

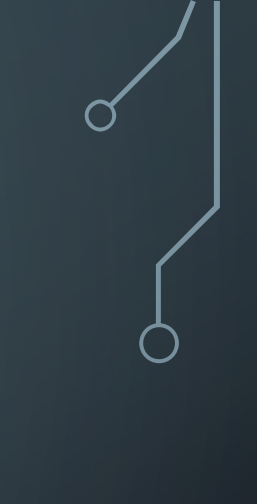
A decorative graphic on the left side of the slide, consisting of a network of thin, light blue lines and small circles, resembling a circuit board or a neural network, extending from the top to the bottom of the frame.

COVID-19, BLACK SWANS AND ENTERPRISE RISK MANAGEMENT

ENTERPRISE RISK MANAGEMENT AFTERNOON - 24 NOVEMBER 2021



AGENDA

- Past events
 - Future scenarios
 - ERM perspective
- 
- 
- 

BLACK SWANS DURING TIMES OF OUR GREAT GRANDPARENTS



<https://bobrichillustration.com/hedgeye-cartoons/>

Natural:

- Volcano (1815, 1883, 1902)
- Quake (1902, 1906, 1976, 2004, 2010)
- Meteorite (1908, 2010, 2013)

Man-made:

- Terrorism (1920, 2001), wars
- GFC or hyperinflation (1922)

Biological:

- Pandemic (1918, 1981, 2002, 2019)
- Crop failure, famine (1816, 1845-1849, 1958)

Technological:

- Geomagnetic storm (1859, 1921, 1989, 2003)
- Cyber
- Nuclear (1986, 1979, 2011)

BLACK SWANS DURING TIMES OF OUR GREAT GRANDPARENTS – TO CURE OR NOT TO CURE?

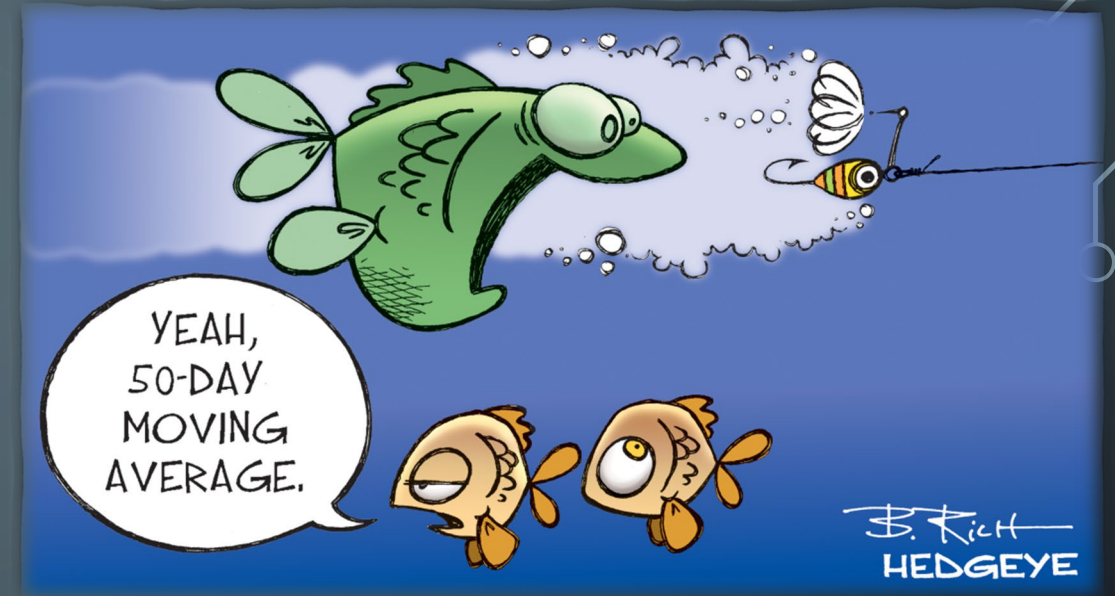
- The plague doctors are famously depicted in cloaks and hats with beaked masks which were thought to protect the wearer by distancing the physician's face – especially the nose and mouth – from the infected patient.
- Crude solutions, using kill-or-cure
 - Animal cures
 - Potions, Fumigations, Bloodletting, Pastes
 - Flight from Infected Areas and Persecution of Marginalized Communities
 - Religious Cures
 - Quarantine and Social Distancing
- Are the methods we employ to keep the economy healthy as crude as medieval ~~kill-or~~ cure?



