TECHNOLOGY REVOLUTION

A CATALYST FOR CHANGE OR CHAOS?

JAG DALAL

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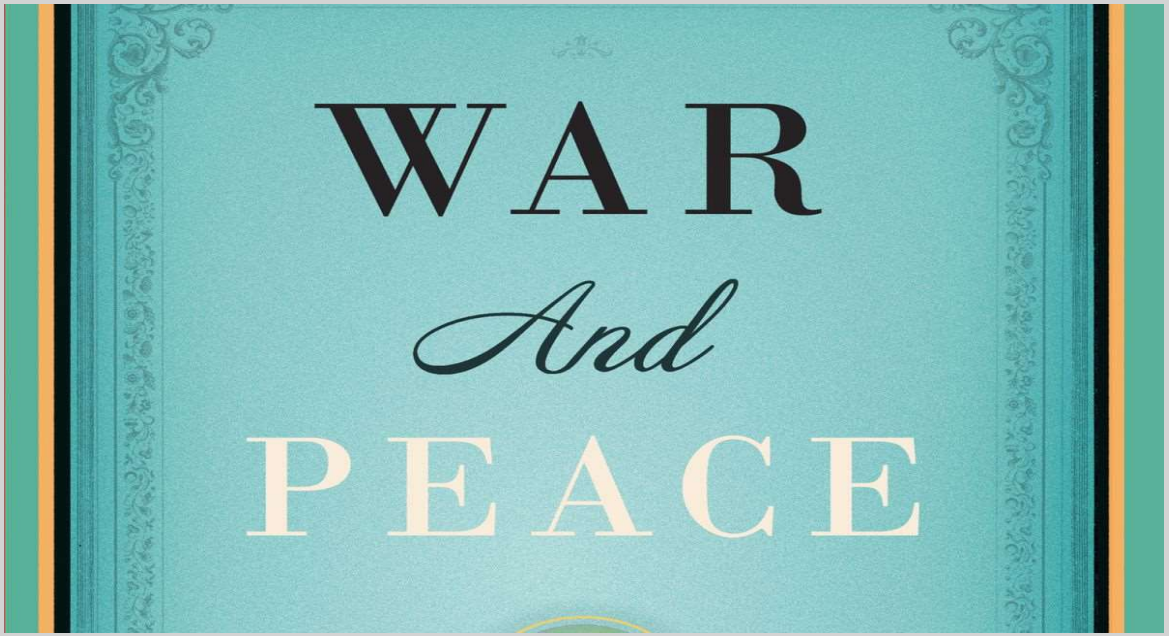
My Challenge

Summarizing "War and Peace" in one sentence



War and Peace chronicles the lives of Russian aristocrats amidst the sweeping historical drama of Napoleon's invasion.

Forces of change

Forces of change are the factors that drive or influence change. They can be natural or human-driven, and they can be positive or negative.

