WESTMINSTER
International University in Tashkent

Anticipatory Innovation Governance

Tuesday, 23 October, 2025

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Welcome

Welcome Slides here

Vice-Rector on Research
Westminster International University in Tashkent (WIUT)

Slides here

Representative from HQ
Central Asia Regional Economic Cooperation Program (CAREC)

Slides here

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Why We Are Here

Supporting Policymakers with Anticipatory Innovation Governance

VUCA:
Volatile, Uncertain, Complex, Ambiguous

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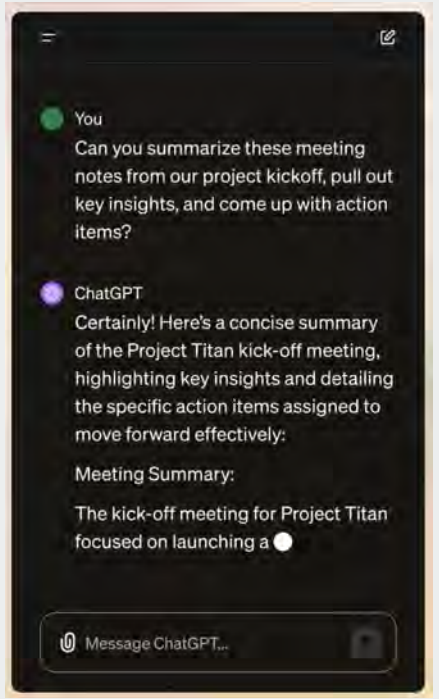
VUCA:
Volatile, Uncertain, Complex, Ambiguous

WIUT



BINA:
Brittle, Anxious, Non-linear, Incomprehensible

WIUT

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Brittle, Anxious, Non-linear, Incomprehensible

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Commonly held policy goals can quickly meet unexpected headwind

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Graduates in STEM 'need to rise by half'

The UK needs to boost its output of science, technology, engineering and maths graduates by almost 50 per cent to satisfy market demand, a thinktank has calculated.

Published on March 18, 2013

Last updated May 26, 2015

Paul Jump

Twitter: @PaulJump

The Social Market Foundation's report, *In the Balance: The STEM human capital crunch*, published today, calculates that an ageing workforce will see around 100,000 vacancies arise annually in jobs requiring degrees in STEM subjects.

It notes that the coalition government's crackdown on immigration and uncertainty over future membership of the European Union is likely to require these vacancies to be filled by domestically produced graduates.

2015

CIO

AI is taking over junior IT positions

News

Sep 2, 2025 • 3 mins

Careers

Entry-level technology positions are among those most affected by the rise of artificial intelligence.

2025

Uncertainty requires expanding our planning toolkit

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Jesper Brodin,
CEO of Ingka Group I IKEA

The risks, the uncertainty, everything that used to be in a 'risk matrix file' is more or less happening

We laugh about the time when we were doing one-year budgets, and how we would be right or wrong by 0.3 per cent

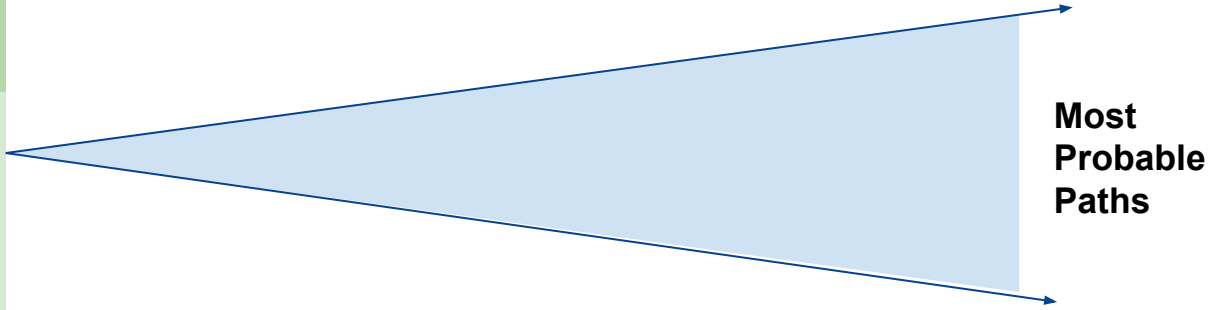
[Foresight] is teaching us agility in how we operate