BLACK SWANS FOR OUR GRANDCHILDREN

All the above plus:

- Climate change
- Government debt bubble
- Financial leverage
- AI singularity
- Changes in economic power



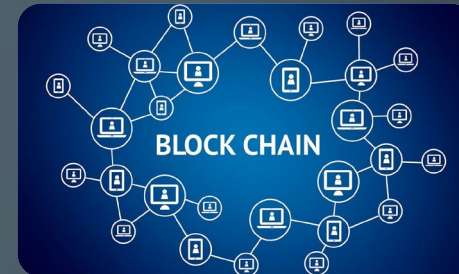
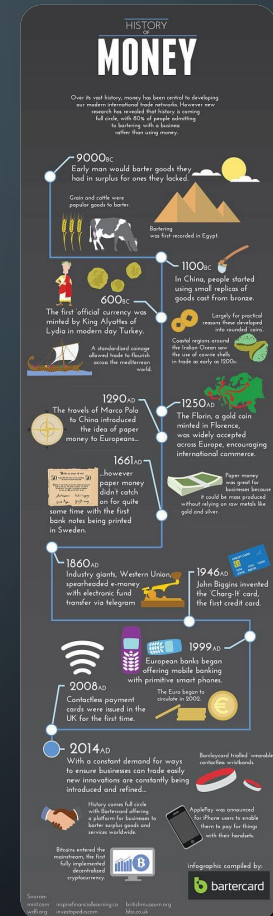
<https://bobrichillustration.com/hedgeye-cartoons/>

... but no one knows the future:

- Mini-chromosome technology
- Neurolink
- Longevity leap

MONEY AND THE BLOCKCHAIN? (OR, BEAUTY AND THE BEAST...)

- Money had evolved multiple iteration since the A.D.
- Could blockchain technology take on an acceptable form as currency?
 - Store of value | Unit of account | Medium of exchange
- Uses of blockchain have multiplied and is becoming more integral to modern day commerce
 - Immutability means it is economically infeasible to reverse engineer hashes and rewrite blockchain history.
 - Both public and permissioned blockchains use some variation of hashing to link blocks together.
- Not just a store of value
 - Potential use as identification – replacing physical documents
 - Tracking of the supply chain – overcome trust issues around genuineness of products



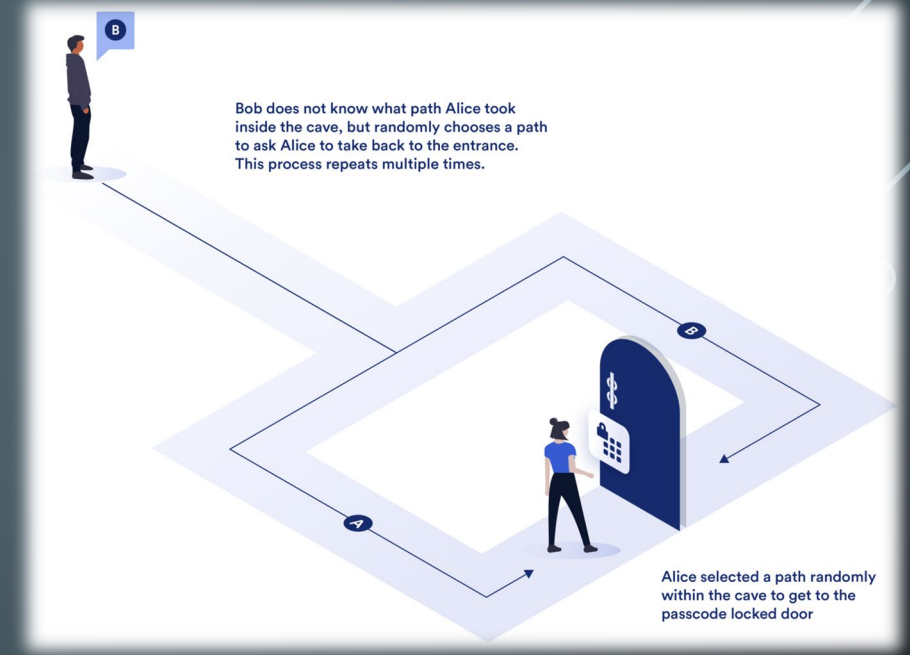
Source:
https://www.emolument.com/career_advice/history_money#gsc.tab=0

