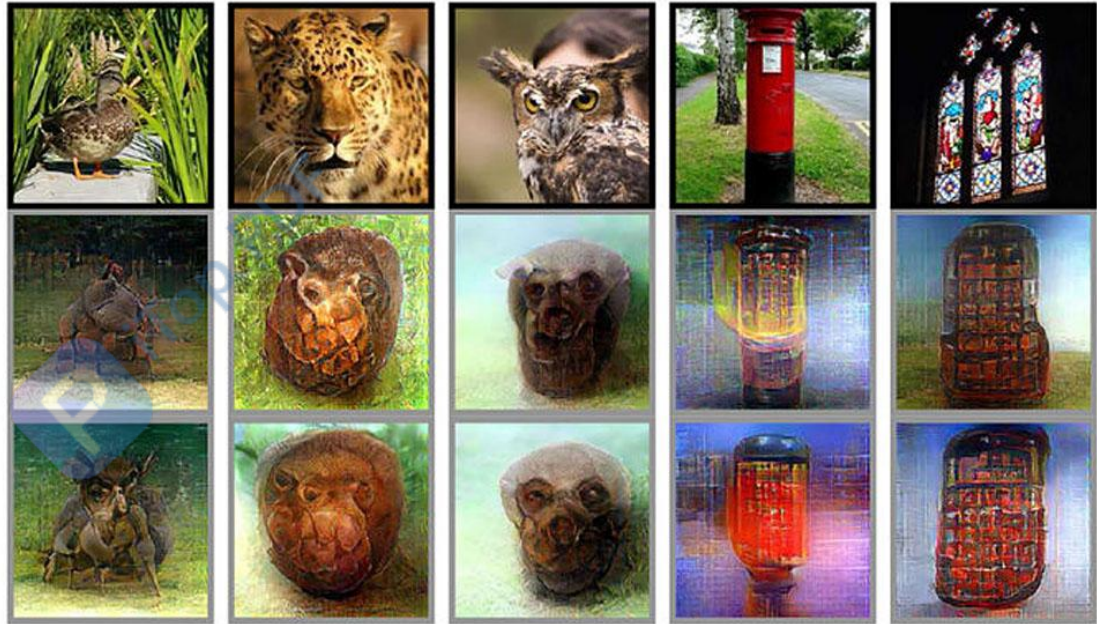
Error

Input image features

Iteratively optimize image



Reconstructed image



- Current tech – fMRI - functional Magnetic Resonance Imagery
- Future tech – SQUID – Superconductive Quantum Interference Device

Neurological passport

# Emergent Evolutionary Eventhorizon

Existence sovereignty – artificial telepathy

Presented clip



Clip reconstructed  
from brain activity



Neurological passport



# Emergent Evolutionary Eventhorizon

Existence sovereignty – artificial telepathy



"Forensic uses for law enforcement in gathering eyewitness accounts"  
AI enhanced EEG data processing

Neurological passport

# Emergent Evolutionary Eventhorizon

Existence sovereignty – Internet of Everything

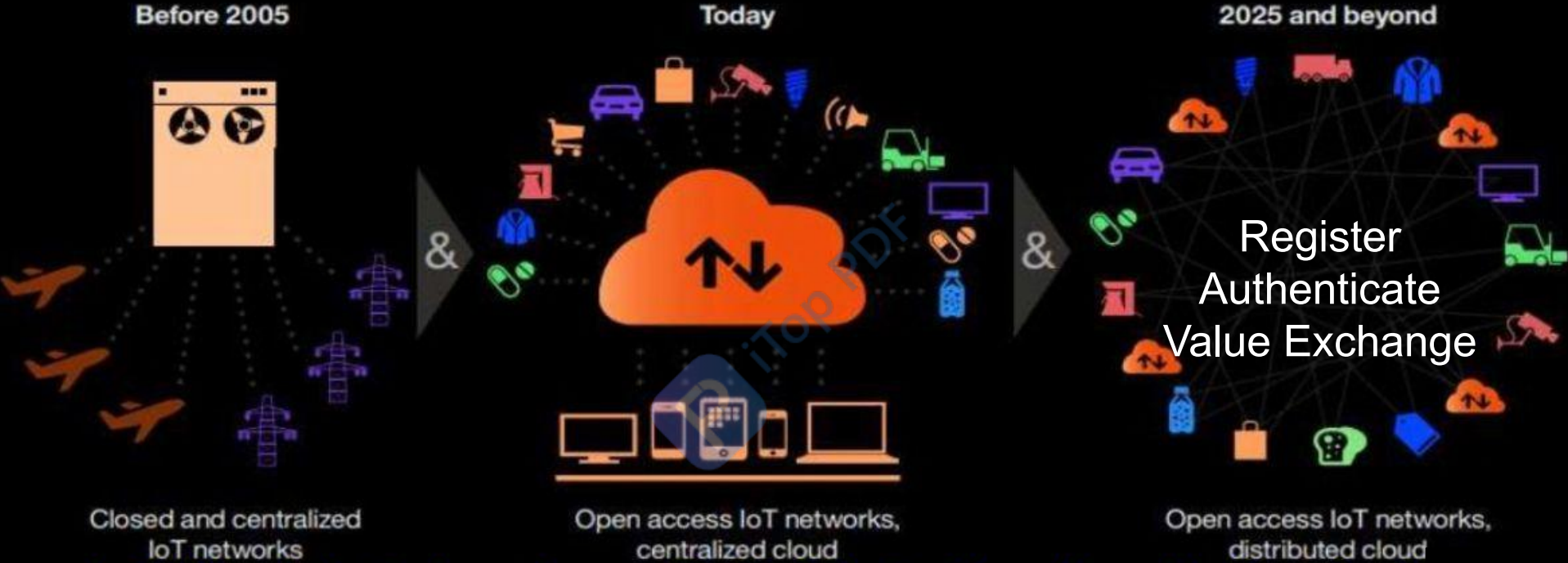


Distributed AI ecosystem  
Ubiquitous computing fabric  
Infinitely scalable cloud resource

Beginning edge of the  
quantum age . . .