Planning in uncertain policy spaces needs to go beyond planning for the probable

What we know today

Expertise & Evidence Based

Models, Data, Analysis

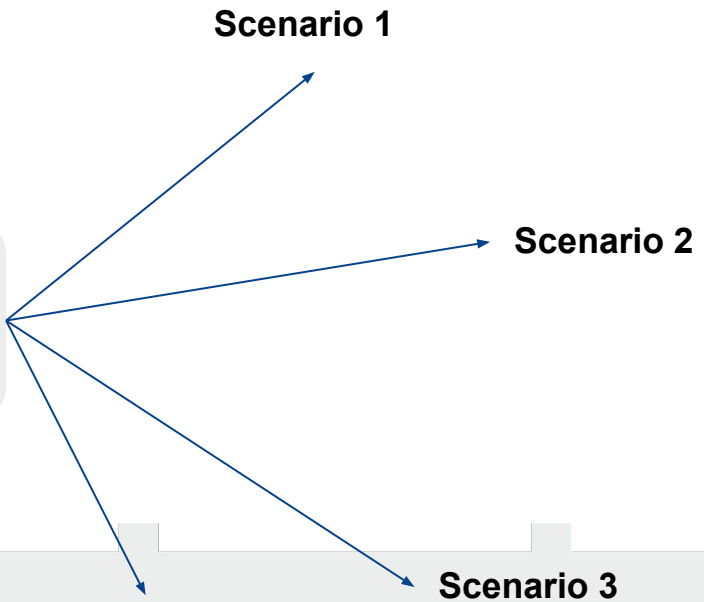


What we know today

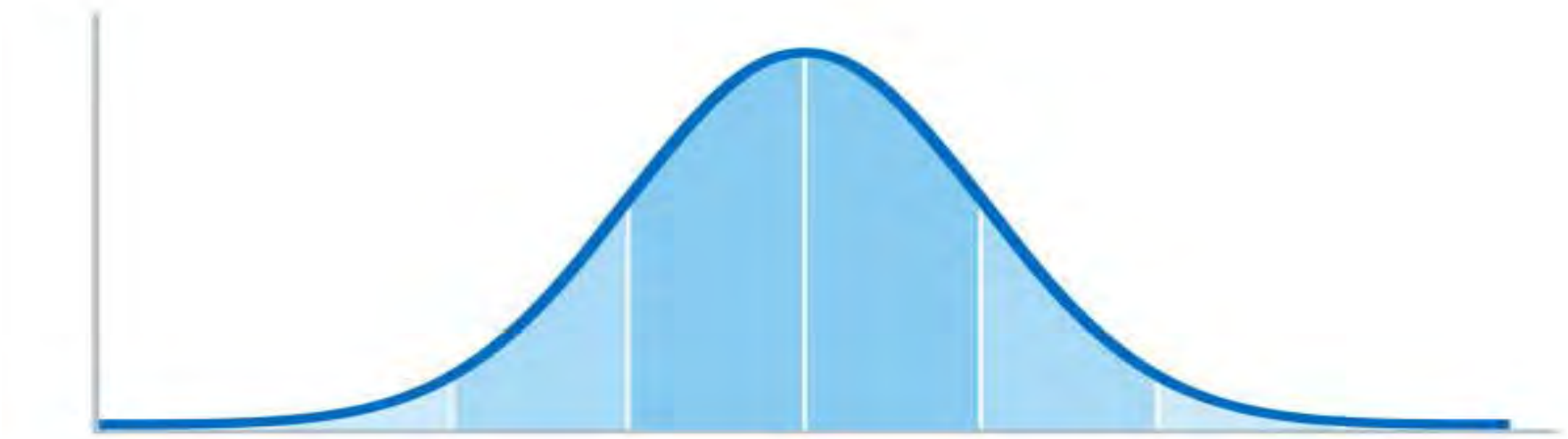
Expertise & Evidence Based

Models, Data, Analysis

Potential shifts caused by high impact, uncertainties



Looking beyond the probable: Potentially high-impact implications



Potential, High Impact Events

Potential, High Impact Events

Anticipatory Innovation Governance as an approach for policy and governance in highly uncertain policy spaces

AIG uses uncertainty as a space for innovation (experimenting) with policy implementation within set visions and objectives

Anticipatory Innovation Governance is part of a larger movement of developing futures focused policymaking

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Singapore:

Centre for Strategic Futures (Prime Ministers' Office)

Malaysia:
MyForesight (Ministry of Science)

Finland:

Committee of the Future (Parliament)

UAE:

Future Foresight Strategy (Ministry of Cabinet Affairs)

Wales:

Future Generations Commissioner for Wales (Gov't Commissioner)

Kenya:

Futures Senate Committee (being established)

Ukraine:

Strategic Foresight for Ukraine (Parliament)

Chile:

Ministry of Foreign Affairs

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Chile:

Ministry of Foreign Affairs

Key Differences of Anticipatory Innovation Governance

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Anticipatory:

- Explores multiple possible futures simultaneously
- Real-time monitoring and adaptation

Governance:

- Long-term vision with short-term experimentation
- Learning-oriented with continuous feedback loops

Innovation:

- Experimentation drives policy development
- Active testing of alternatives in real-world settings
- Portfolio approach - expects some failures

Key Differences of Anticipatory Innovation Governance

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Faster learning of changes, rather than reacting to them

Anticipate these changes

Work together to see the world differently

Support a more resilient, agile, innovative policy process

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Anticipatory Innovation Governance:
What does this look like

Innovation through Experimentation:

Financial Regulatory Sandboxes in Singapore

Singapore's Monetary Authority (MAS) established FinTech Innovation Lab in 2015, which partnered with the private sector, allowing:

- MAS to actively learn from cutting-edge emerging developments in the field, to which it previously did not have real-time access
- FinTech solutions to be tested within a limited customer base, following a limited timeframe and given lighter legal and regulatory requirements
- Promote Singapore’s financial sector (a key development policy goal)

Anticipatory in Action:

Rethinking the Digital Divide

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Source: Photo by Aleks Habarovs on Unsplash, https://unsplash.com/photos/three-children-walk-along-a-dirt-path-0M5pRB_a5_I

As part of a 5-year plan for a Southeast Asian country and UNICEF in 2013, digital divide research was conducted.

Beyond a digital divide, **a single** teacher in rural Malaysia told me:

"Children were skipping school to earn money to buy smartphones and internet access"

Led to a joint Government-UNICEF Digital Youth Lab

Example of Experimentation:

China's Central control and local discretion for health insurance schemes in the 1990s

In early 2000s, 300 local governments given implementation choices for health interventions

- Local experimentation with central coordination
- Successfully identified and scaled up effective health interventions with "contextual fit"

Central government controls the overall policy agenda and direction of reform, sets implementation targets for local governments (frontline implementers of the national scheme), and has oversight

Sub-national governments act as problem solvers and change managers, rather than straightforward implementers of policy. Central government encourages and tolerates a wide range of policy practices.

