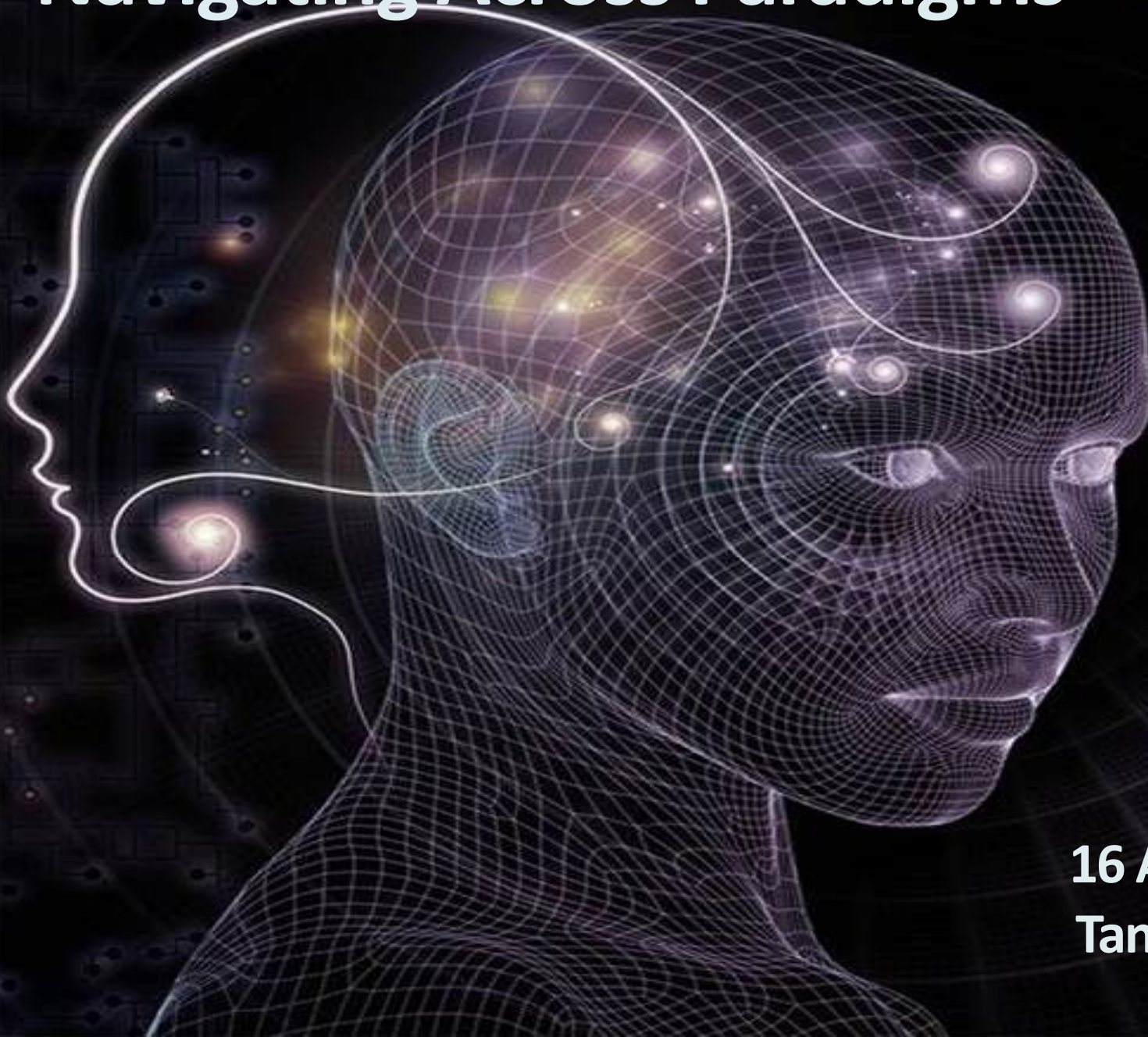
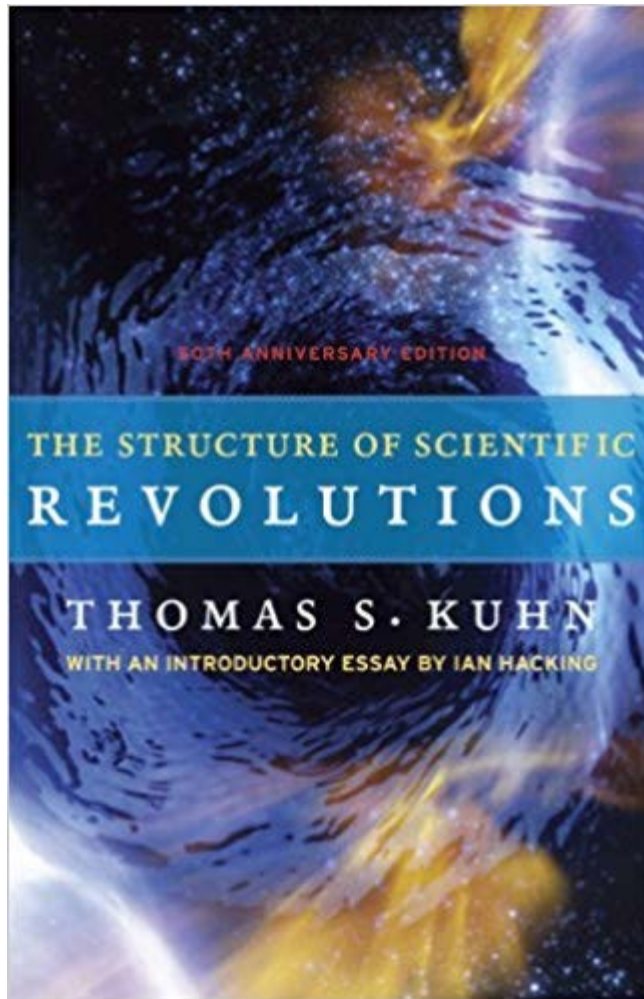
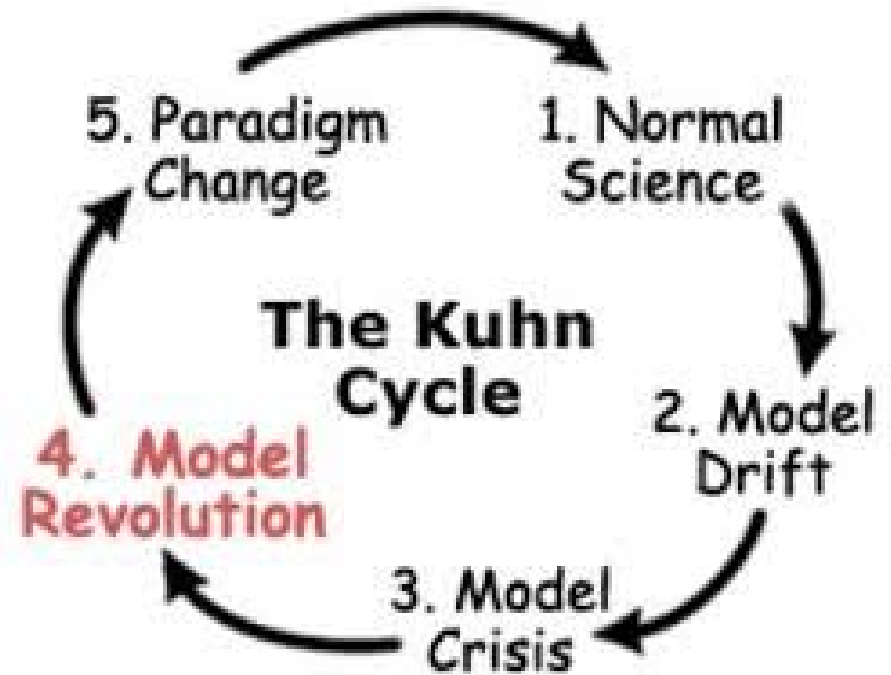


Navigating Across Paradigms



16 August 2018
Tan Suee Chieh

Thomas Kuhn's Structure of Scientific Revolutions



Navigating across Paradigms

Paradigm A

The world is going through unprecedented acceleration. Many fundamental assumptions about work, industry and society will change in the next 30 years.

Speed, Pervasiveness and Impact

Paradigm B

The world is always changing, but we have been through this before. Agricultural revolutions, and preceding industrial revolutions. And life insurance is different.

Have no fear, we will be fine.



Navigating across Paradigms

Paradigm A

The world is going through unprecedented acceleration. Many fundamental assumptions about work, industry and society will change in the next 30 years.