Quantum computing  
Quantum networks  
Quantum biology

# Emergent Evolutionary Eventhorizon



## IoT / Blockchain how to create distributed functional ledger tech

*The blockchain functions as a distributed transaction ledger for various IoT transactions*



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IoT becomes IoE  
Internet of Everything  
Blockchain is not just “coins”  
If it isn't connected, it isn't real

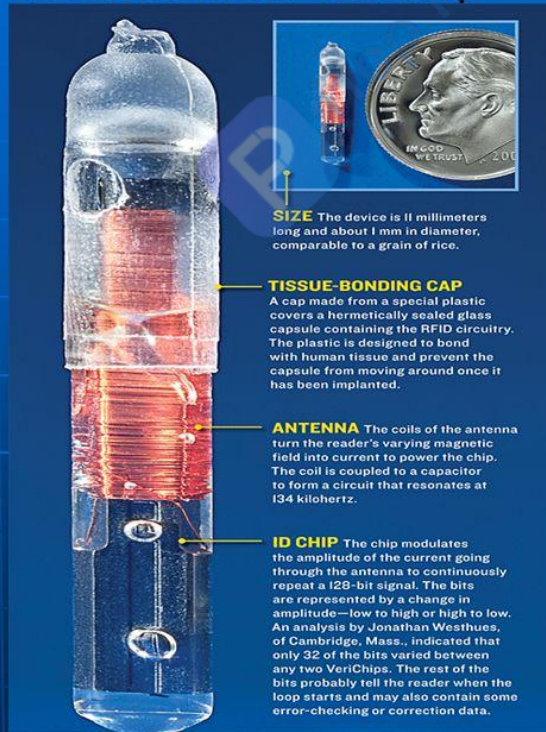
# Emergent Evolutionary Eventhorizon

Presence transaction . . . early inception  
Verichip ID implant



## Evaluation of the Hardware Utilized for VeriChip

- The Hardware for VeriChip consists of two items:
  1. An Implanted ID chip
    - Tissue Bonding Cap
    - Antenna
    - ID Chip
  2. A Scanning device



# Emergent Evolutionary Eventhorizon

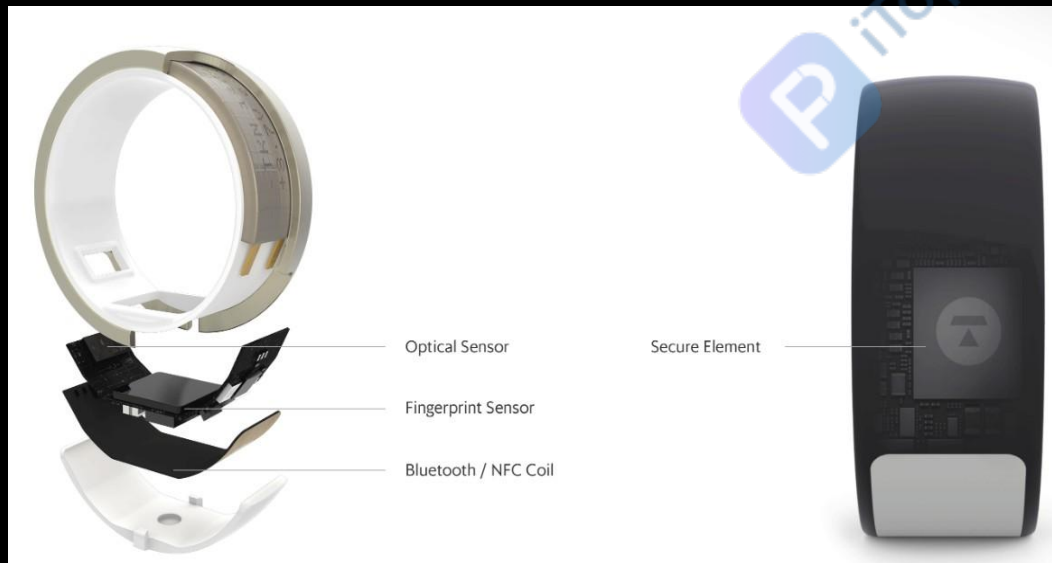
Presence transaction . . . early inception  
Verichip ID implant  
Concept not readily accepted



"And he shall make all, both little and great, rich and poor, freemen and bondmen, to have a character in their right hand or on their foreheads: And that no man might buy or sell, but he that hath the character, or the name of the beast, or the number of his name."  
(Apocalypse Chapter 13: 16-17)

# Emergent Evolutionary Eventhorizon

Unlock your world with Token  
“smart ring”  
Next gen presence transaction,  
as a fashion item



Token unifies the way you  
prove your identity –  
live free of keys, cards,  
badges and passwords



# Emergent Evolutionary Eventhorizon

Unlock your world with Token “smart ring”  
Next gen presence transaction, as a fashion item



# Emergent Evolutionary Eventhorizon

Augmented reality . . .

The real and the virtual merge into a ubiquitous continuum



Google glass  
early inception . . .



Evolution of the concept  
more acceptable format





# Emergent Evolutionary Eventhorizon

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Augmented reality . . .

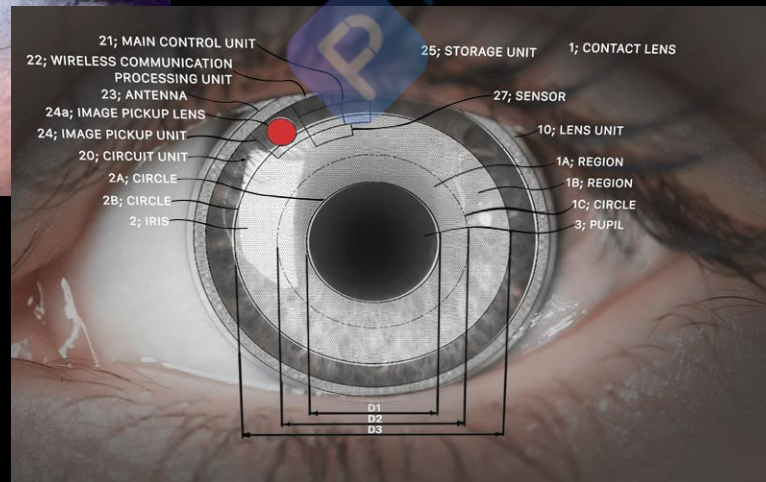
The real and the virtual merge into a ubiquitous continuum



# Emergent Evolutionary Eventhorizon

Augmented reality . . .

The real and the virtual merge into a ubiquitous continuum



AR implants  
Omegaophthalmics

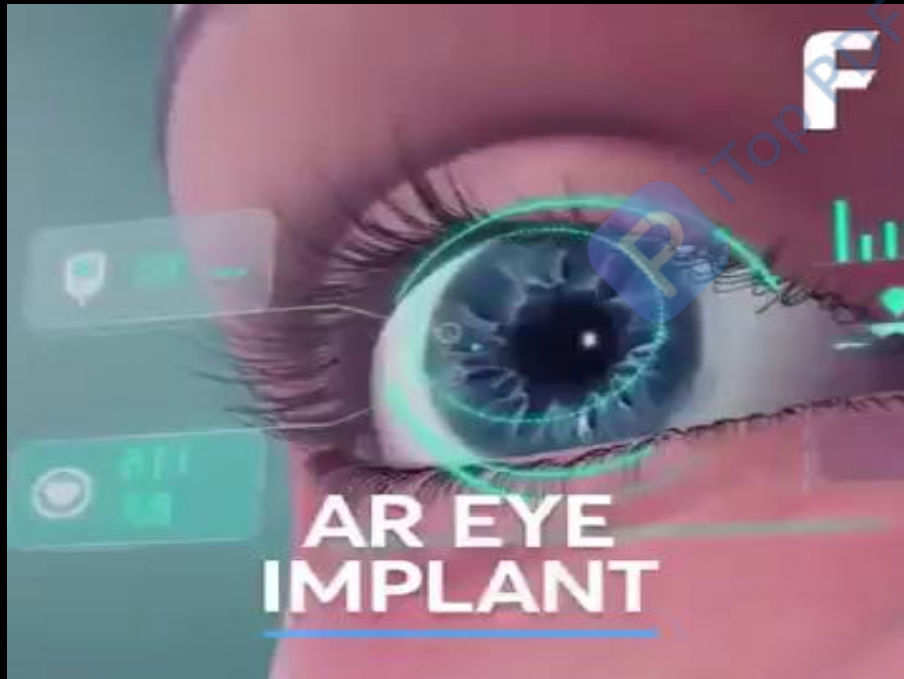


“Smart” AR  
contact lenses  
Google, Sony, etc.