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Anticipatory Innovation Governance and Uzbekistan 2030

Learning and Engaging with AIG within the Uzbekistan 2030

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Anchored in Uzbekistan 2030, we will apply AIG concepts and tools to

- Explore shifts occurring in and out of Uzbekistan
- Implications, opportunities, challenges
- Potenital Policy responses

Areas of Focus:

- AI and Digitalization
- Energy Development
- Economic Development
- Social Development (Protection, Education, Health`)

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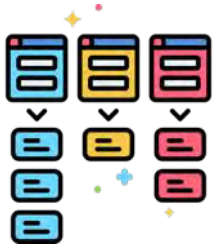
Agenda and Journey

Our 4 Day Agenda

Tuesday
Situating
What is Anticipatory Innovation Governance?

How do we think about change?



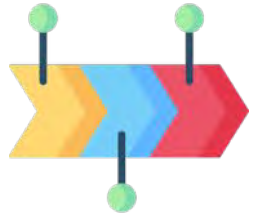
Wednesday
Potential Scenarios

What are the forces shaping the future of?

What are the different ways these forces could shape the future?

Thursday
Implications and Policy Response

What are the different ways these forces could shape the future?



Friday - Implications and Policy Response

What are the potential implications and how might we respond?

Invited Speakers

Aziza Umarova
Head of Delivery Unit at the Agency for Strategic Development and Reforms under President

Isomiddin Akramov
Programme Analyst on Cliamte Change for UNDP Uzbekistan

About Daniel Riveong

Strategy and Foresight Lead at Plural Futures

About Daniel

Over 10 years in Strategic Foresight with topical focus on Deep tech, Agri-Food Systems, Governance, Non-Western futures.

Beyond Plural Futures, he is also associated with:

- Foresight Learning Lead for the NGFP Fellowship Programme at the School International Futures (SOIF)
- Board Member, Association of Professional Futurists

Daniel previous sent over +15 years in digital technologies and advertising San Francisco and Kuala Lumpur

About Plural Futures

Since 2013, Plural Futures has helped organizations translate uncertainty and emerging trends into opportunities and new strategies.

Plural Futures has worked across the public and private sector in Europe, Asia-Pacific and Beyond.

Recent Client and Speaking Engagement

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UNDP

UK Government

Food and Agriculture Organization of the United Nations

OECD

European Commission
Joint Research Centre

مؤسسة دبي للمستقبل
DUBAI FUTURE FOUNDATION

منتدى دبي للمستقبل
DUBAI FUTURE FORUM

Ministry of National Development Planning/Bappenas
Republic of Indonesia

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Warm Up Activity

It's 2030. What might the world say about us?

Activity Instructions

WIUT

Individual reflection (10 min)

Think about two newspaper headlines from 2030:

- One positive/aspirational (a success story)
- One negative/critical (a risk or failure)

Activity Instructions

WIUT

Paired discussion (10 min)

Share your headlines and reflect:

- What should **change** to achieve the desired futures?
- What should **change** to avoid the undesired futures?

Closing

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We’ll use the next 4 days to explore how anticipatory innovation governance helps us move toward the headlines we want — and navigate away from less desirable futures.

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Setting the Scene: Uzbekistan 2030

Anchoring Our Learning Purpose with Uzbekistan 2030

"Build a free and prosperous, strong New Uzbekistan, create every citizen every opportunity to develop their potential, raise a healthy, educated and spiritually developed generation, form a strong economy that has become an important link in global production, as well as guaranteed justice , the rule of law, security and stability,"

1. Creating suitable conditions for each person to realize their potential
2. Ensuring the well-being of the population through sustainable economic growth
3. Conservation of water resources and environmental protection
4. Ensuring the rule of law, establishing a public administration "at the service of the people
5. Continuing the work of turning the country into a safe an peace loving state

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Activity

Stand & Choose – Futures Priority Poll

Activity Instructions

WIUT

We just heard about four areas shaping Uzbekistan's future. Let's see how we, in this room, sense their importance.

- Each corner of the room represents a domain: Water, Demographics, Energy, Transportation.

- Stand in the corner that represents the domain you feel is **the most urgent to address for Uzbekistan 2030**

Sharing

WIUT

1–2 volunteers from each corner to share:

Why do you feel this domain is the most urgent to address for Uzbekistan 2030?

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Aziza Yumarova, Head of Delivery Unit at the Agency for Strategic Reforms

Slides from Aziza Yumarova

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Activity

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Sharing

WIUT

1–2 volunteers from each corner to share:

Why do you feel this domain is the most urgent to address for Uzbekistan 2030?