BLOCKCHAIN – DIGITAL IDENTITY & SMART CONTRACTS

- Zero knowledge proofs and the concept of verifying information without revealing it will radically change identity management.
 - Improves privacy & security
- “Zero knowledge proofs are defined as those proofs that convey no additional knowledge other than the correctness of the proposition in question.”

“The Knowledge Complexity of Interactive Proof Systems” (1985) Goldwasser , Micali , Rackoff

A smart contract is a computer code that can be built into the blockchain to facilitate, verify, or negotiate a contract agreement. Smart contracts operate under a set of conditions that users agree to. When those conditions are met, the terms of the agreement are automatically carried out.

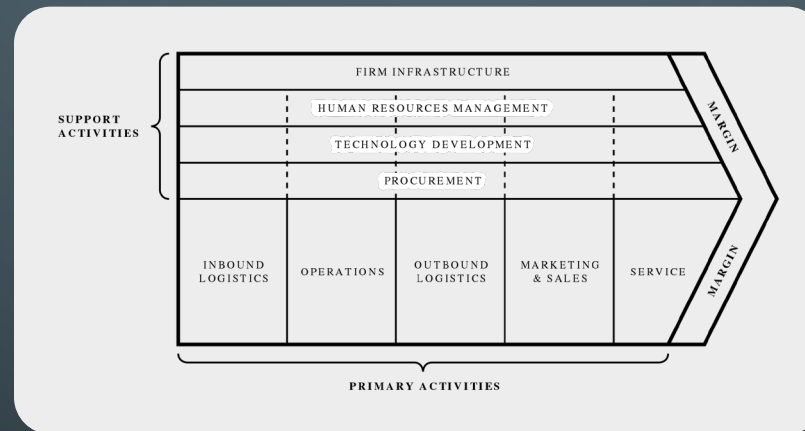


<https://blog.chain.link/what-is-a-zero-knowledge-proof-zkp/>

VALUE CHAIN & SUPPLY CHAIN & BLOCKCHAIN

- Porter's Value Chain – with money and insurance integral in the scheme of things

- Inbound logistics
- Operations
- Outbound logistics
- Marketing & sales
- Service