Speed, Pervasiveness and Impact

Paradigm B

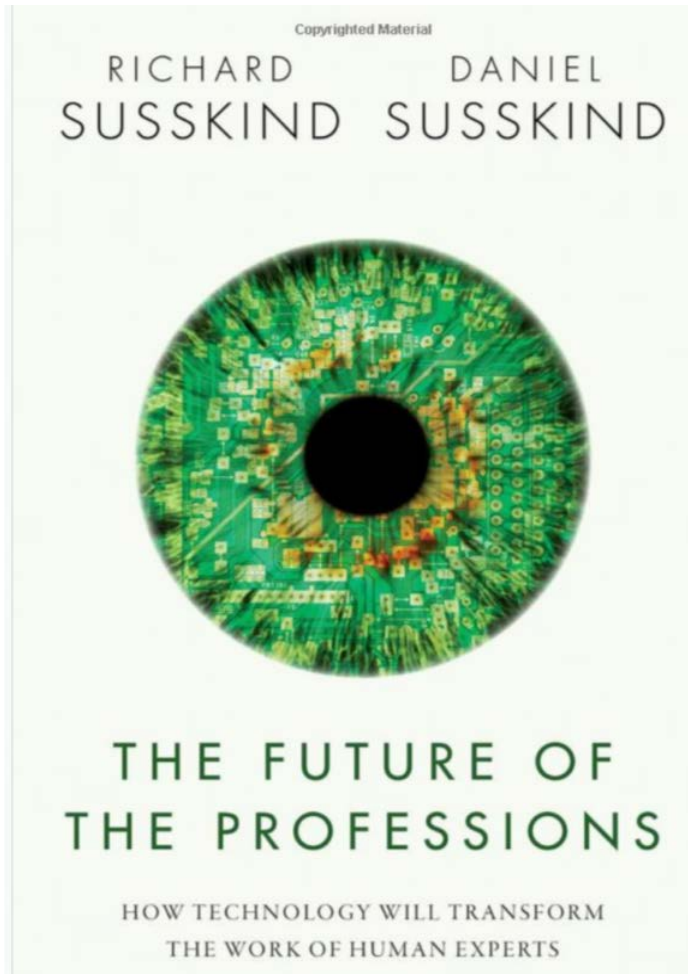
The world is always changing, but we have been through this before. Agricultural revolutions, and preceding industrial revolutions. And life insurance is different.

Have no fear, we will be fine.

Structure of Presentation

- Worldviews and 12 books – 10 mins
- Diagnosis of the Challenge and the Actuarial Conundrum – 15 mins
- Moravec Paradox and Navigating across Paradigms – 5 mins

The Future of Our Profession



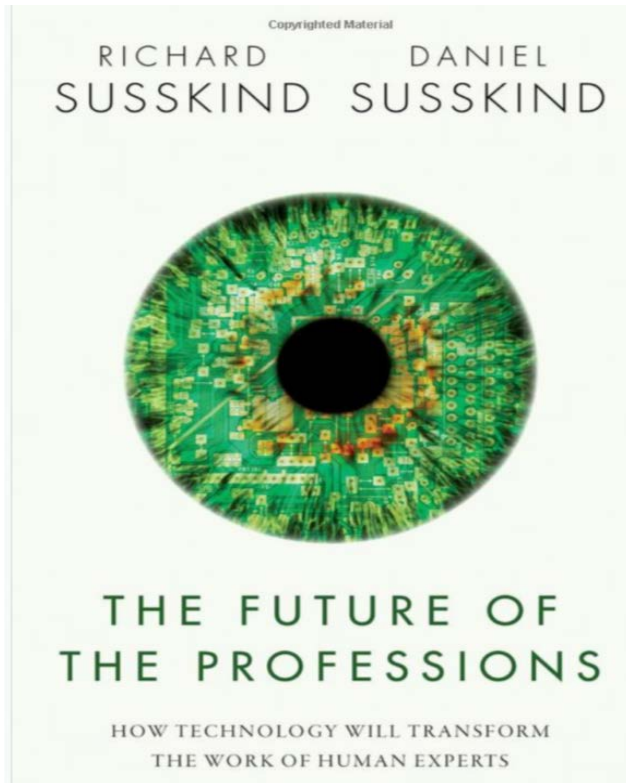
Increasing Capable Machines

Increasingly Pervasive Machines

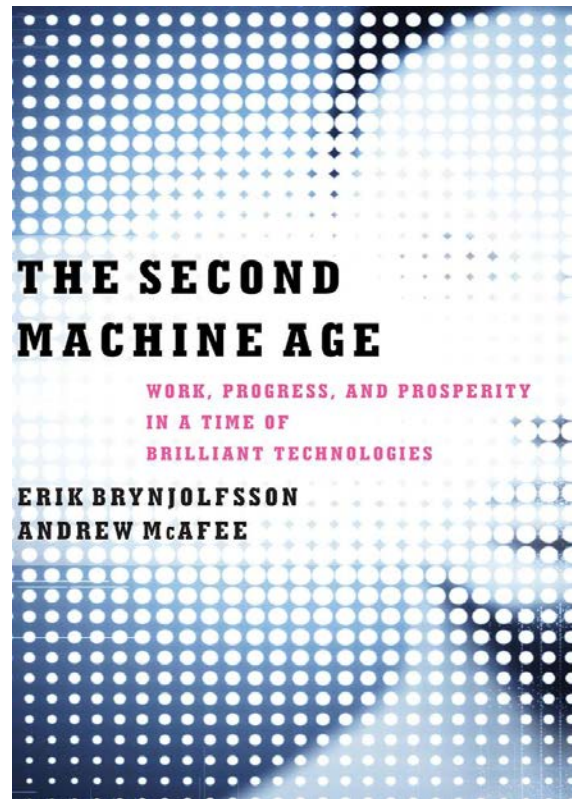
Increasingly Connected Humans

Internet based Society and Communications

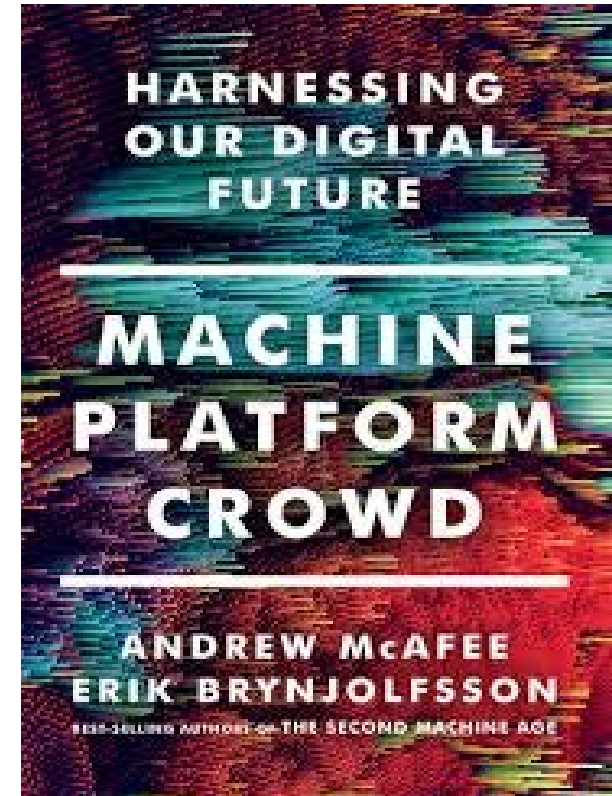
Different Perspectives



“Professions will eventually disappear”

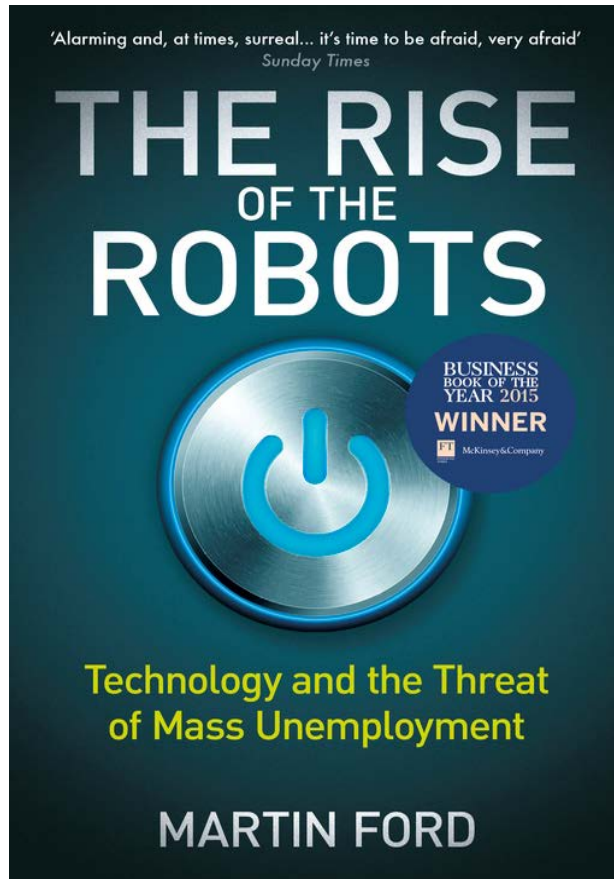


“Exponential Digital Combinatorial”