Energy

Social development

Economic development

Digitalization & AI

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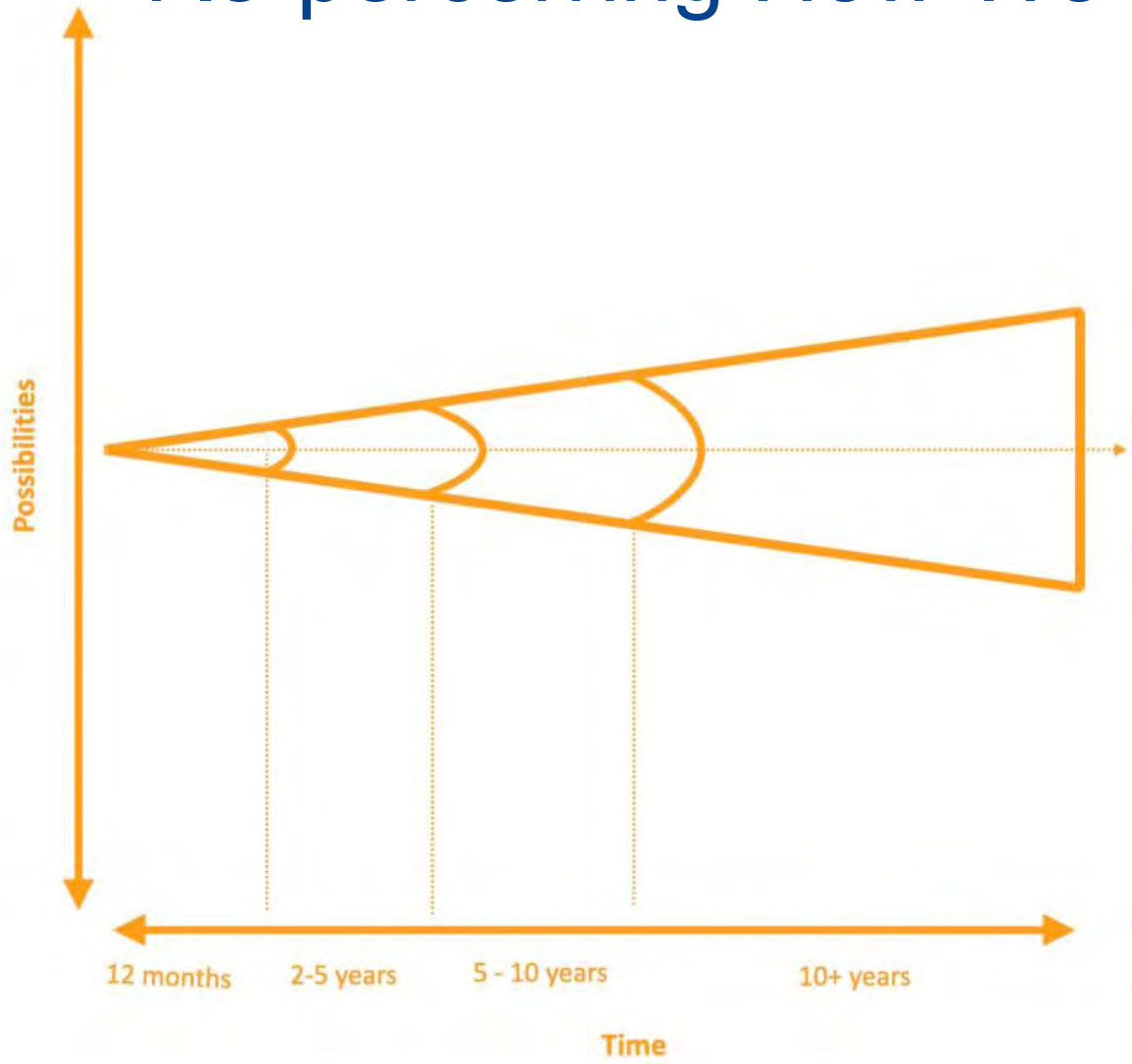
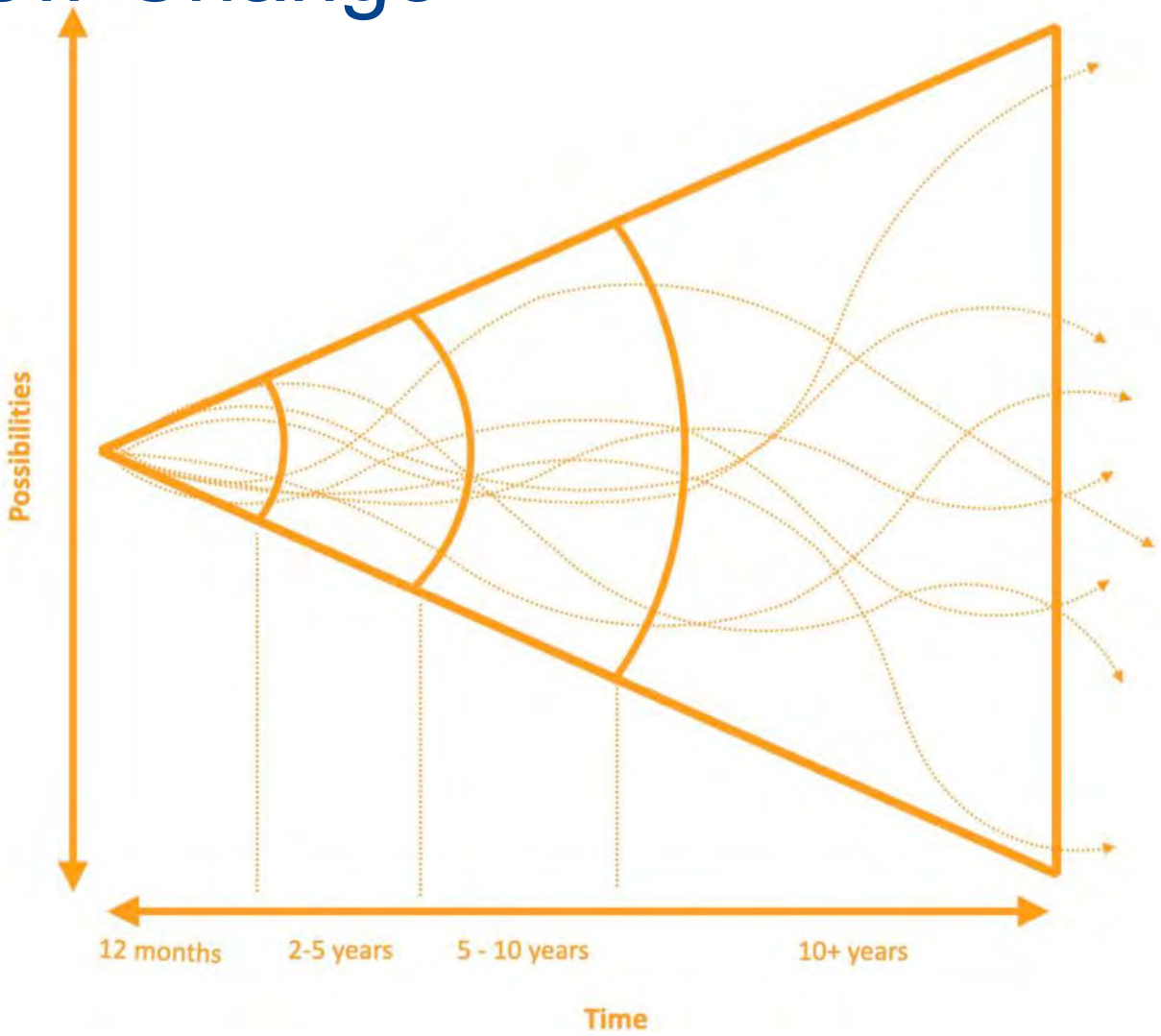
Introduction to Futures Mindset & Leadership concepts