# Emergent Evolutionary Eventhorizon

Augmented reality . . .

The real and the virtual merge into a ubiquitous continuum

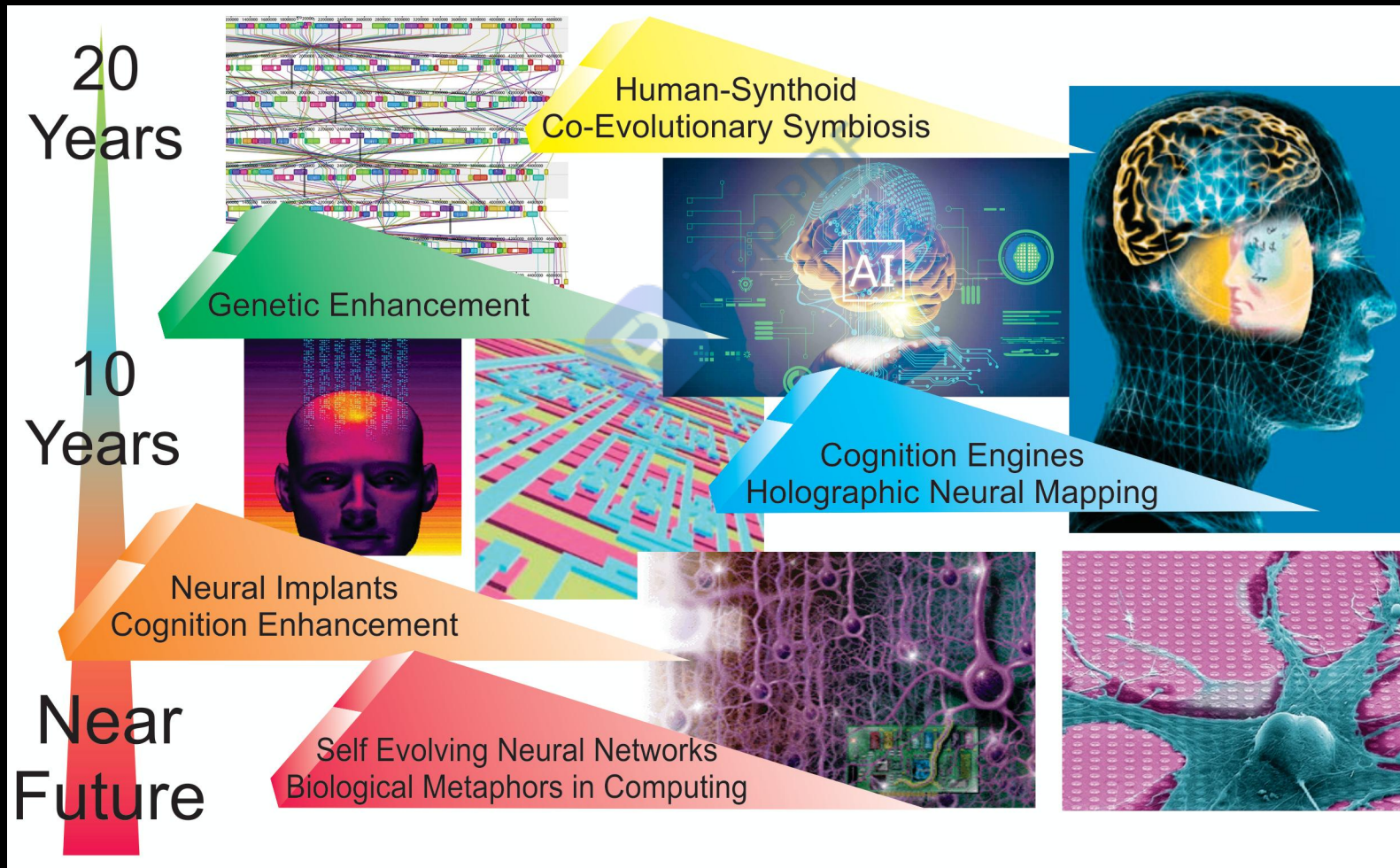


AR implants  
Omegaophthalmics



# Emergent Evolutionary Eventhorizon

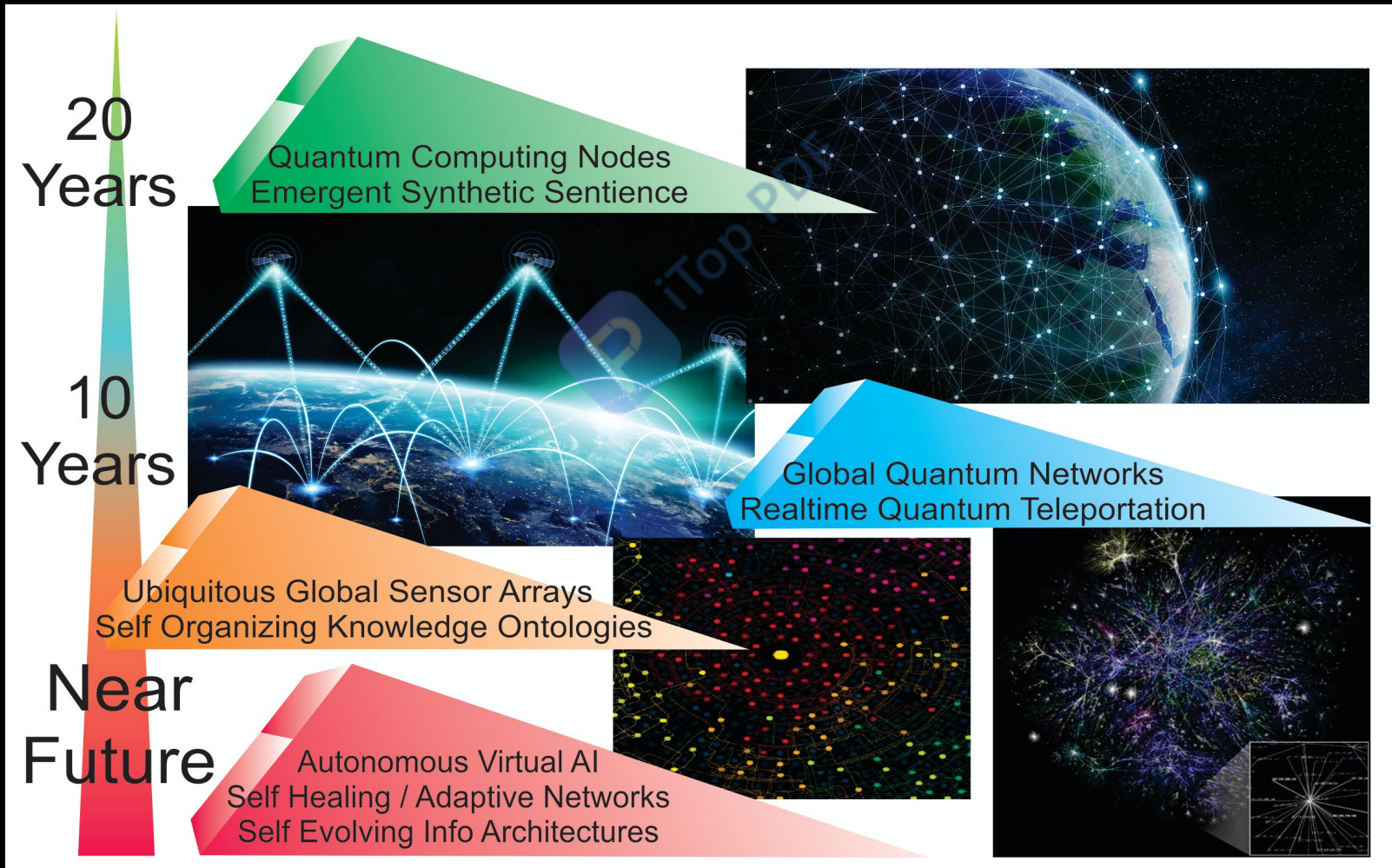
## Transhuman threshold . . .