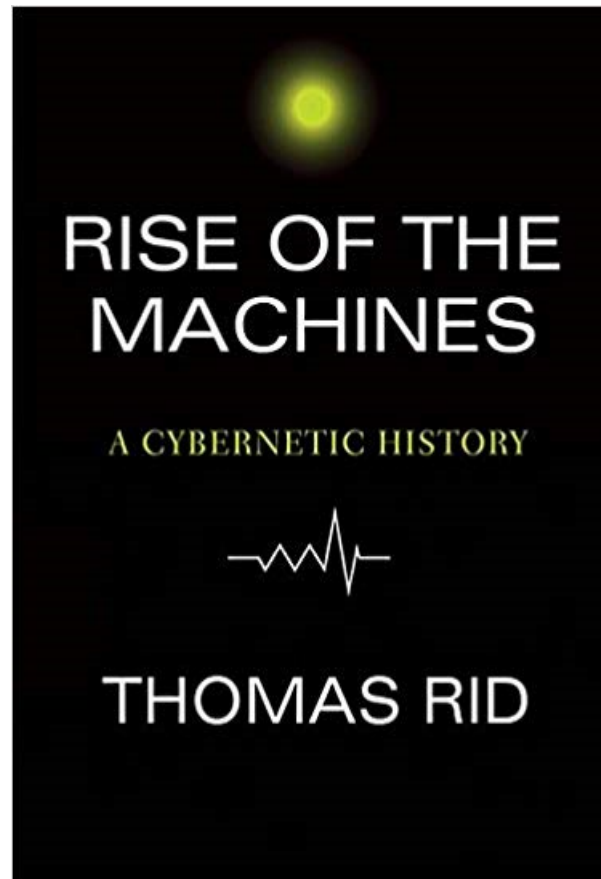


“It is not just about digital it is about machine platform and crowds”

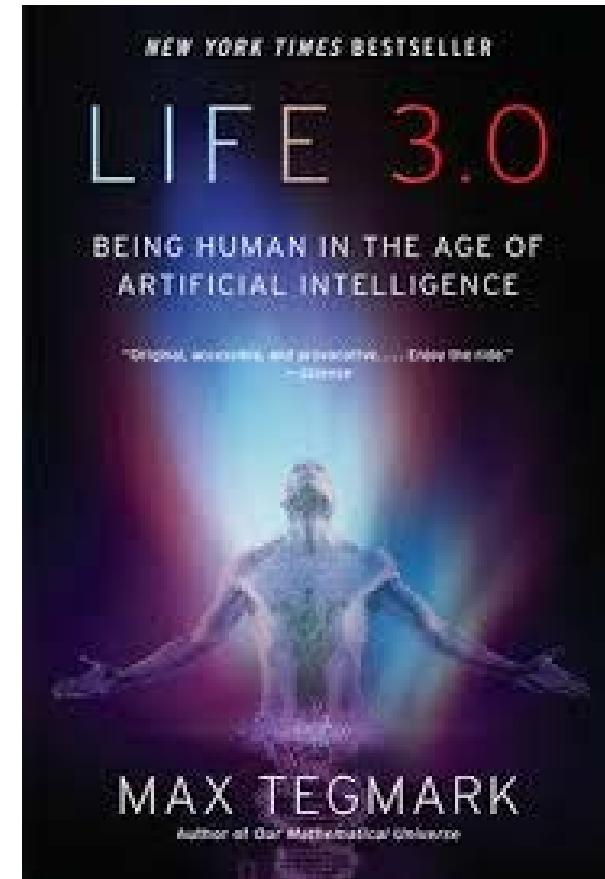
Different Perspectives



“Robots are really smart”

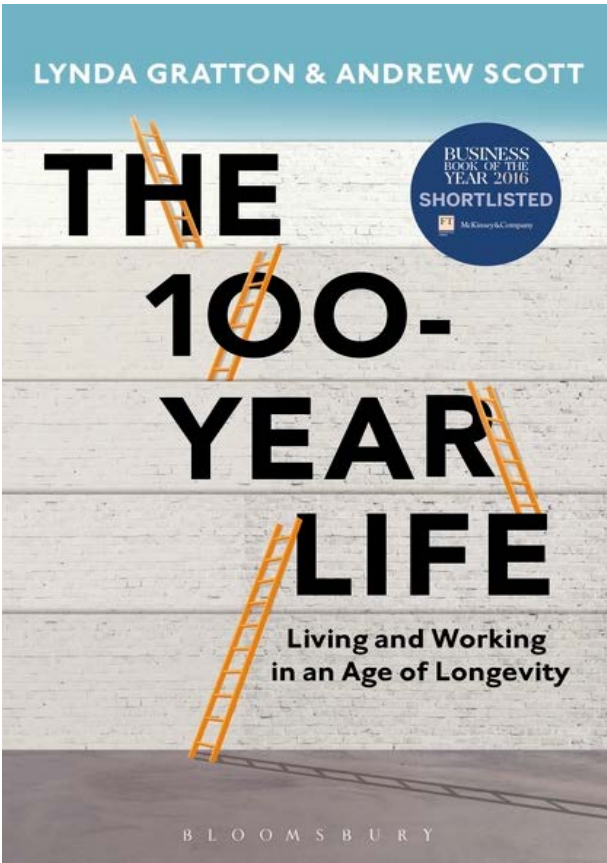


“Cybernetics and the future”

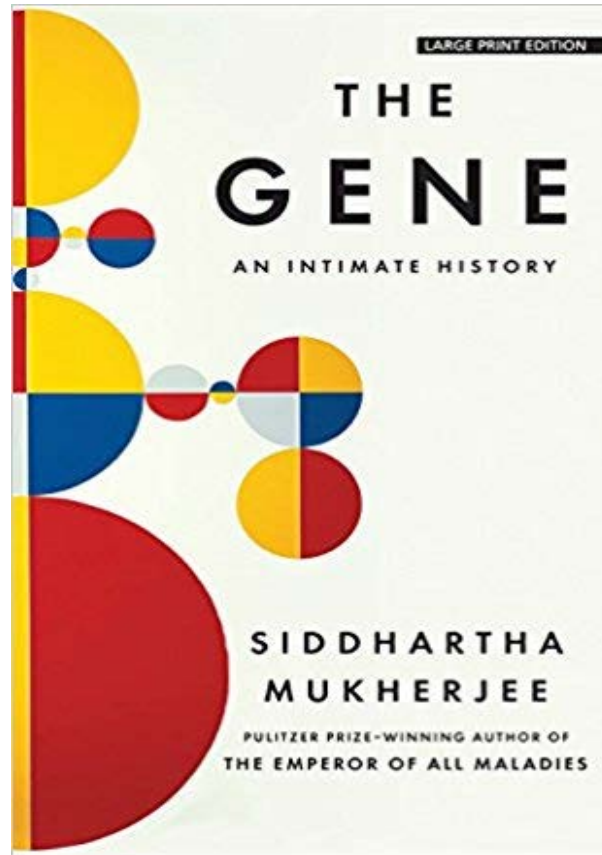


“Life 3.0 – a redefinition of intelligent beings”