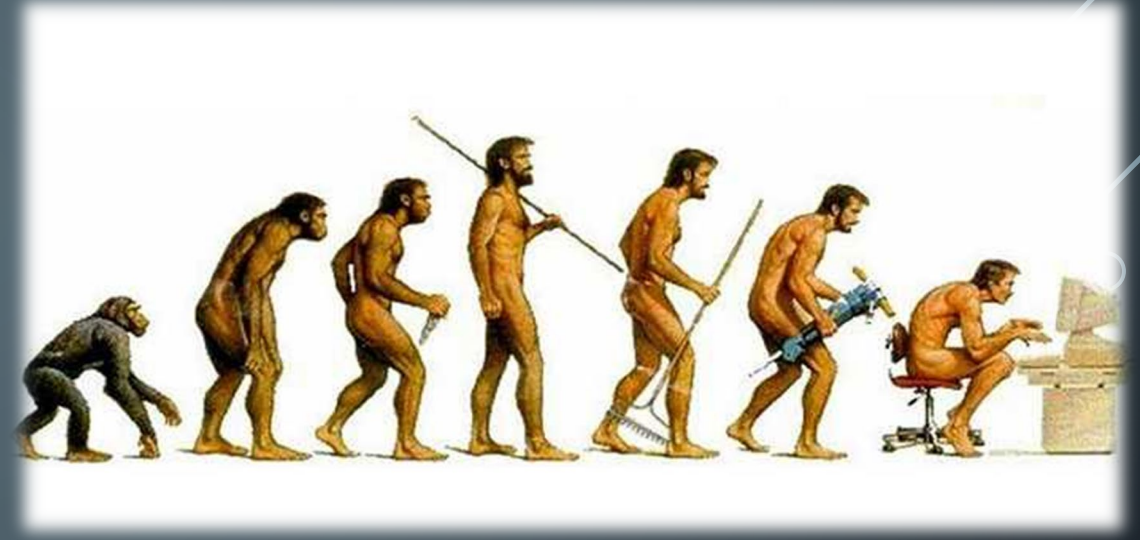


- The most important challenges in supply chains include:
 - Payments | Legal/contracts | Customs | Provenance | Dispute resolution
- Blockchain will add value by proving who, what, when, where, and why at every step



AI & HUMAN EVOLUTION?

- Evolution is essentially a slow and gradual process of accumulation of small changes
- Digitization is becoming a catalyst of human evolution
 - Blockchain technology has been observed to mimic DNA in cells
<https://earthsky.org/human-world/blockchains-work-like-dna-in-cells/>
- Will we be walking around with electronics integrated into our human body?
- Will we need to be prepared to prevent or avoid electronic component shock or failures?



ERM



Stress a variety of scenarios affecting assets, liabilities, supply chain and economic sectors to prepare broadly.