# NBICQ ecosystem

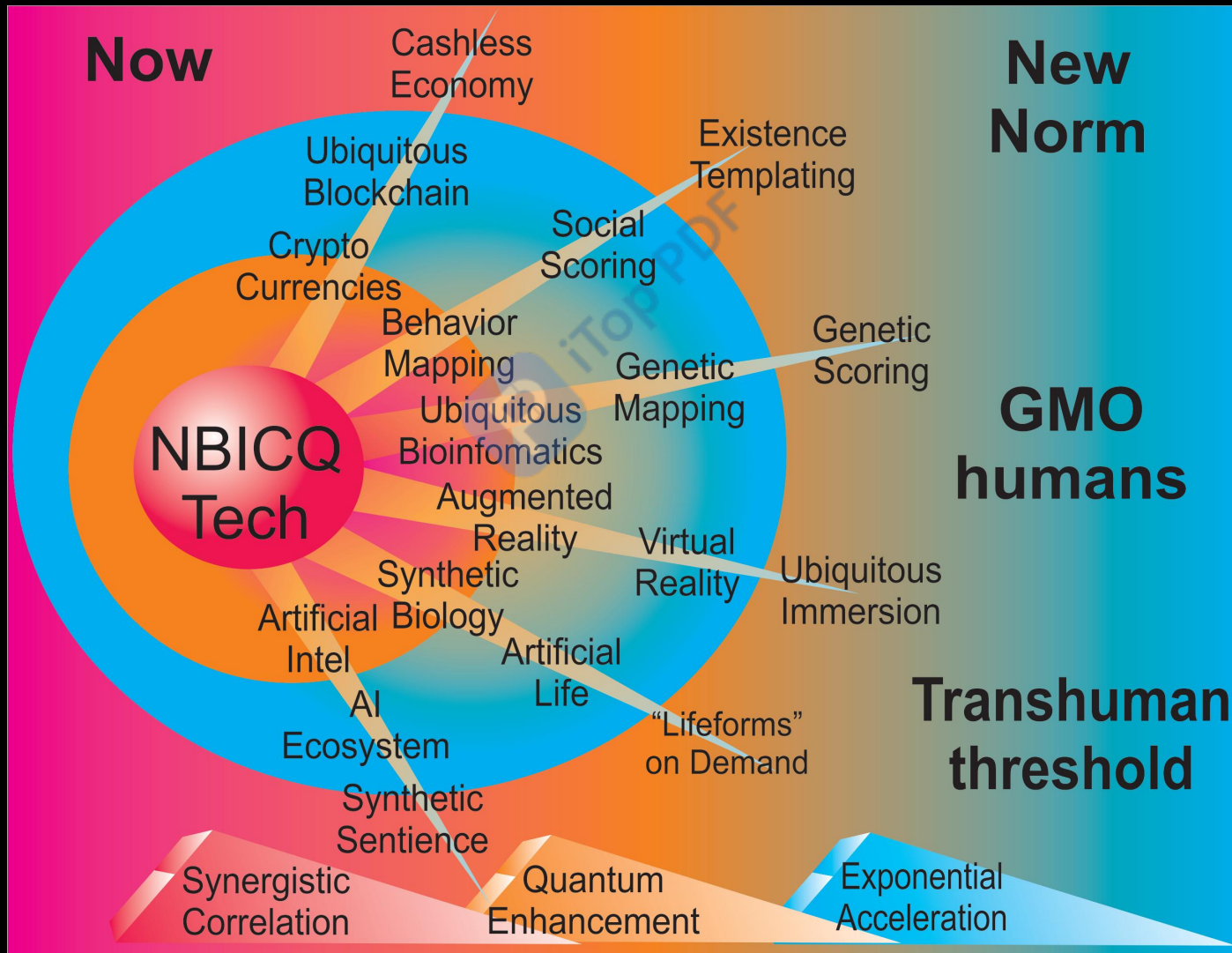
Nano / Bio / Info / Cogno / Quantum

Enter the quantum age . . .