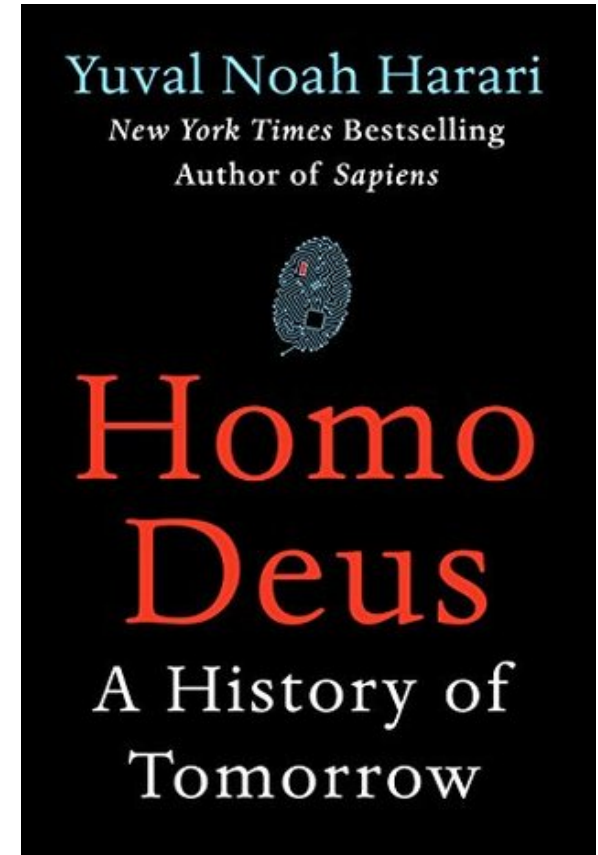
Different Perspectives



**“Multiple Identities;
Portfolio Careers; Financial
Planning”**

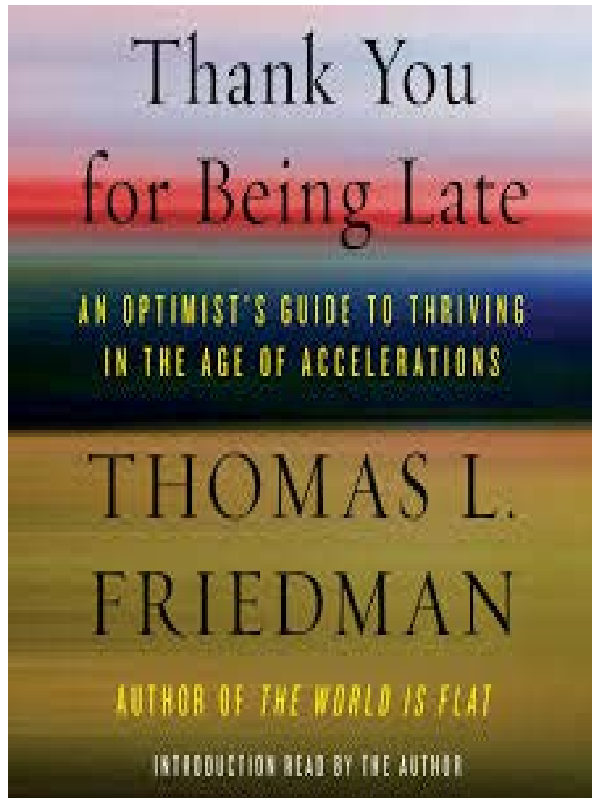


“Atom, Bytes, Gene”

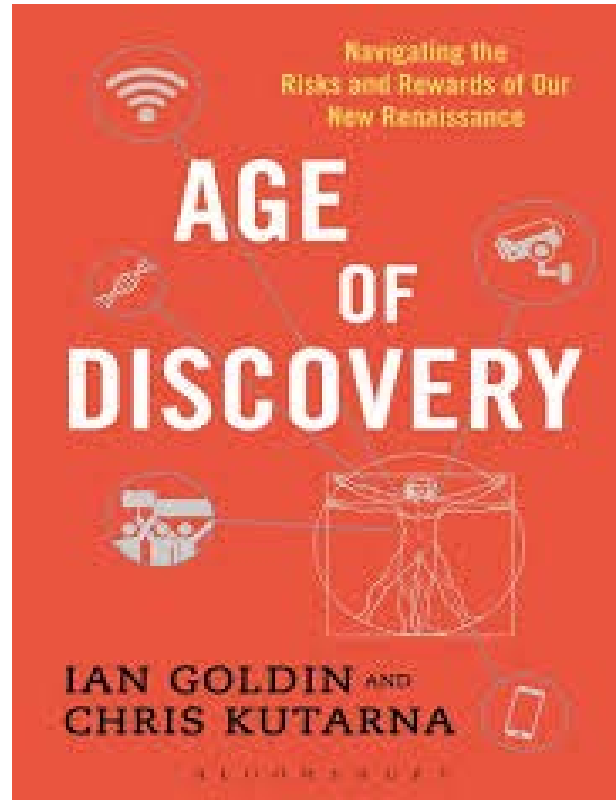


**“From Plagues, Violence,
Famines to
Homo Deus”**

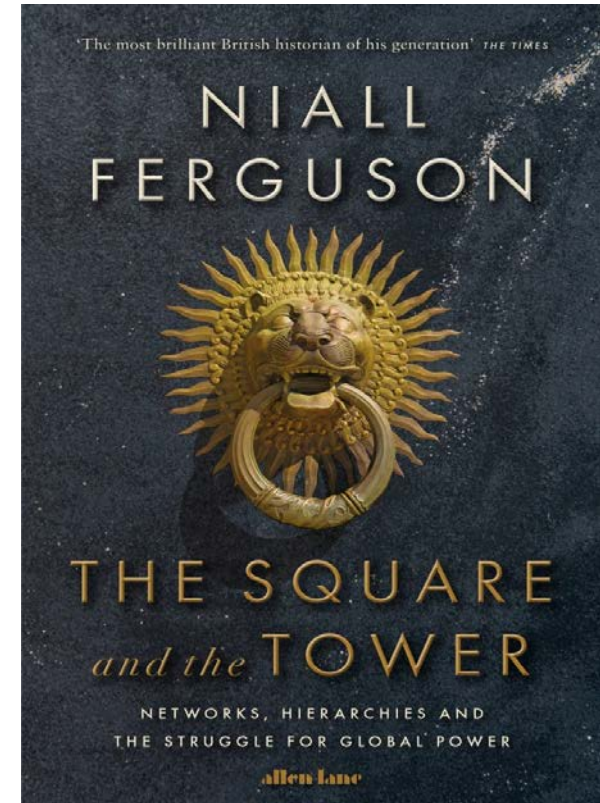
Different Perspectives



“Markets, Mother Nature and Moore’s Law”



“A new Renaissance – historical perspective”