The future is not an empty space but like the past is an active aspect of the present
- Ivana Milojevic

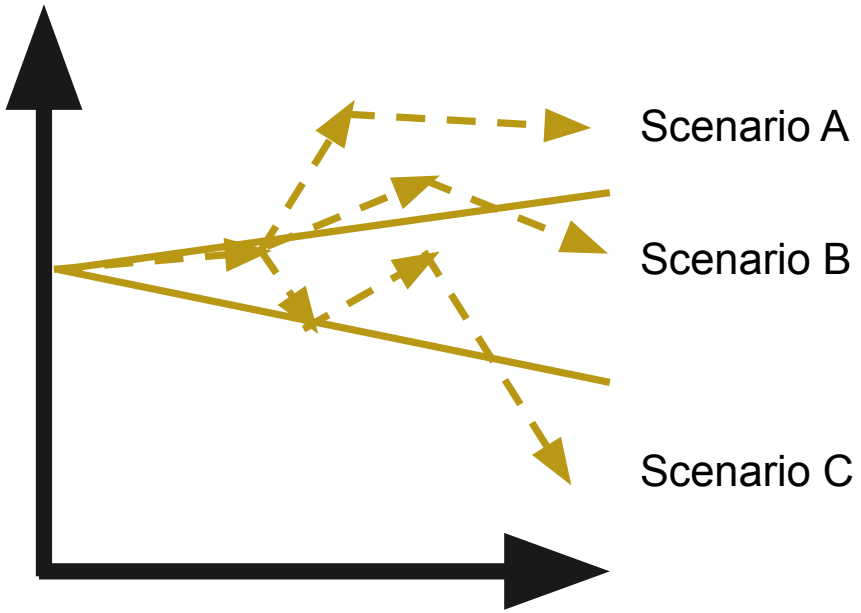
Re-perceiving How We View Change





We’re not predicting one future,
but preparing for many.

How can we expand our understand of the options and possibility we have today?



Expand our mind on what's possible

Look beyond high-impact drivers we understand

Look at high impact drivers, we do not fully understand

You can't control the future,
but you can influence it,
by what you choose to do -
and what you choose not to do.
- Wendy Schultz

Leadership in Times of Change

Traditional Leadership

- Linear planning
- Efficiency
- Risk avoidance
- Reactive response
- Short-term focus

Futures-focused Leadership

- Systems thinking
- Curiosity, Experimentation
- Opportunity creation, Resilience
- Anticipatory action
- Long-term vision with near-term action

Futures leadership is not about having all the answers, but about creating the capacity to respond to change

Why it matters for Governance?

Water, Demographics, Energy, Transportation: Each faces **deep uncertainty** → long-term investment choices.

How can we better head towards the visions and goals of Uzbekistan 2030 in areas of high uncertainty?

Futures Mindset & Process

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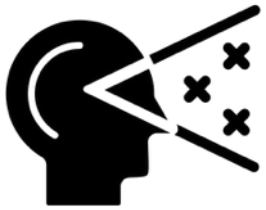
Sensemaking

Scanning Constantly for Weak Signals -

Convening Diverse Voices Early



Implications

Creating Safe Spaces for "What If?"