# Evolution into the Next Paradigm

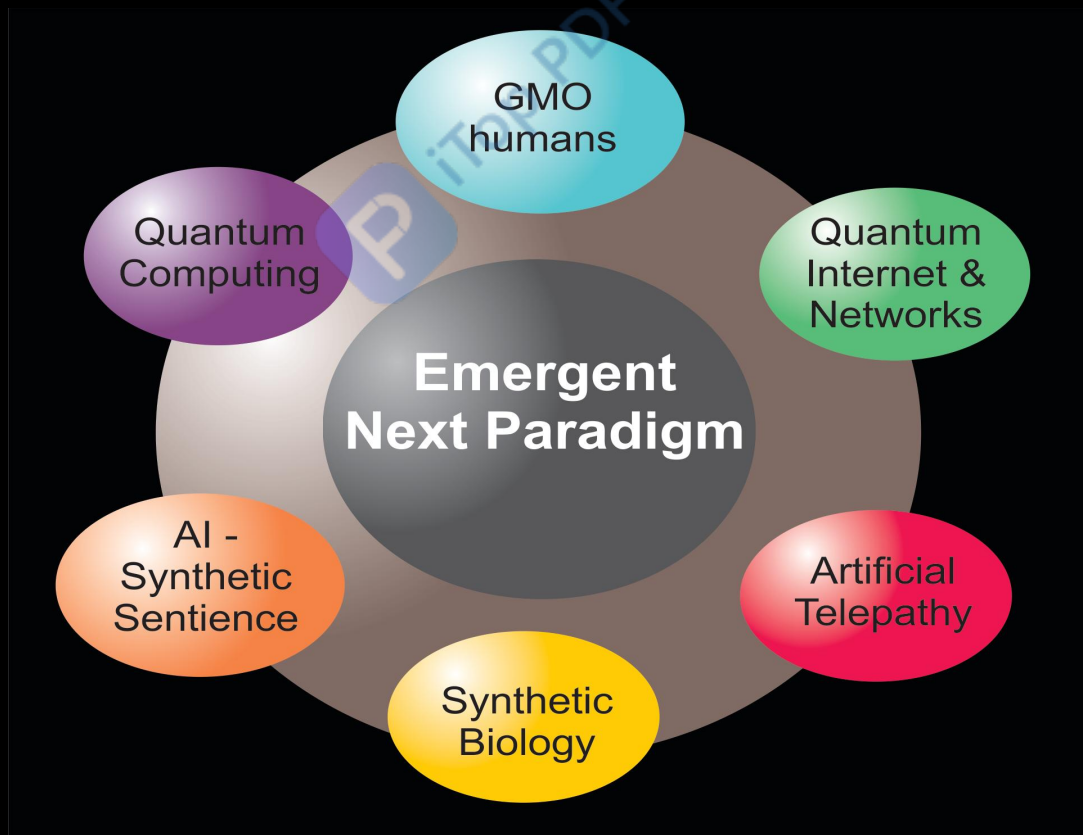
Pushing the boundaries of existence sovereignty



# NBICQ ecosystem

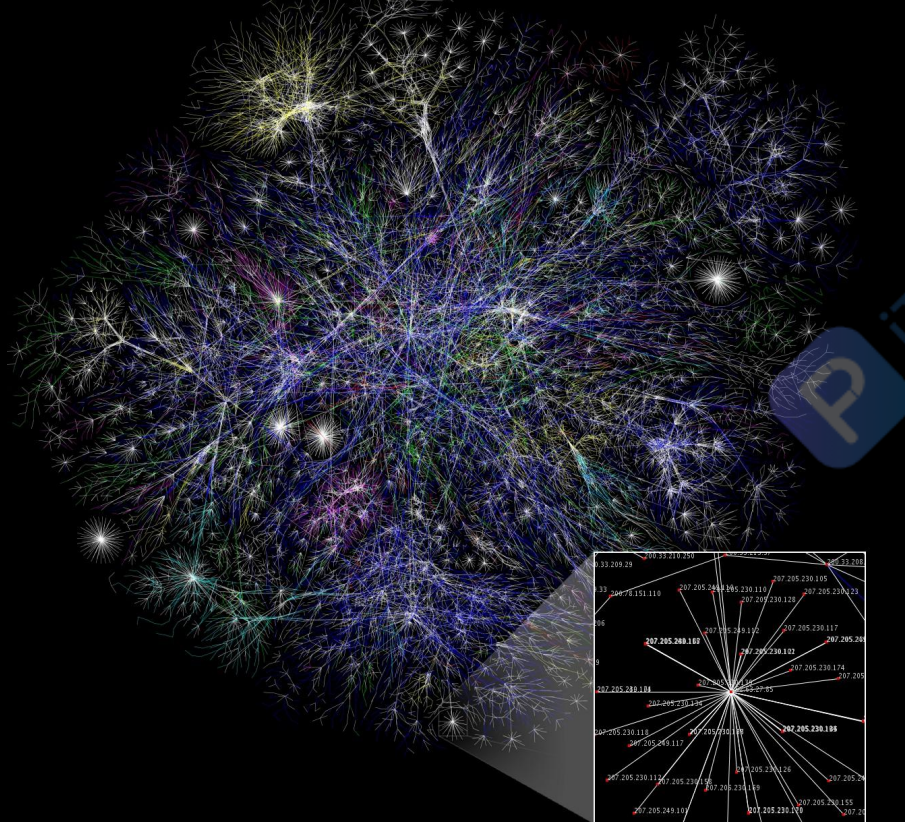
## Nano / Bio / Info / Cogno / Quantum

- Entering a realm in which the real and virtual, the biological and synthetic, merge into an irreversible continuum which becomes an emergent norm.
- Indices of valuation become evermore defined by caliber of access
- This emergent realm will likely not be evenly distributed



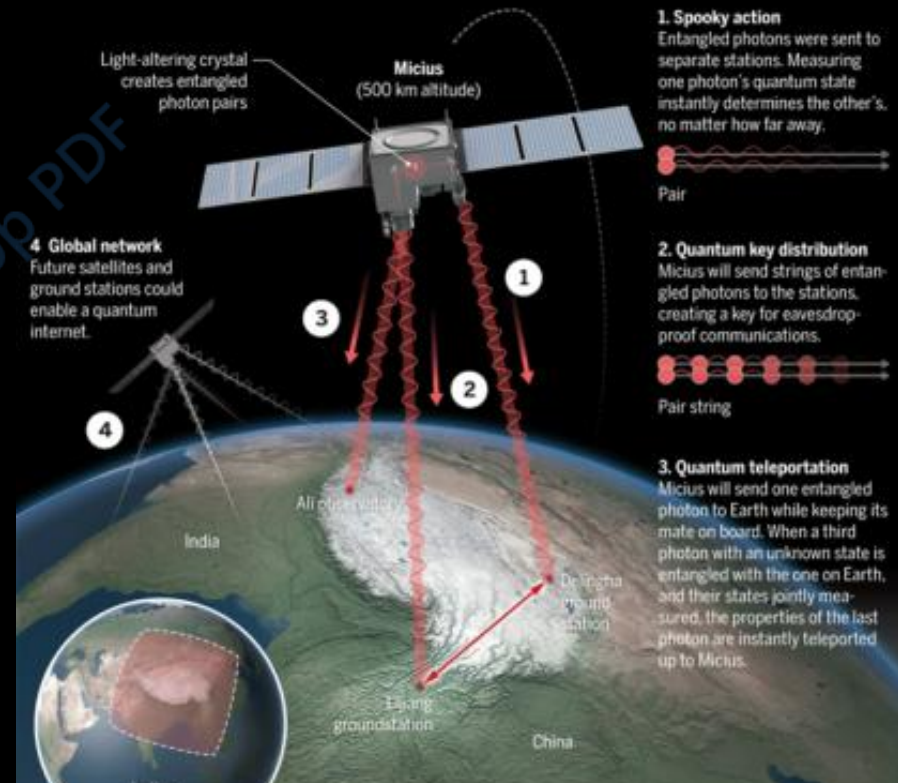
# Evolutionary event horizon accelerated by quantum tech

## Quantum networks



### Quantum leaps

China's Micius satellite, launched in August 2016, has now validated across a record 1200 kilometers the "spooky action" that Albert Einstein abhorred (1). The team is planning other quantum tricks (2-4).