“More about Networks than Hierarchies “

Navigating Across Paradigms



**Because it is
about Digital**

**Because it is
about
Machine
Platform
Crowds**

**These are
Major
Inflexion
Points**

**Because it is
about
Globalization,
Mother Nature,
Moore's Laws**

**Because it is
about the
100 Yr Life**

**Because it is
about
Networks**



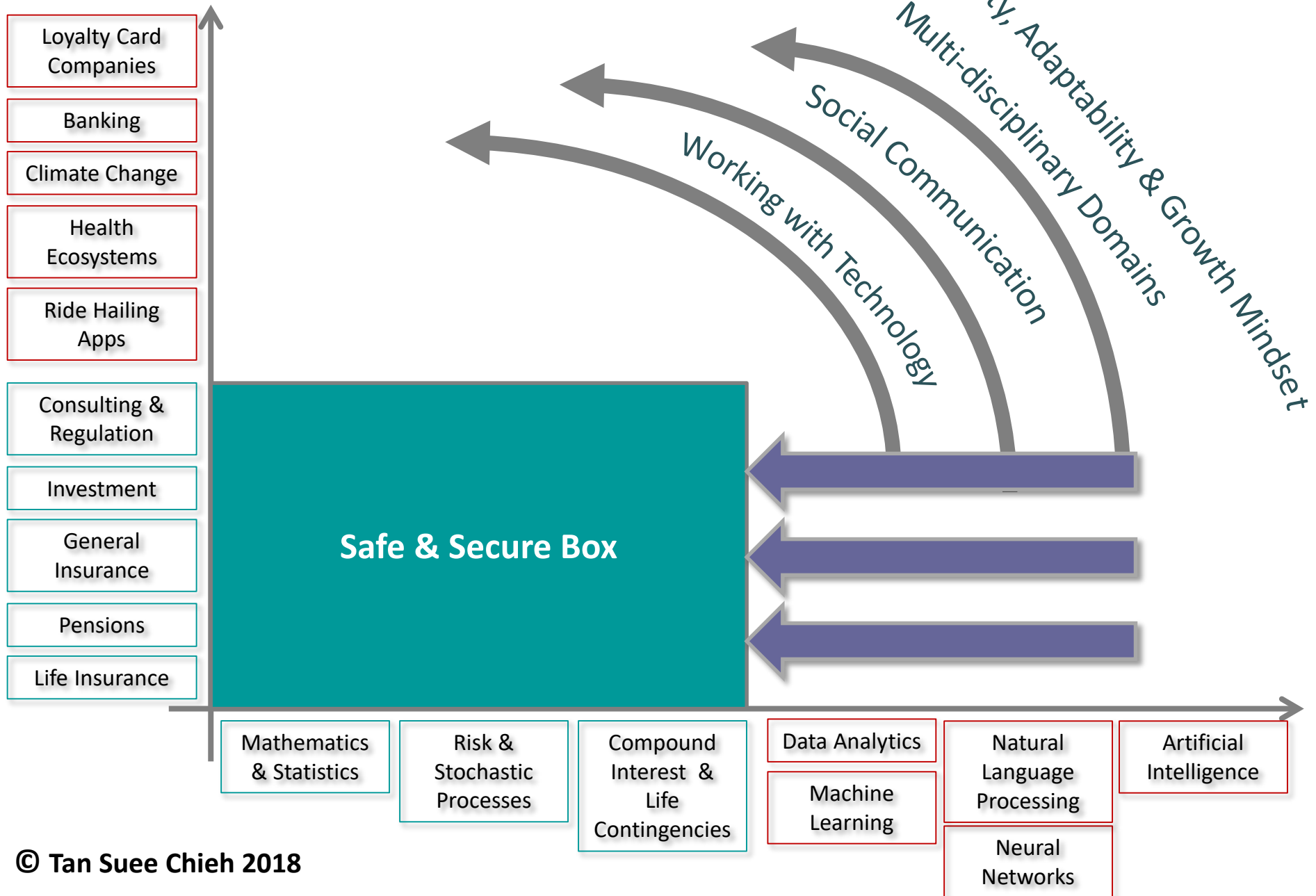


The Challenge for Actuaries

Safe and Secure Box

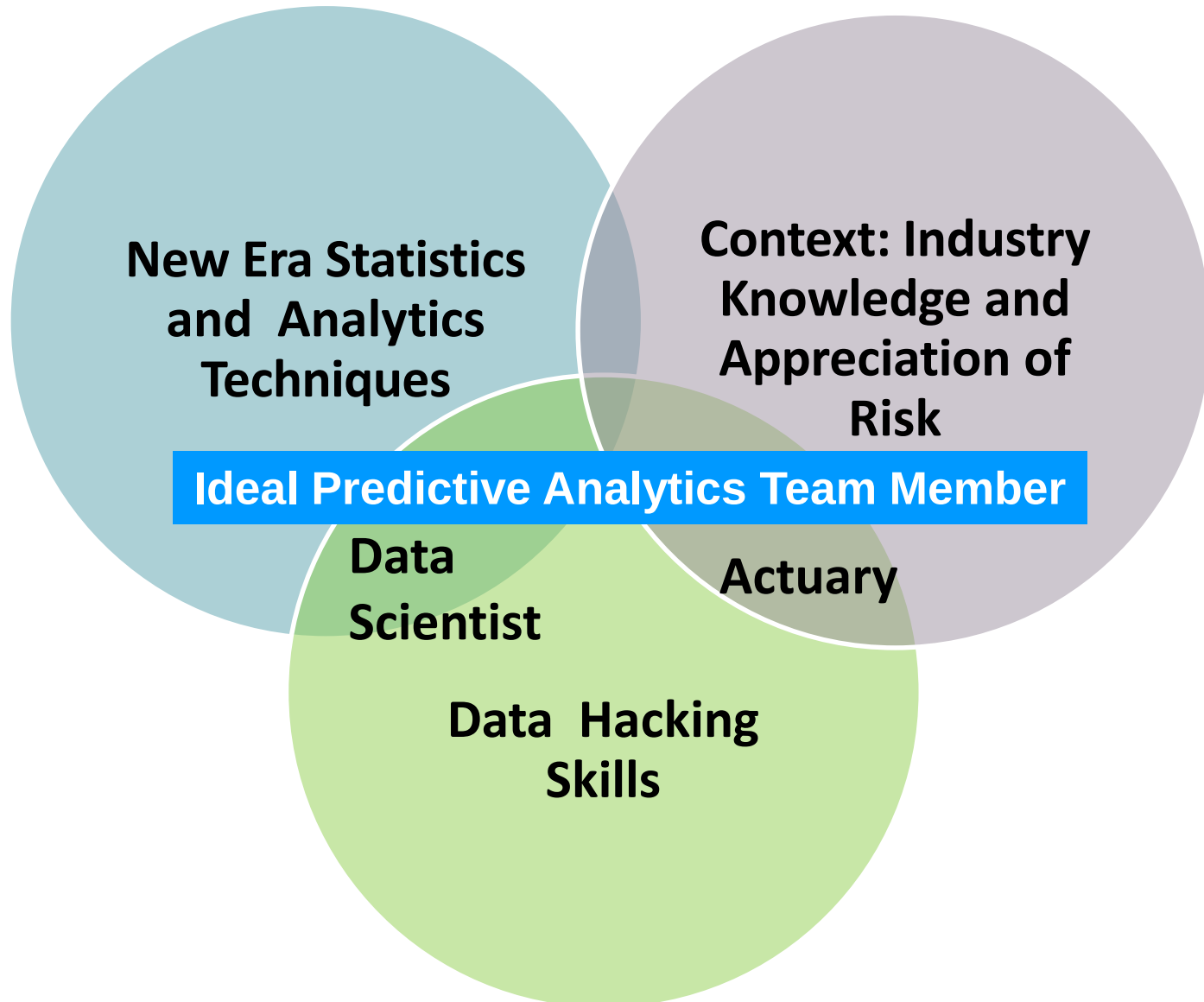


Extension of Safe and Secure Box



The International Congress of Actuaries Berlin 2018

Convergence of Three Key Skill Sets



AAA – Big Data and the Role of the Actuary

Generalized Linear Models

Linear Discriminant Analysis

Time Series Analysis

Survival Analysis

Association Algorithm