History of revolution

Fir

~ 2 Million years ago

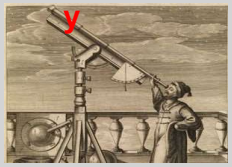
Weapon

~ 400,000 years ago

Agriculture

~ 10,000 years ago

Scientific Discovery



16th Century

Industrial Revolution

18-19th Century

Internet

20-21st Century

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Next revolution

Quantum Computing

Internet

20-21st Century

Industrial Revolution

18-19th Century

Scientific Discovery

16th Century

Agriculture

~ 10,000 years ago

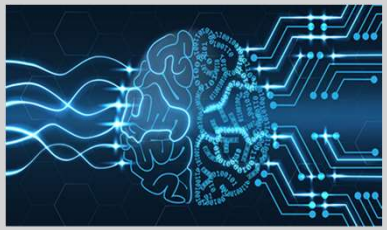
Weapon

~ 400,000 years ago

Fir

~ 2 Million years ago

Forces of change – 2023/24



Technology Breakthroughs

Human factors

Global Climate

Dated Infrastructure

Unsettled Global Politics

Pandemic Cycles

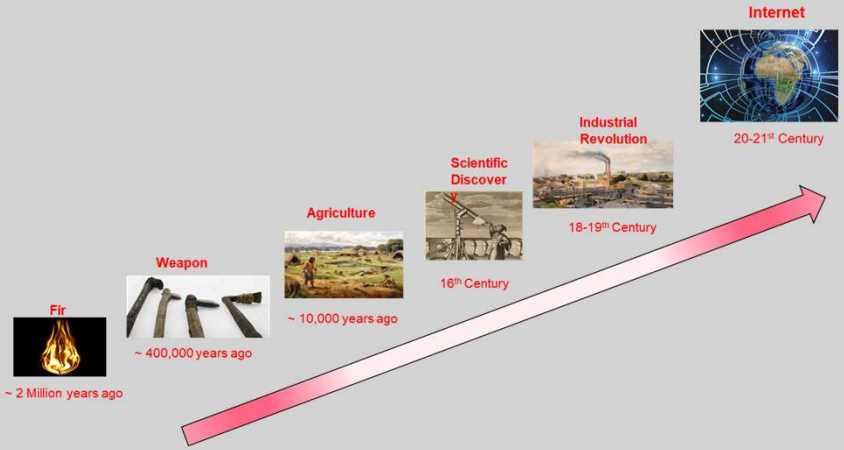
Why is it so disruptive now?

Technology Breakthroughs

Global Climate

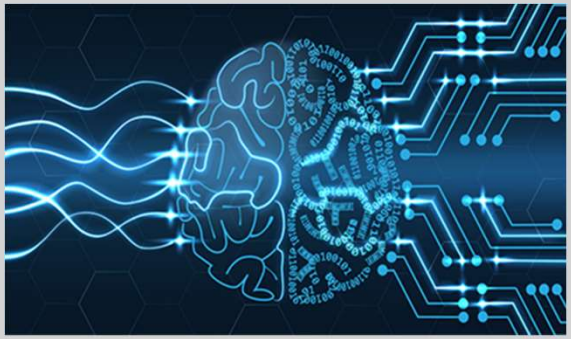
Dated Infrastructure

Pandemic Cycles

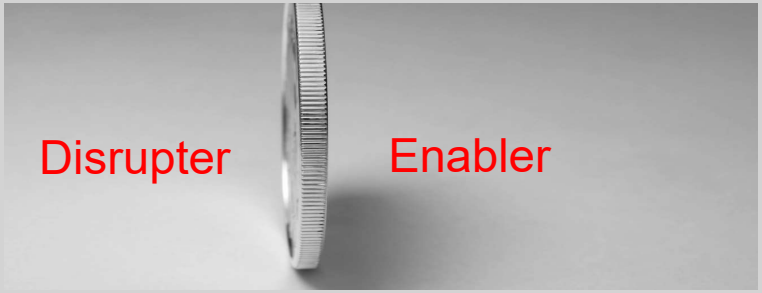


1. Each disruption upsets the equilibrium
2. Humans are directly impacted – positively and negatively disrupting their abilities and contribution
3. **Time is collapsing between disruptions, reaching towards "zero."**

Relationship



Technology Breakthroughs



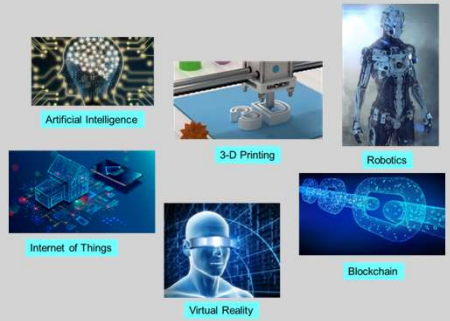
Global Climate

Pandemic Cycles

Dated Infrastructure

Unsettled Global Politics

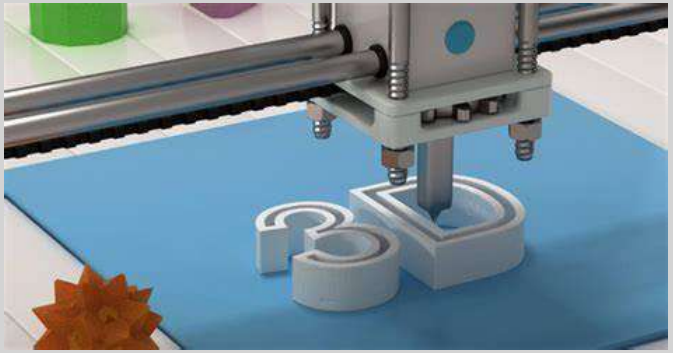
20 Applications of technology – enablers or disrupters?