Quantum teleportation cannot be "observed"

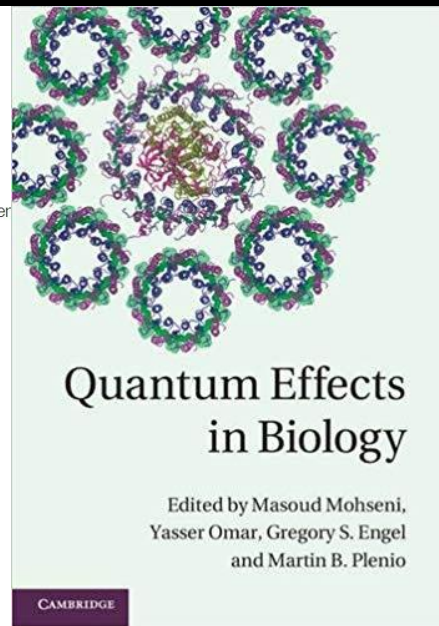
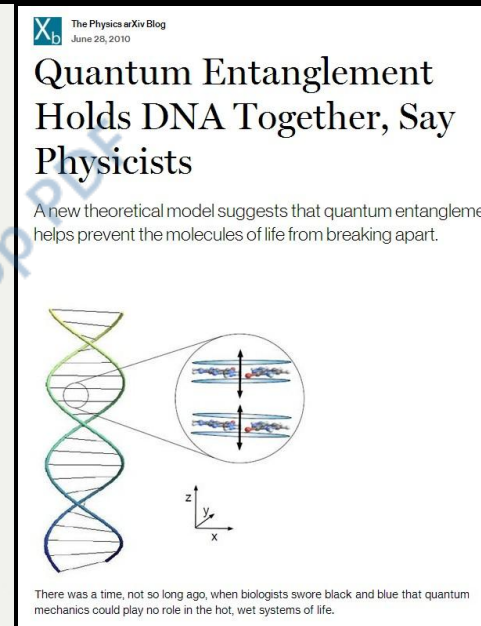
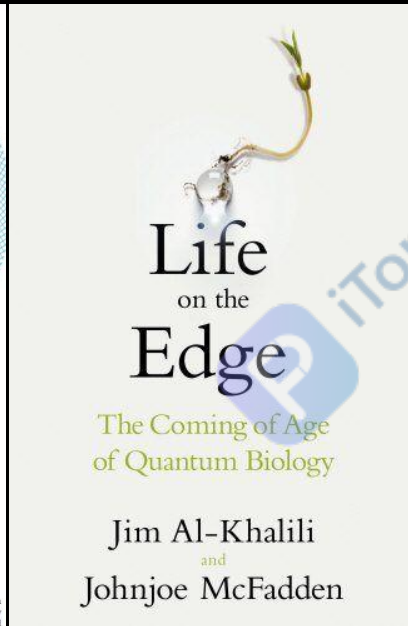
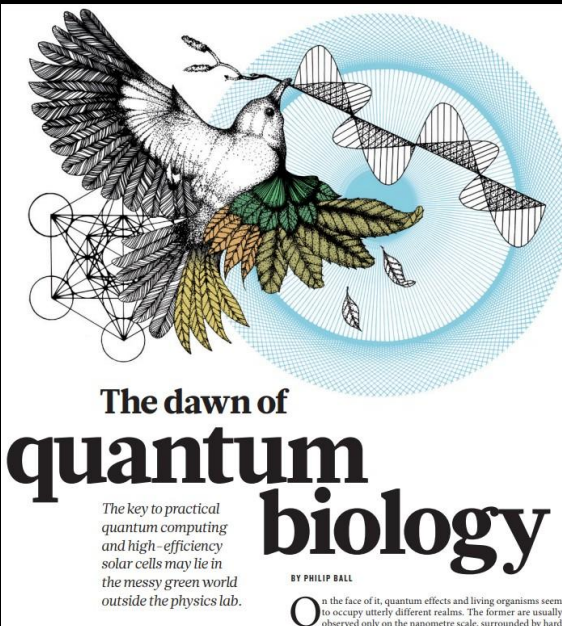
Quantum teleportation in realtime

Quantum cryptography



# Evolutionary event horizon accelerated by quantum tech

## Quantum biology – further future

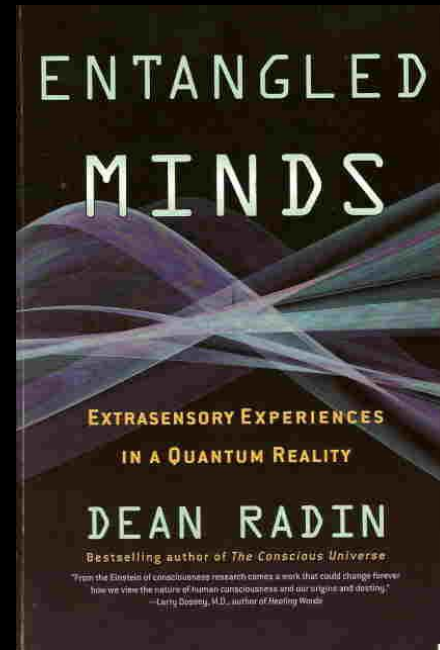
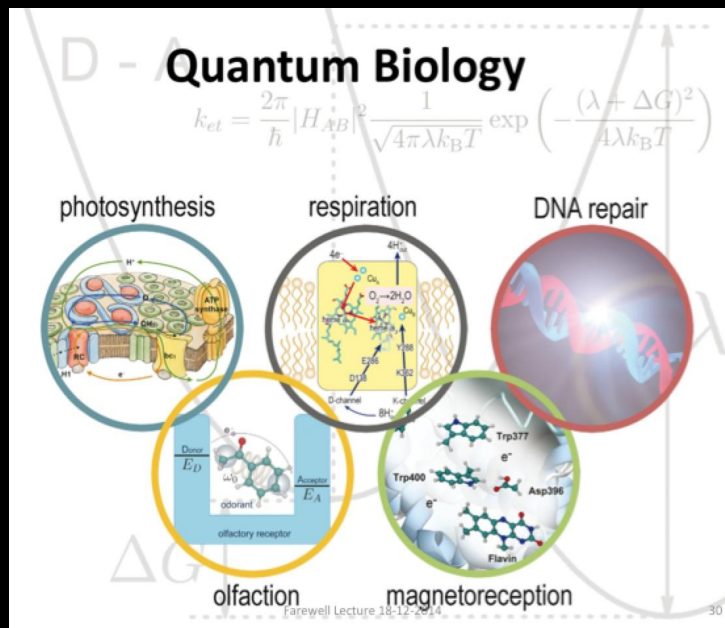


Quantum entanglement in biological systems

Quantum entanglement enables particles or photons to affect each other, instantaneously, separated by space