Sequencing Analysis

Clustering Analysis

Classification Algorithm

Neural Networks

Decision Trees

Random Forest

Gradient Boosted Machines

Support Vector Machines

Naïve Bayesian Analysis

Bayesian Estimates

Ensemble Models

Text Mining

Behavioral Models

Marketing

Engagement

Underwriting

Product Development

Claims & Reserving

Decision Making Analysis

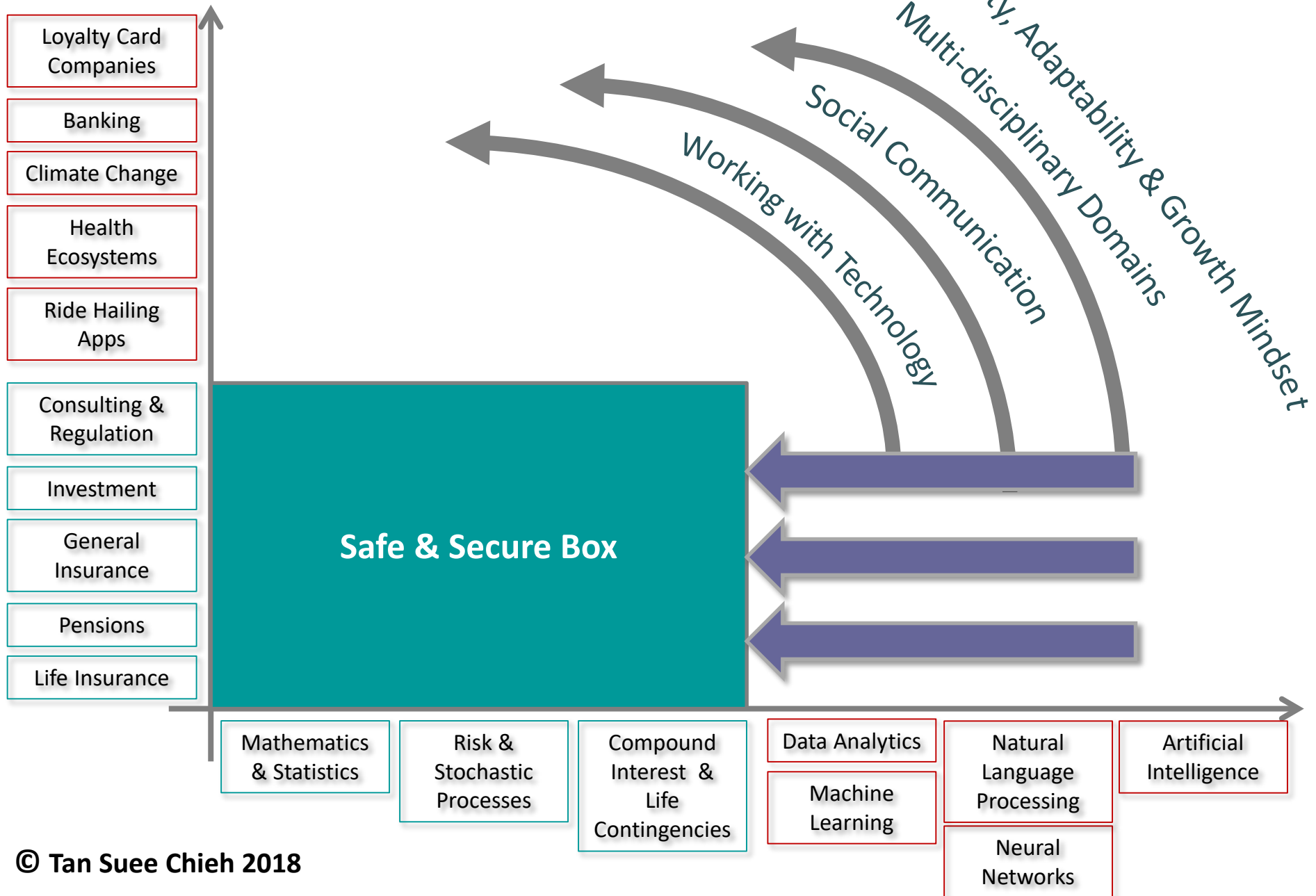
Behavior Analysis

Customer Satisfaction

Upselling

Targeted Marketing

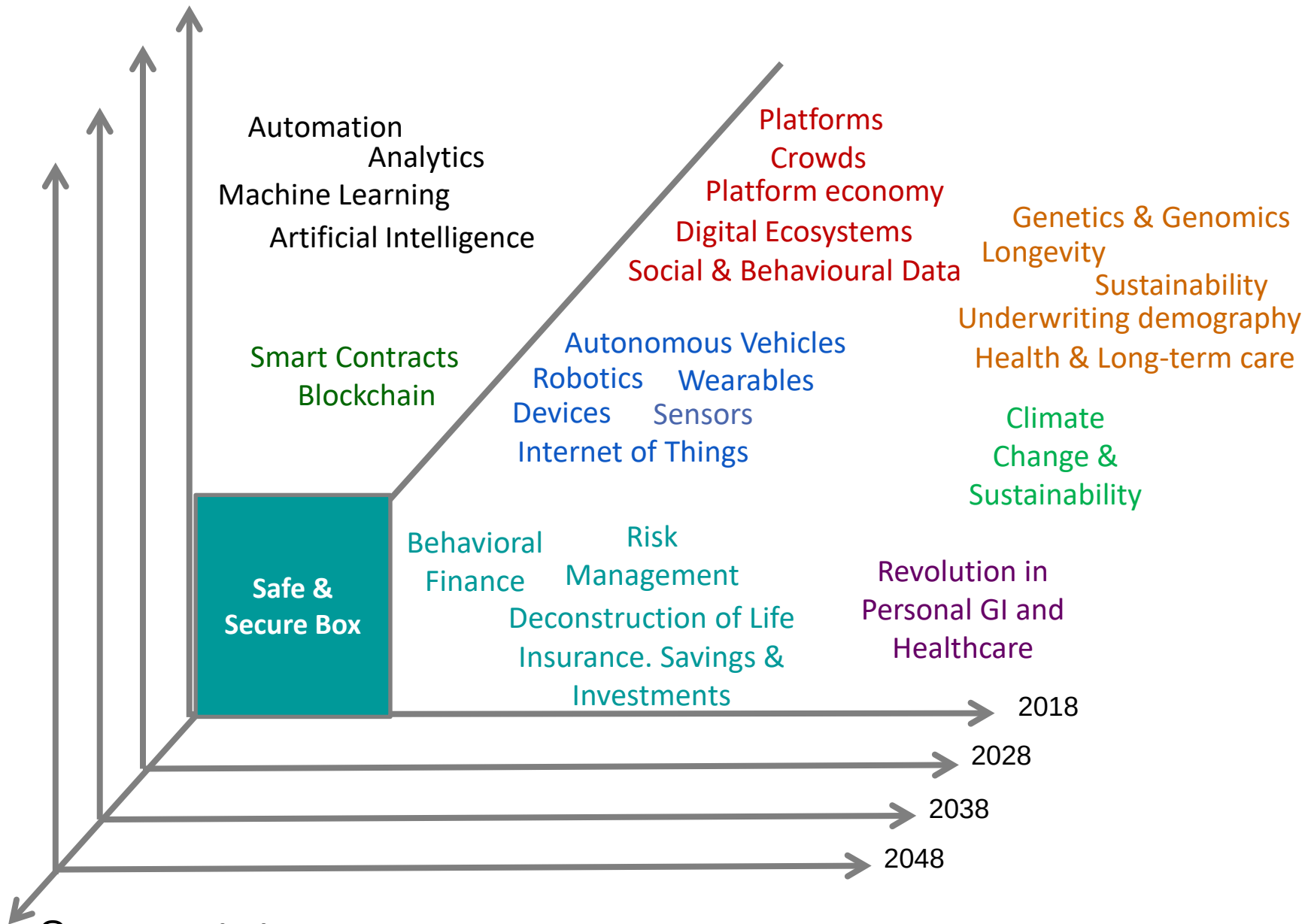
Extension of Safe and Secure Box



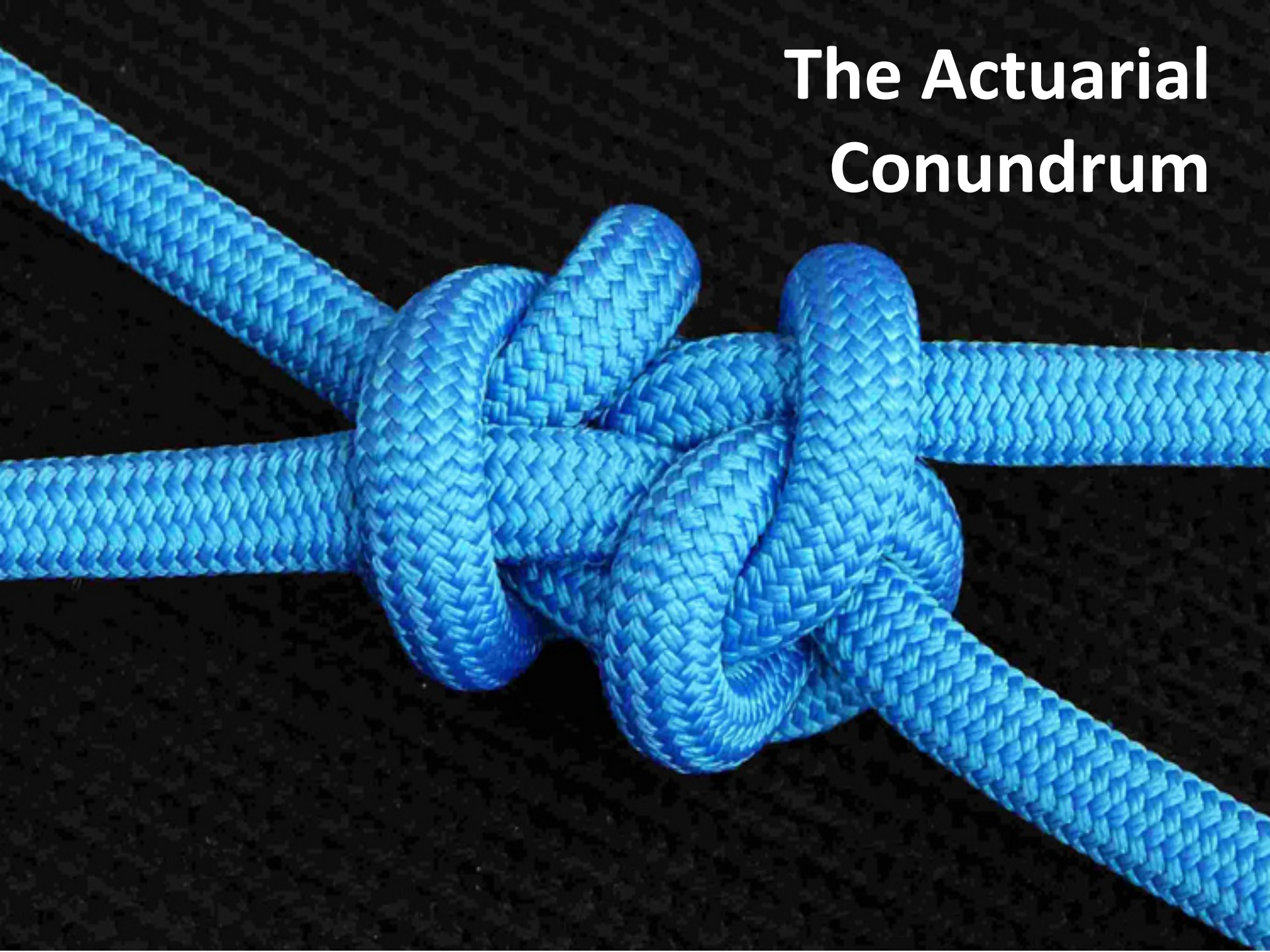
The Challenge for the Profession



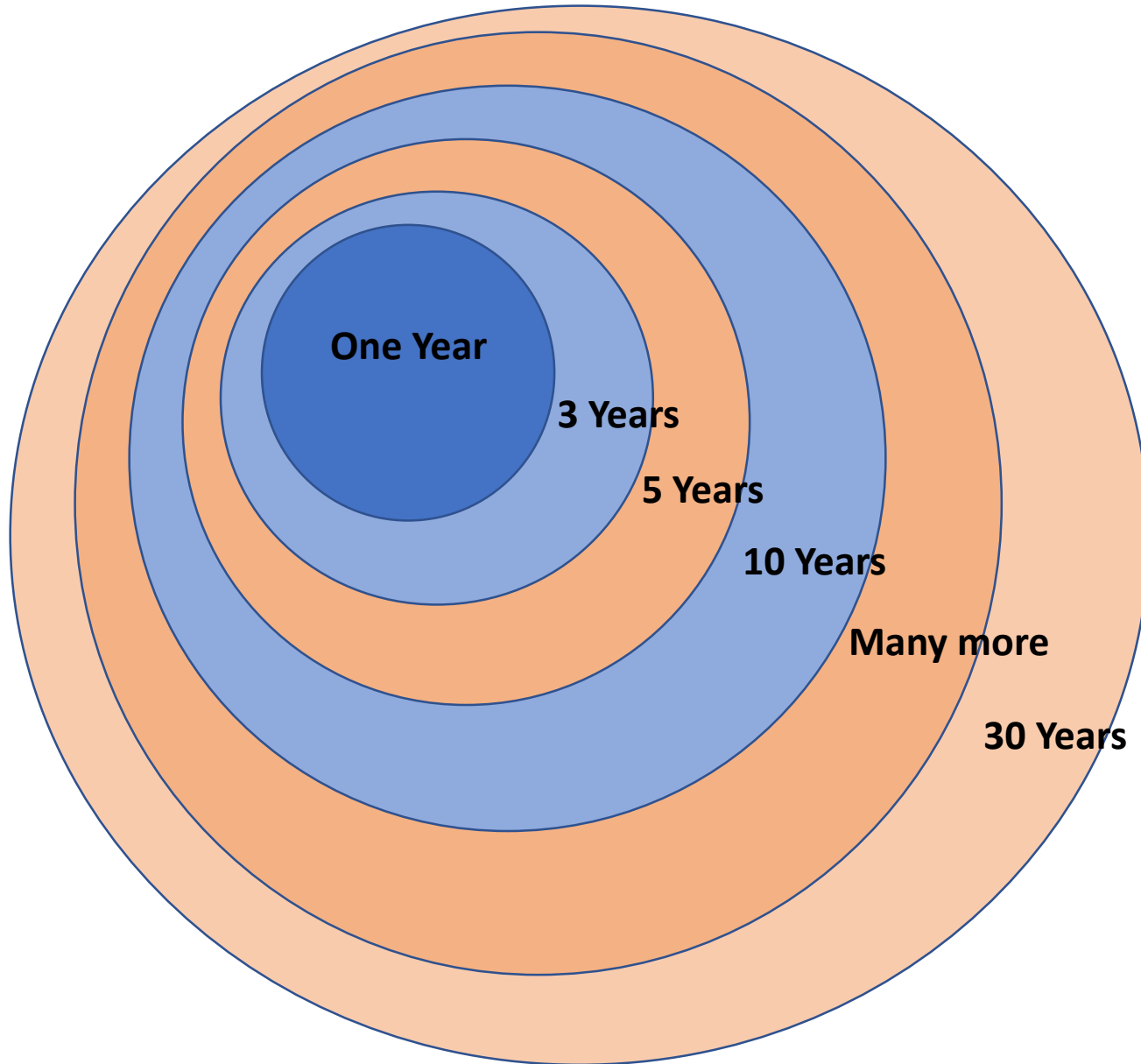
New Ecosystems of the Future



The Actuarial Conundrum



Dimensions of Time