Translating Uncertainty into Options

Impact

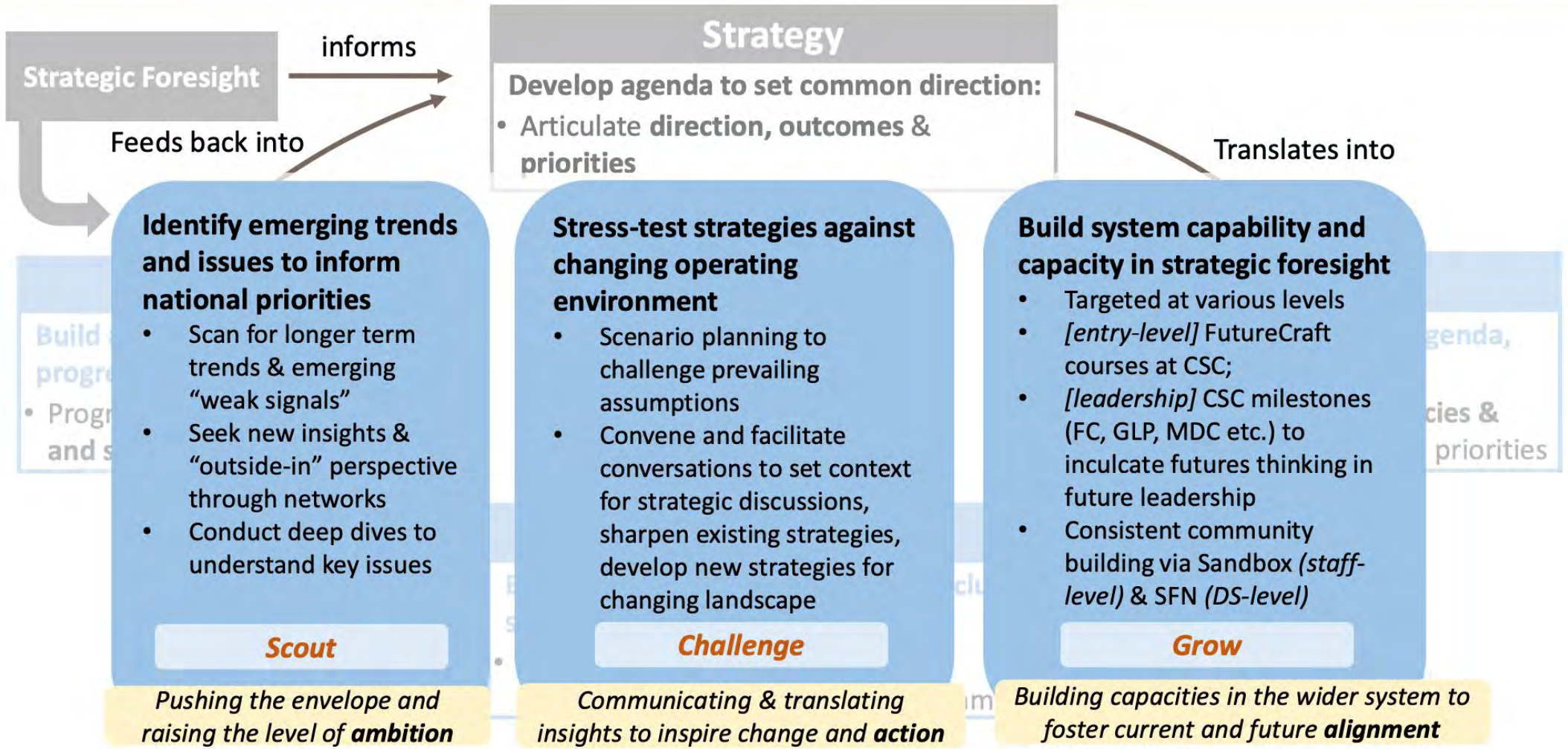
Making Futures Tangible Through Stories

Measuring What Matters for Tomorrow

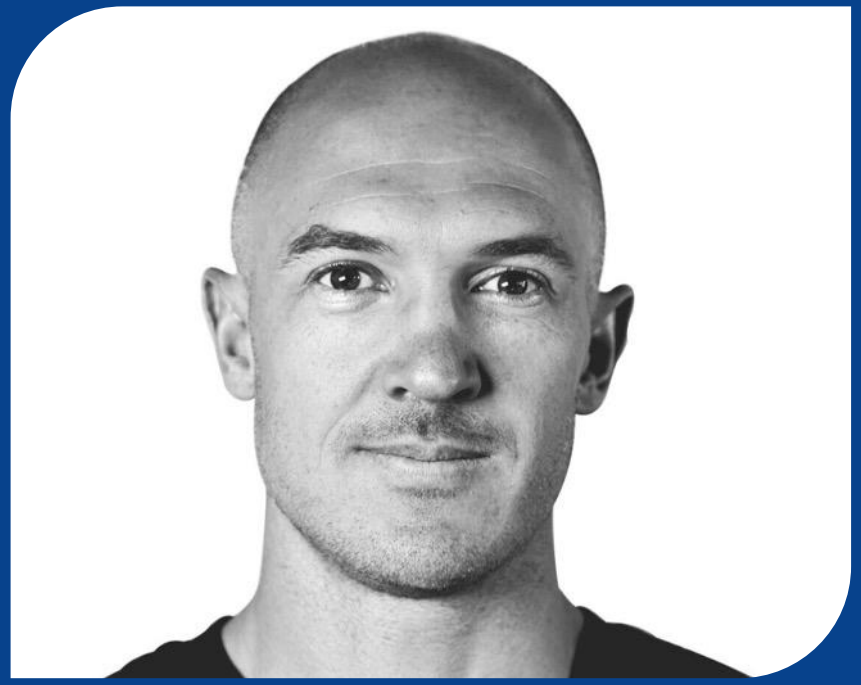
Acting with Agency Despite Uncertainty

Singapore Foresight/Anticipatory Framework:

How Foresight supports the strategic planning cycle



Looking at the future, we can develop a better sense of context and possibility of the present



Matthew Lincez, OCAD University

The Leader’s Role

- Creating shared visions.
- **Building coalitions for experimentation.**
- **Supporting innovation under uncertainty.**

Leadership in futures is about building readiness, not certainty.