ASSETS PARAMETERS CHEAT SHEET

Economic

CPI

GDP growth

Number of insolvencies

Unemployment

Property & rental prices

Financial

Equity prices

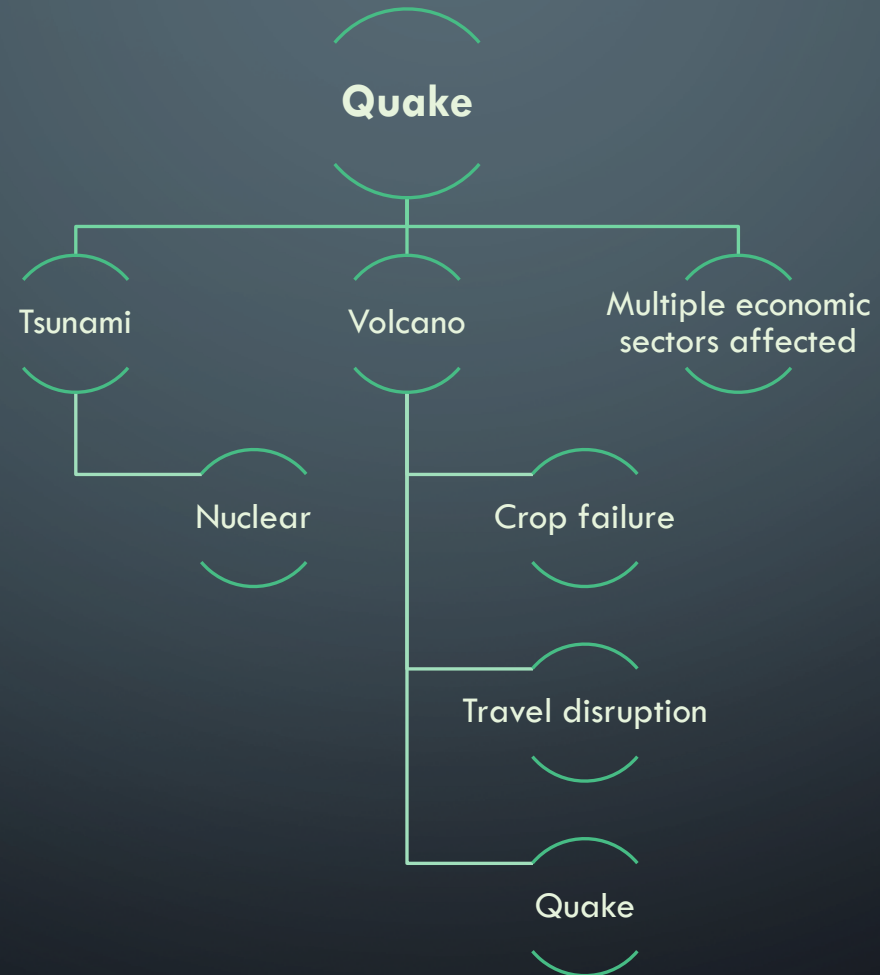
Interest rates

Credit spreads

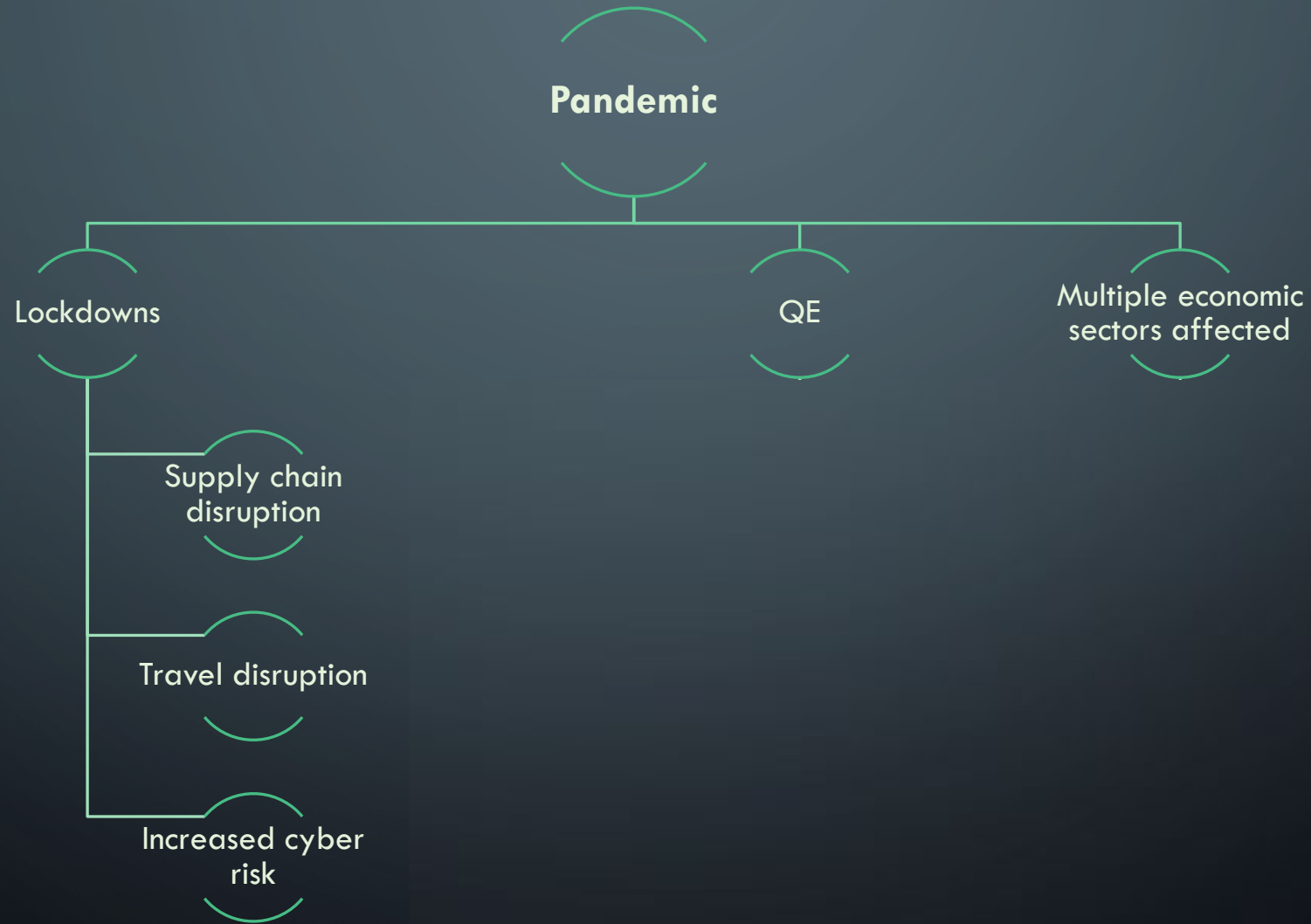
FX

Carbone tax level

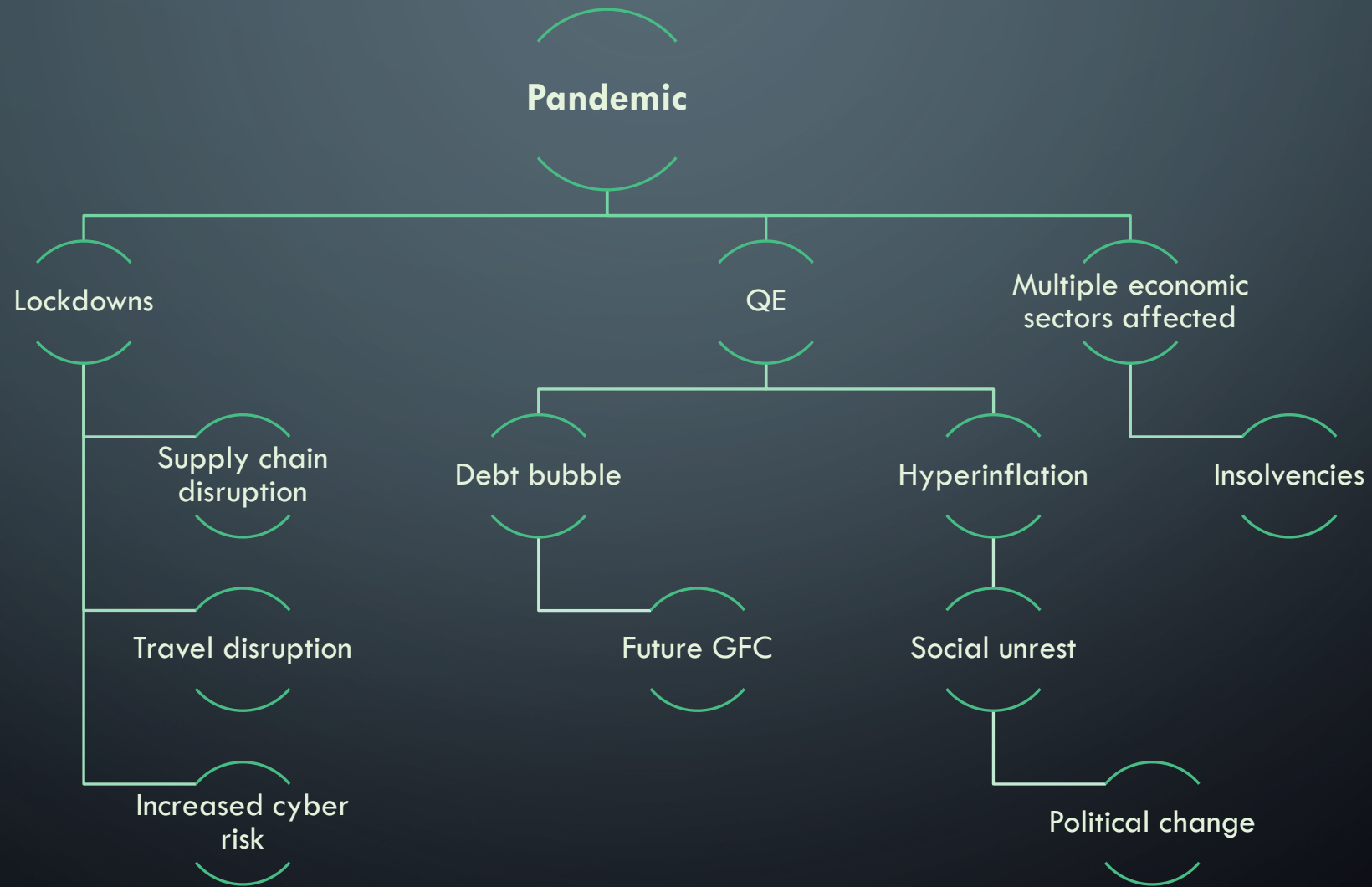
INTERDEPENDENCE – QUAKE



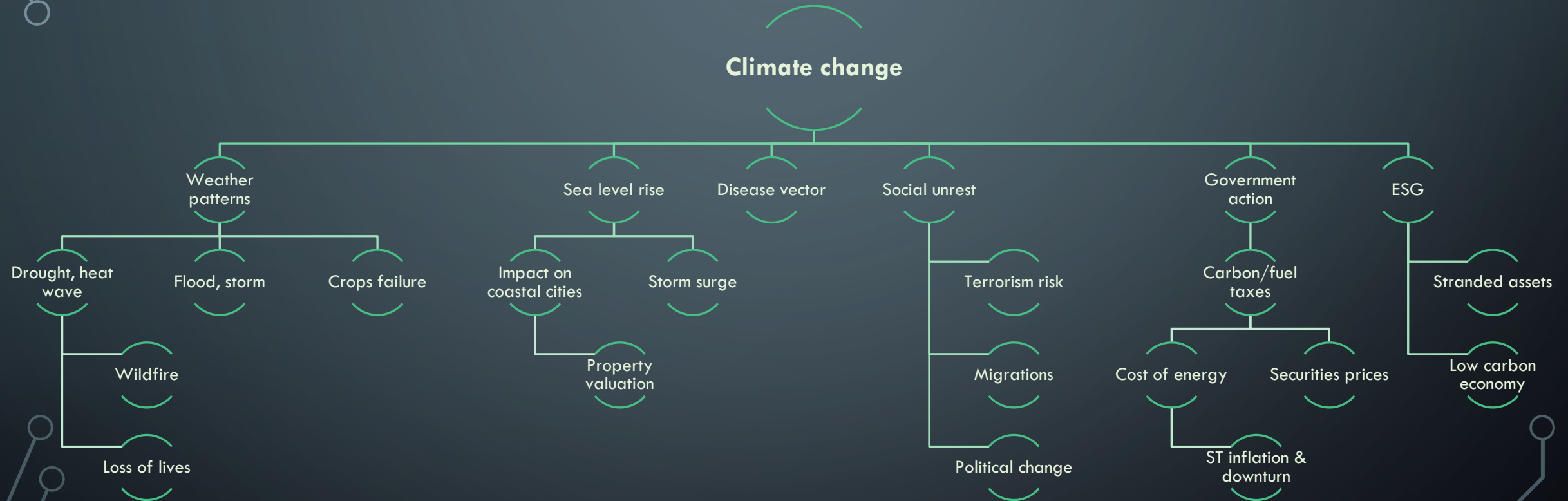
INTERDEPENDENCE – PANDEMIC (1 / 2)



INTERDEPENDENCE – PANDEMIC (2/2)



INTERDEPENDENCE – CLIMATE CHANGE



AQ - ADAPTABILITY QUOTIENT

- Companies that failed to adapt had been successful in the past, but were largely unable to do the following: (CPA – Building business adaptability)
 - Consider how their markets were changing
 - Admit that the legacy business model was outdated
 - Let go of time-honoured business practices
 - Restructure around new consumer demands
 - Embrace new technology available to them.
- Assess “what-ifs” – Unlearn – Explore

3 ways to measure your adaptability - and how to improve it - TED - Natalie Fratto - 5 Jul 2019

Also, try the AQai adaptability assessment and training platform – www.aqai.io



<https://medium.com/@rossthornley/adaptability-quotient-a-foundation-for-survival-and-the-key-to-thriving-in-an-era-of-massive-2964c652da64>