Perception of Change – Lawrence Summers



A good rule of thumb for many things in life holds that things take longer to happen than you think they will, and then happen faster than you thought they could.

— *Lawrence Summers* —



3D PRINTING



DRONES



INTELLIGENT MACHINES

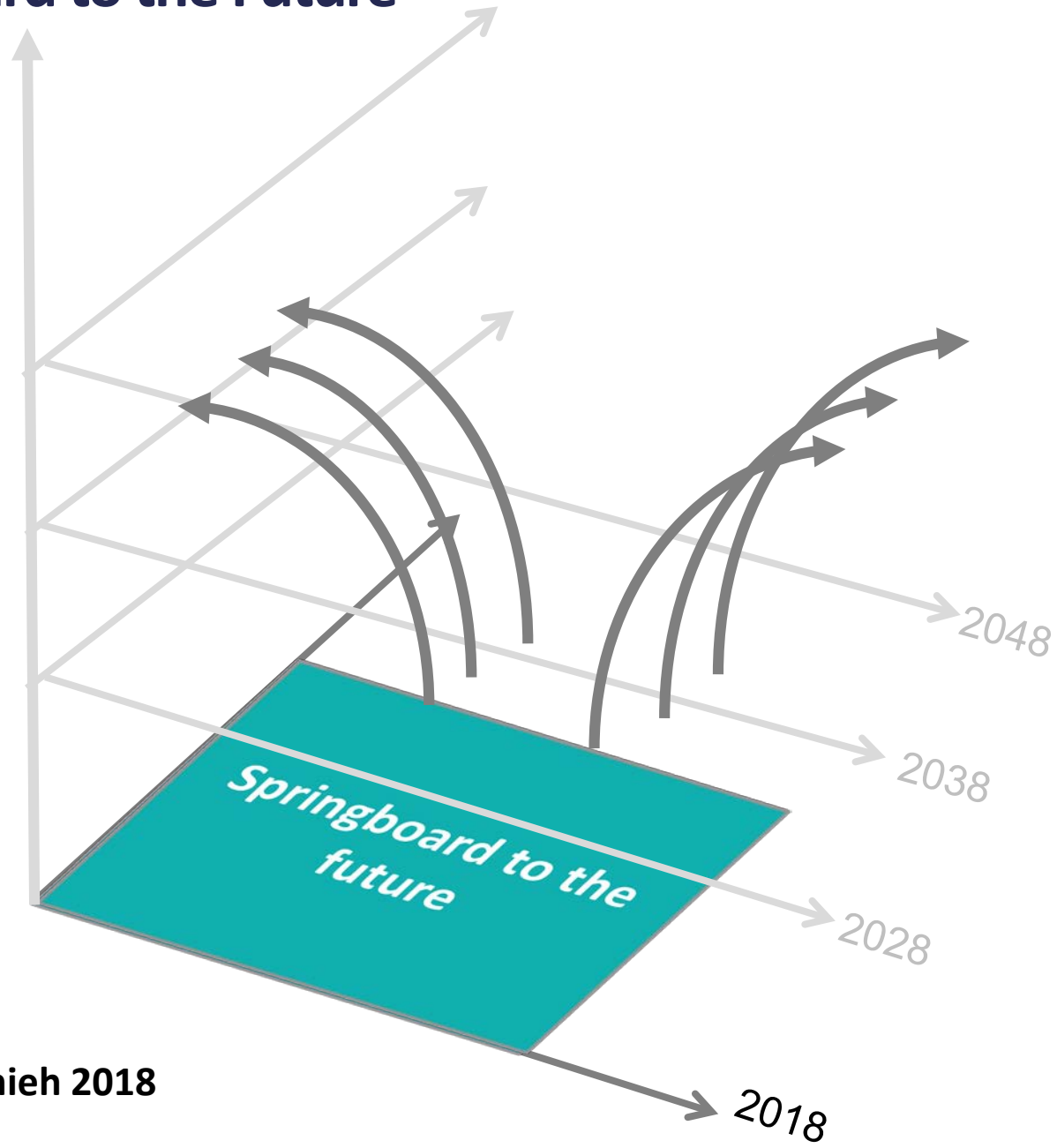


AUTONOMOUS VEHICLES



BLOCKCHAIN

Springboard to the Future



New Skill Sets

❖ Primary Strand

- Data Analytics, Machine Learning, Deep Learning, Neural Networks, NLP and AI

❖ Secondary Strand

- Working with technology – devices, internet of things, machines, wearables, drones
- Social communication – Understanding platforms economics, digital eco systems and networks
- Multi- disciplinary – new, emerging and adjacent domains