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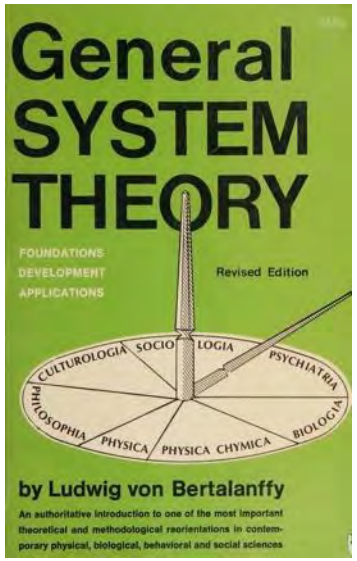
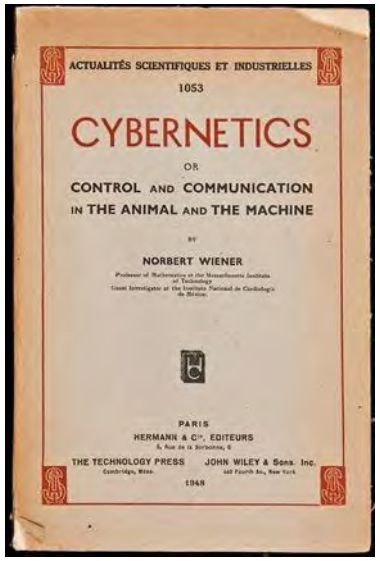
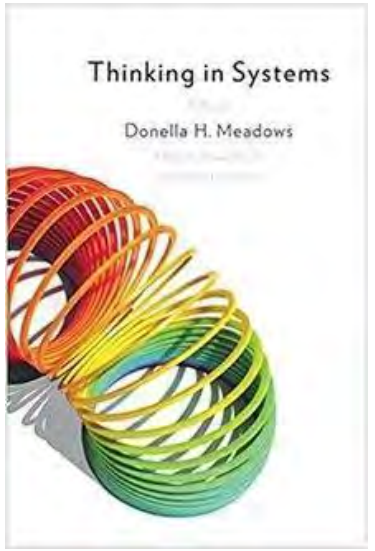
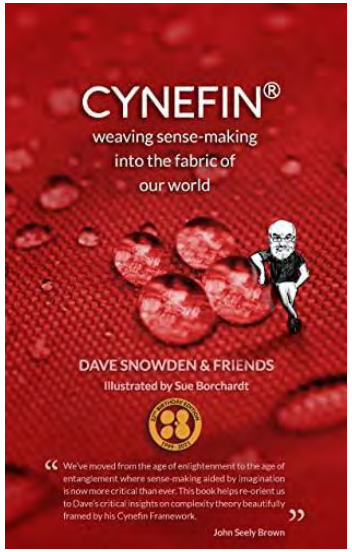
Systems Thinking: Introduction

Systems Thinking is part of a larger, separate field – that overlaps with AGI









Systems Theory, Cybernetics, Complexity Science, Transition Design… and more

Systems Thinking – 'practical' mindsets and sense-making by folks like Donella Meadows and Dave Snowden

“Systems thinking is a discipline for seeing wholes.

It is a framework for seeing interrelationships rather than things, for seeing ‘patterns of change’ rather than static ‘snapshots.’”

Peter Senge

from the “Fifth Discipline”