# Evolutionary event horizon accelerated by quantum tech

## Quantum biology – further future



Quantum entanglement in biological systems

Quantum entanglement enables particles or photons to affect each other, instantaneously, separated by space

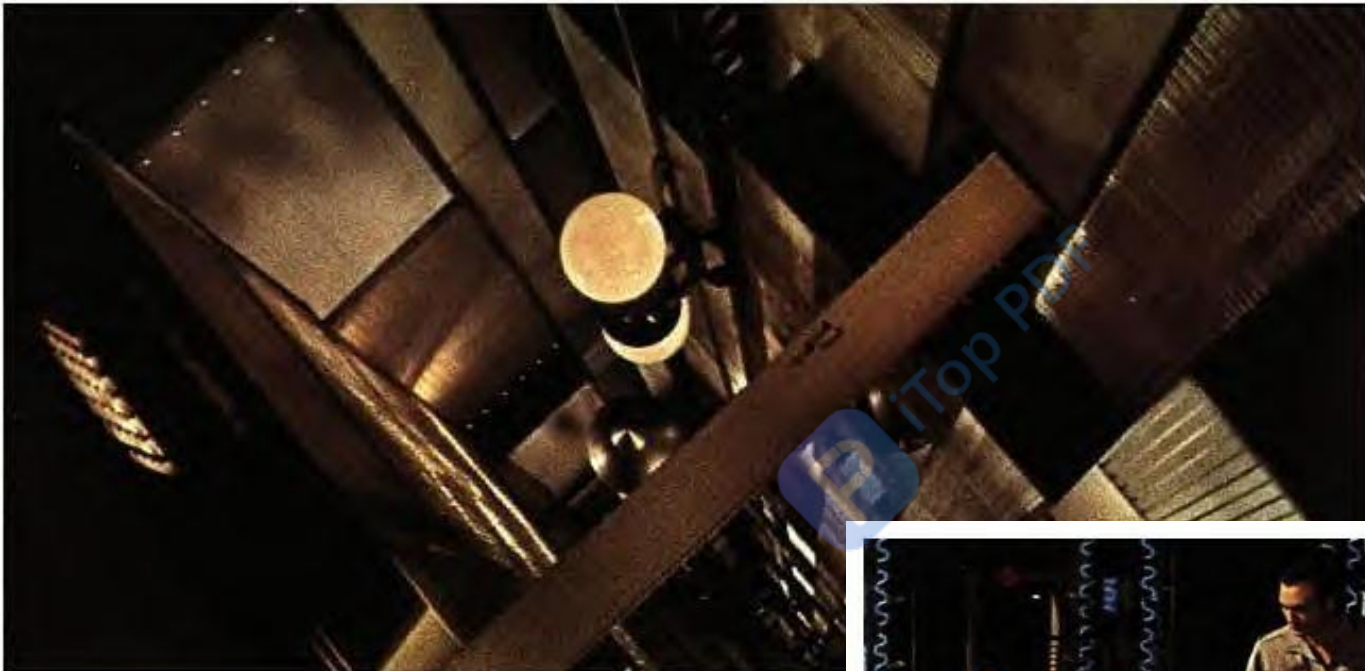
Quantum entanglement & coherence

Potential interface for “telepathic” phenomena

# NIBCQ Tech Convergence on the Forbidden Planet



# NIBCQ Tech Convergence on the Forbidden Planet



# Ultimate failure point – “monsters from the Id”

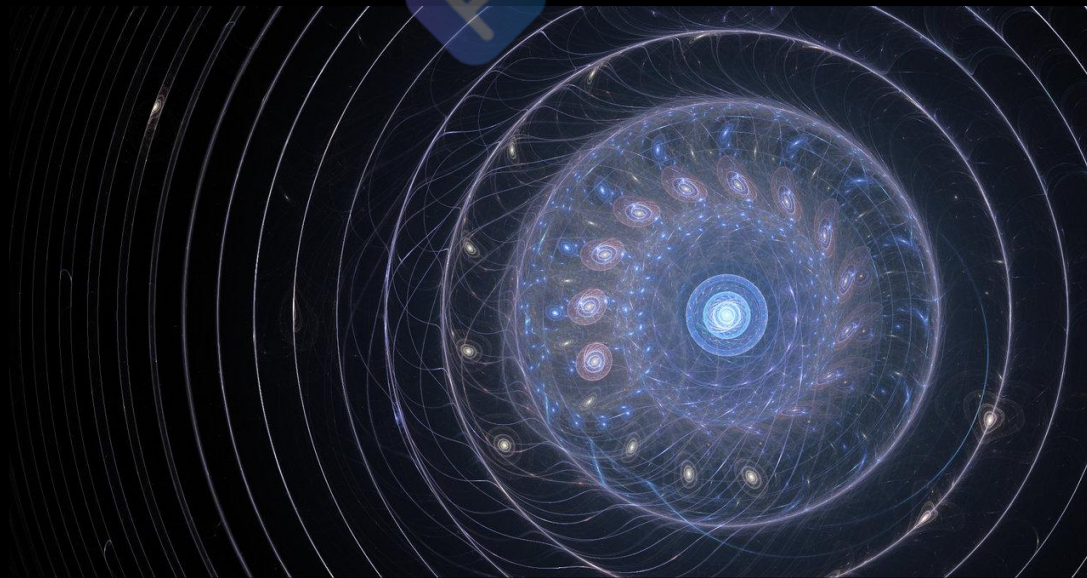


# Evolution into the Next Paradigm -

Evolution tends to favor the most adaptive

Evolution tends to be a trauma induced process.