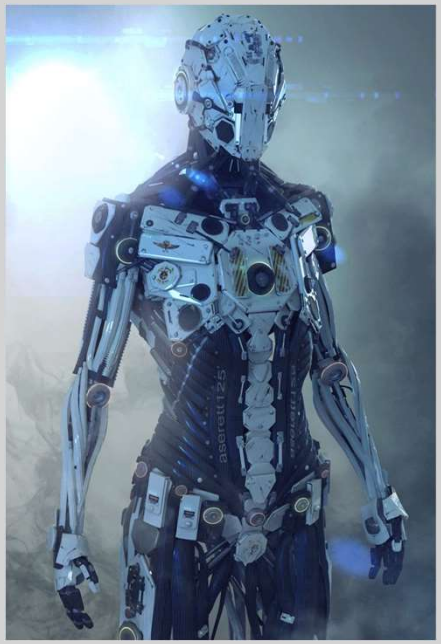
1. **Artificial Intelligence (AI) and Machine Learning**
2. Quantum Sensing and Imaging
3. 5G and 6G Wireless Networks
4. Internet of Things (IoT) and Connected Devices
5. Quantum Computing
6. **Renewable Energy and Energy Storage**
7. Autonomous Vehicles and Drones
8. **Biotechnology and Gene Editing (CRISPR)**
9. Personalized Medicine and Precision Healthcare
10. **3D Printing and Additive Manufacturing**
11. Nanotechnology and Advanced Materials
12. **Robotics and Automation**
13. Edge Computing and Decentralized Computing
14. **Augmented Reality (AR) and Virtual Reality (VR)**
15. Space Exploration and Commercialization
16. **Neuromorphic Computing and Brain-Computer Interfaces**
17. Synthetic Biology and Engineered Organisms
18. Sustainable Agriculture and Food Production
19. Blockchain and Distributed Ledger Technologies
20. Decentralized Finance (DeFi) and Cryptocurrencies