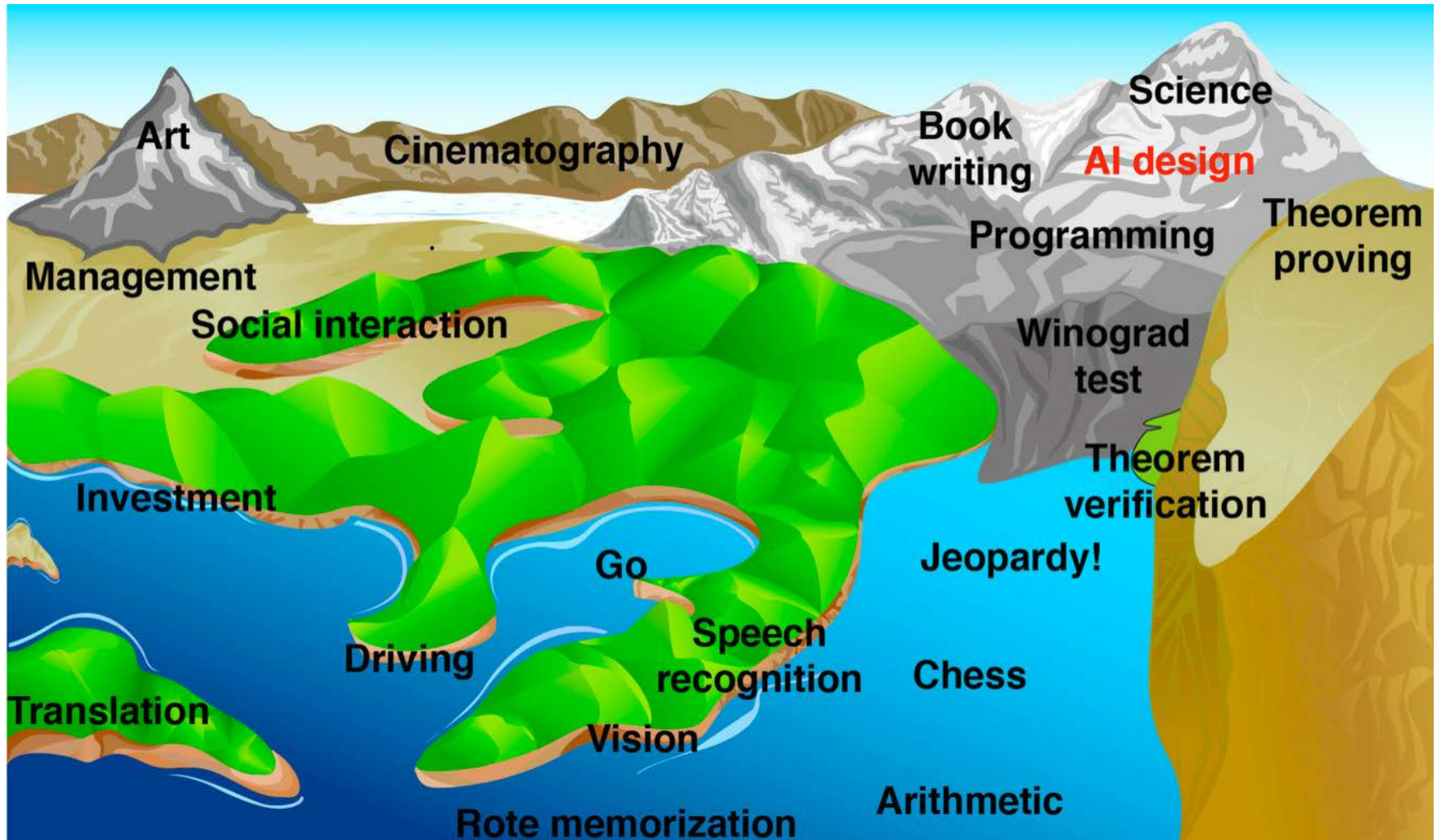
❖ Tertiary Strand

- Curiosity, Adaptability and the Growth Mindset

New Domains

- ❖ Automation, Analytics, Machine Learning, Artificial Intelligence
- ❖ Platforms, Crowds, Platform Economics, Digital Ecosystems, Social and Behavioral Statistics, Sensors
- ❖ Genetics and Genomics, Longevity, Sustainability, Underwriting Demography, Health and Long-Term Care
- ❖ Autonomous Vehicles, Robotics, Devices, Wearables, Sensors, Internet of Things
- ❖ Climate Change and Sustainability
- ❖ Smart Contracts, Block Chain
- ❖ Behavioral Finance, Risk Management, Deconstruction of Life Insurance; Savings and Investment
- ❖ Revolution in Personal GI and Health Care

Moravec Paradox

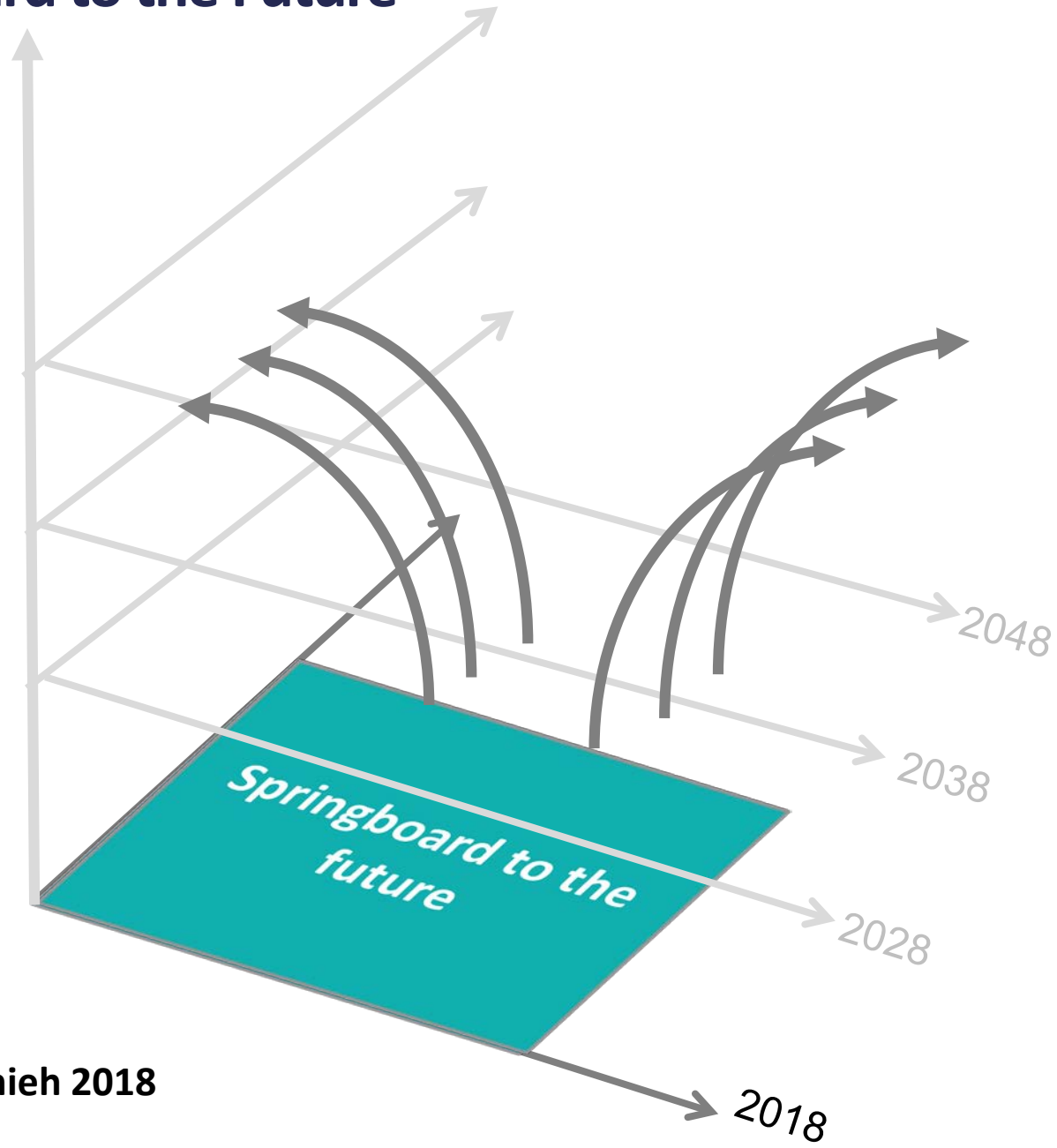


World Economic Forum

– Fourth Industrial Revolution



Springboard to the Future



The background of the slide is a complex, abstract composition. It features a dark, almost black, space filled with numerous numbers in various colors (red, blue, green, yellow, orange) and sizes. Some numbers are sharp and clear, while others are blurred or partially obscured by wispy, smoke-like or nebula-like patterns in shades of blue, green, and yellow. The overall effect is one of dynamic movement and complexity, suggesting a journey through a vast, data-rich space.

Navigating Across Paradigms

16 August 2018
Tan Suee Chieh

END