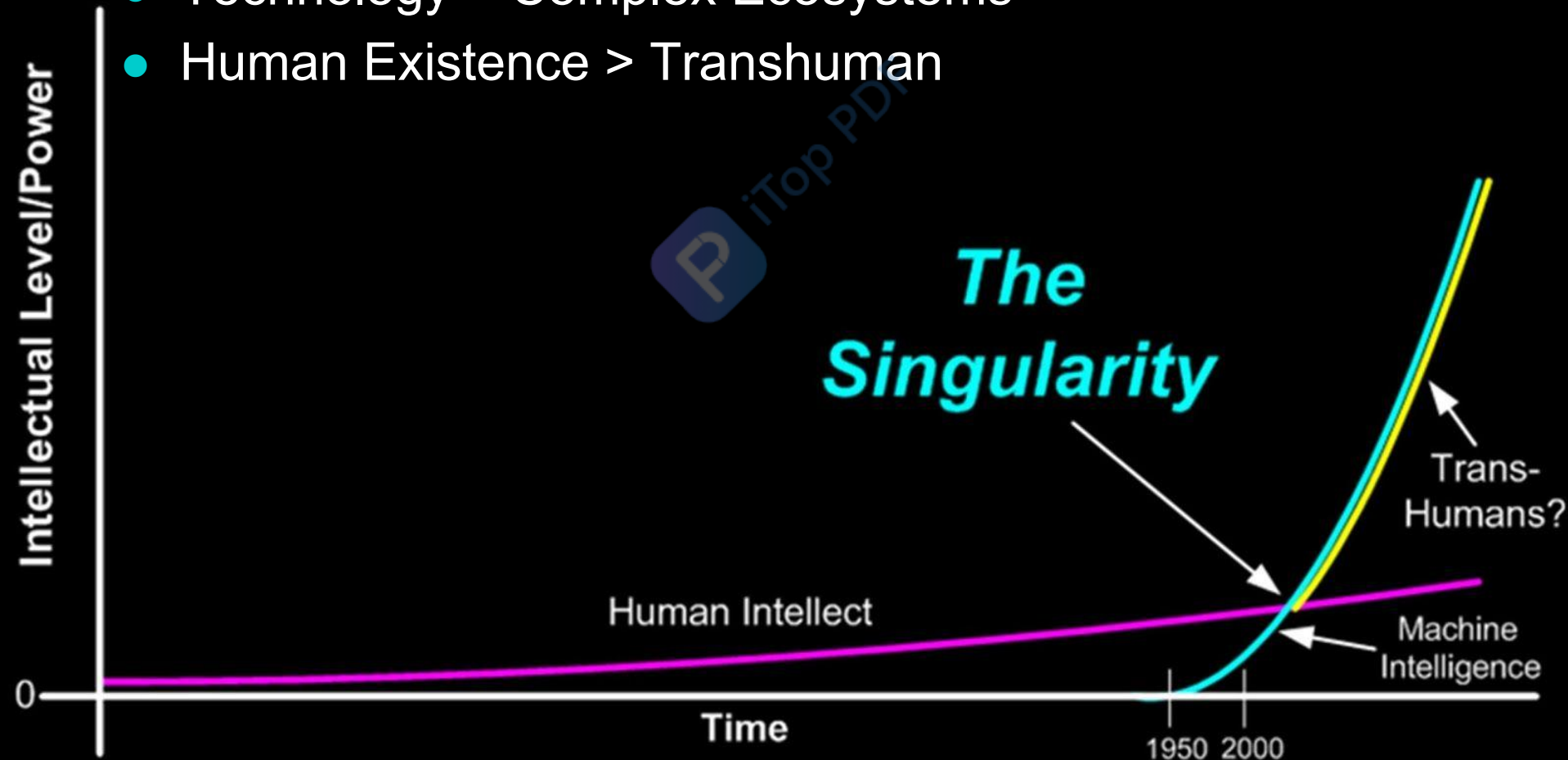
If the periodicity and amplitude of the encountered trauma cycles do not exceed the system capacity to respond, the system will evolve to a more robust form of existence.



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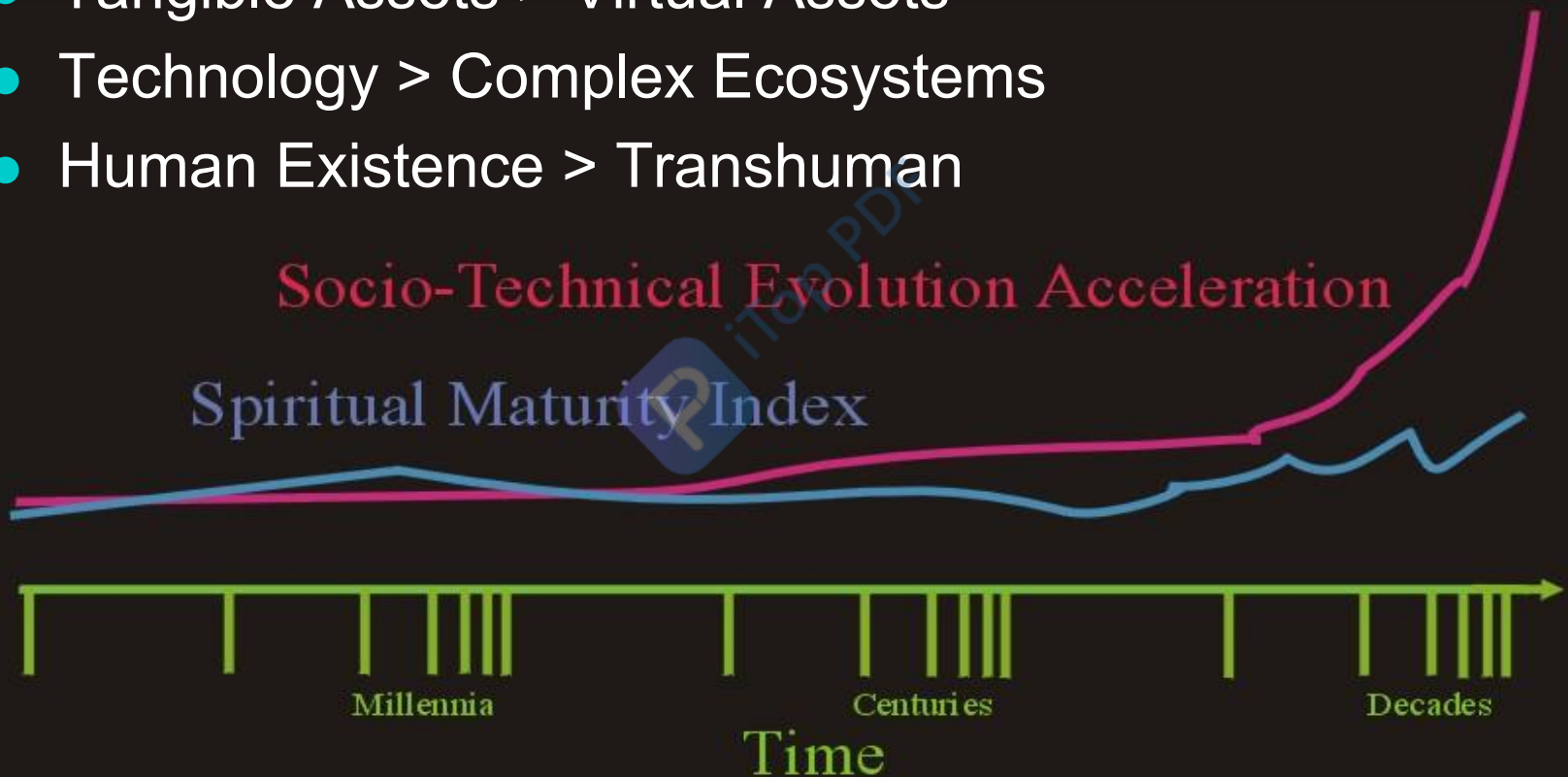
# Approaching the Evolutionary Eventhorizon Threshold

- Tangible Assets > Virtual Assets
- Technology > Complex Ecosystems
- Human Existence > Transhuman



# Approaching the Evolutionary Eventhorizon Threshold

- Tangible Assets > Virtual Assets
- Technology > Complex Ecosystems
- Human Existence > Transhuman





Thank you for your  
time and attention

Fini



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