Key Enabling technology

Artificial Intelligence

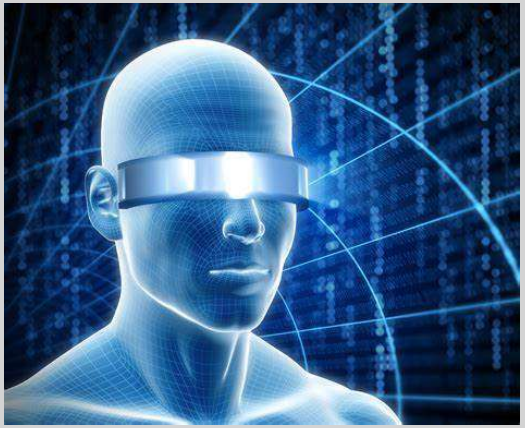


3-D Printing

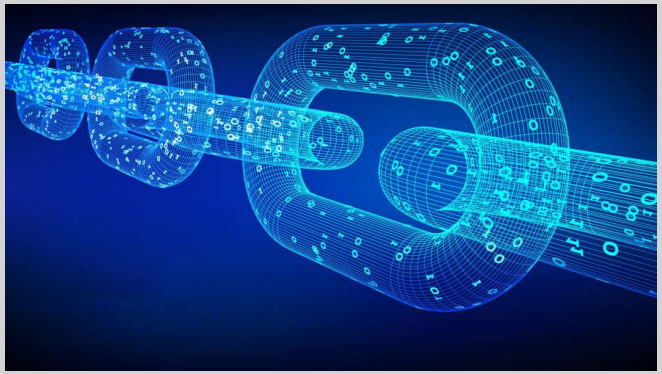


Robotics

Internet of Things

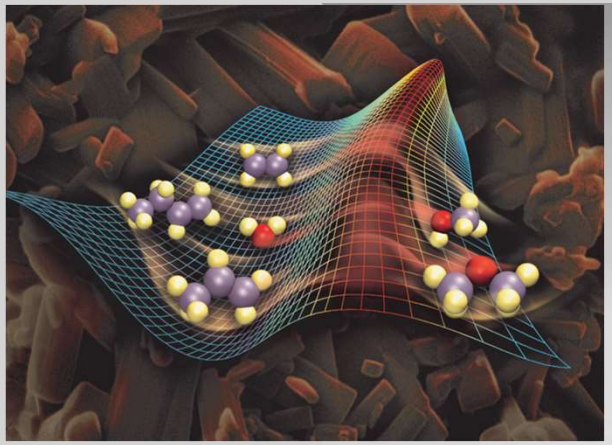


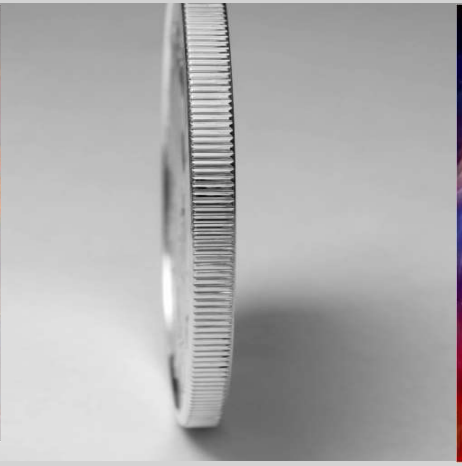
Virtual Reality



Blockchain

Technology
Breakthroughs

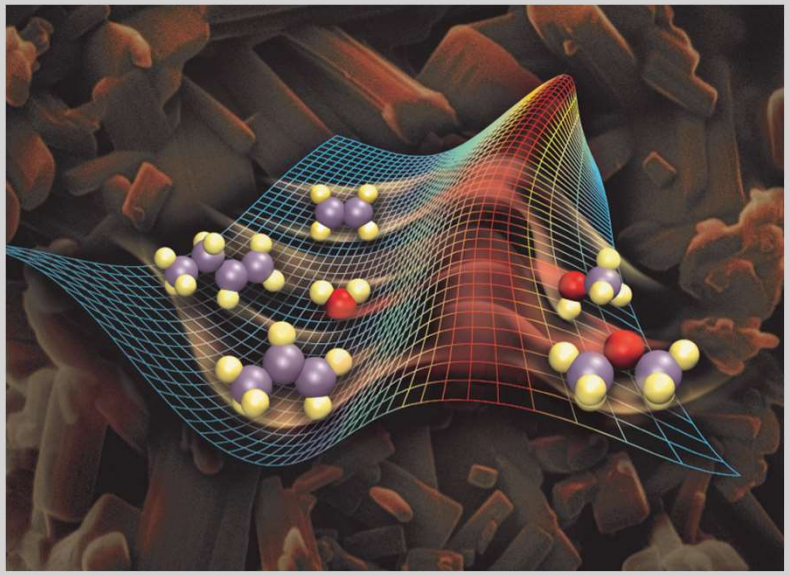




Catalyst

Chaos

Technology – A Catalyst for Change



Technology
Breakthroughs

Dated
Infrastructure

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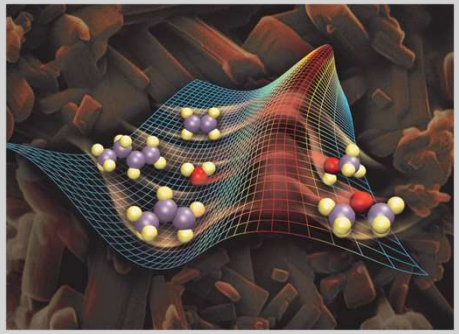
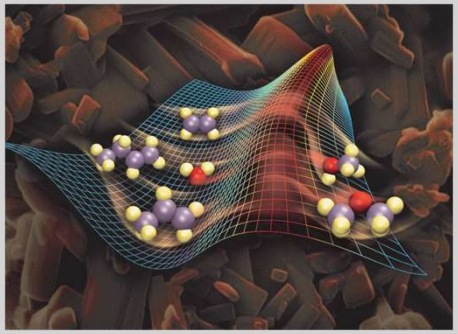
Technology – A Catalyst



Human factors

- Workforce
  - The aging of the population requires more automation
  - Assistance in “tedious” and “routine” activities
  - Enabling training
- Health
  - Improved healthcare options
  - Improving health assessment
  - Accelerating research for cures
  - Enabling access to remote patients
- Social care/comfort
  - Support/care for the older population

Technology – A Catalyst



Global Climate

- Reducing CO_2
  - Enable alternate fuel sources
  - Improved fuel efficiency
  - Locate and reduce sources of higher-level creation
  - Create alternatives for capturing CO2
- Knowledge
  - Speed up the acquisition of knowledge and enable new solutions in a more rapid time

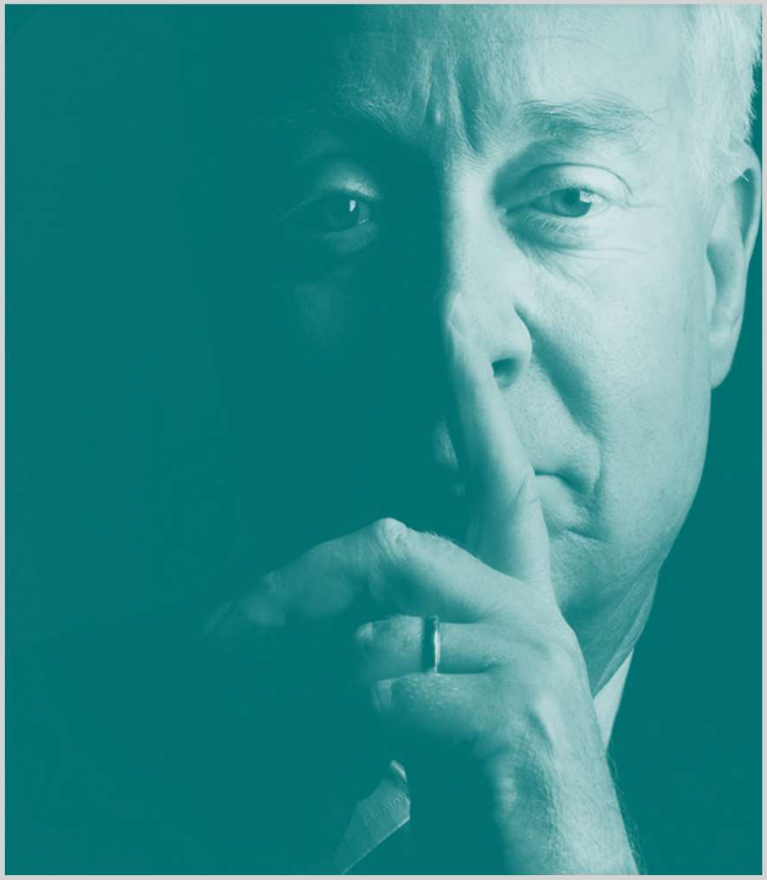
Technology – Chaos

Technology
Breakthroughs

Technology – A Chaos

- Human impact
  - Creating a “class difference” (knowledge)
  - Disrupting established structure (including educational curricula)
- Business impact
  - Disrupting established business models
  - Reducing strategic planning windows
- Crime impact
  - Promoting personal crime
  - Enabling disruption to infrastructure
- Legal impact
  - Requiring creation of a new set of standards
  - Enacting applicable laws to govern new technology

Key take aways



- History has shown that the forces of change drive revolutions, which alter the life balance
- Forces of change are human-driven and/or nature-driven
- Most of the forces of change have a trend, which can be observed over a period of time
- The time between changes in these forces is shrinking, creating a challenge in predicting and managing them
- Some of the forces of change can be managed when planned ahead
- Forces of change can have both a positive and a negative impact on lives
- Human nature is to "fight" the changes

QUESTION:
Forces of change
Are we at a "Tipping Point"

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Speaking Engagement Topics

- Delving into the Forces of Change (a series)
- Future is changing – How do you remain relevant and succeed?
- Creating a culture of innovation – *"Renew, revise, or die."*
- Knowledge Management – Leveraging what you know and how to profit from it