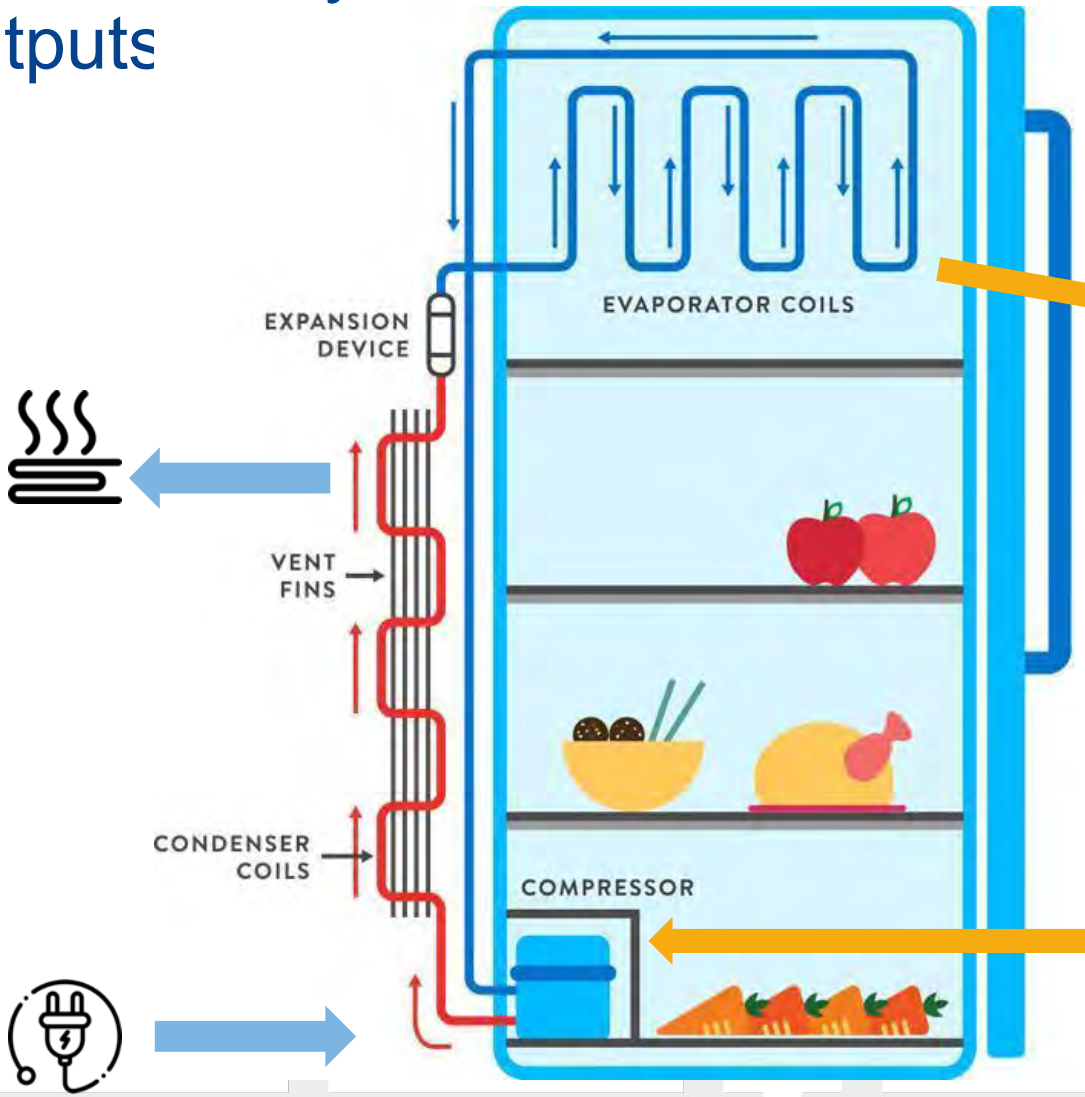
What is a system?

What is a system?

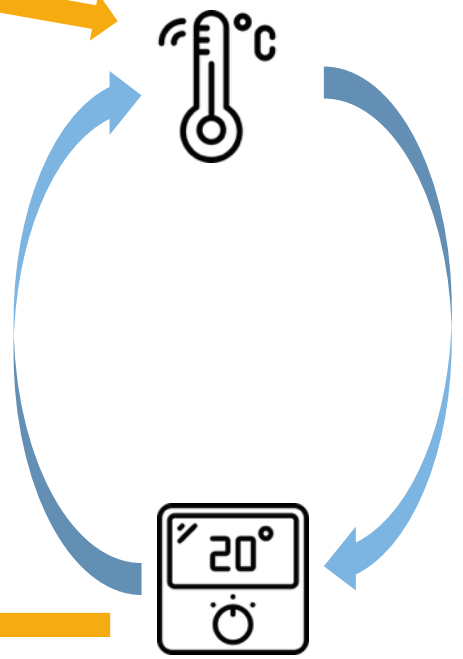
"A system is a set of things—people, cells, molecules, or whatever—interconnected in such a way that they produce their own pattern of behavior over time."

Donella Meadows

Refrigerator as a System: Input, Outputs



Feed system using Thermostat



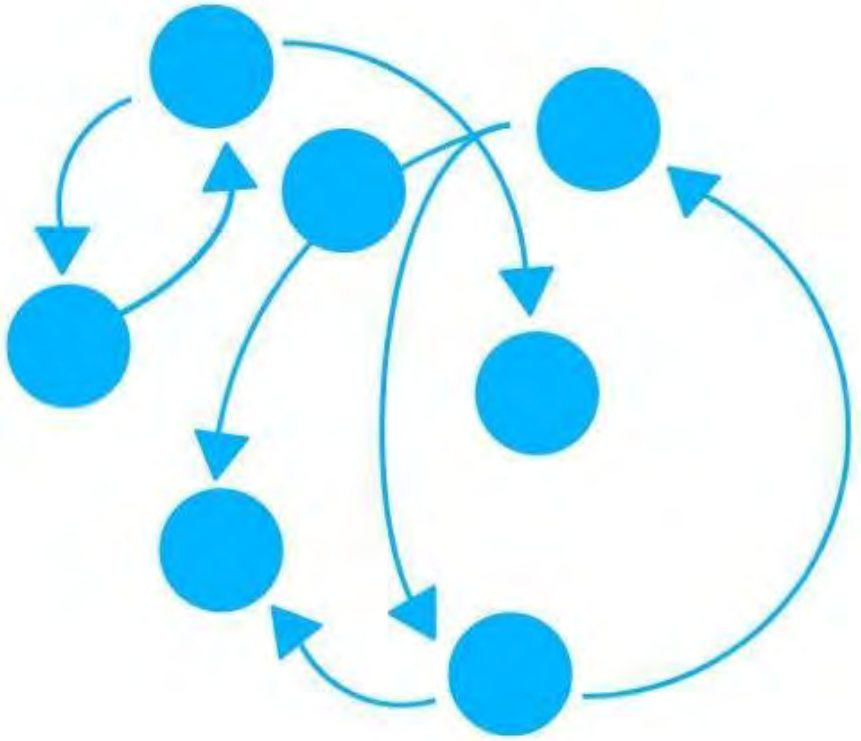
Heat goes out

Energy is added

Source: How does a does a fridge work

Traditional thinking

Systems thinking



Complicated or Complex Systems

Throwing a Brick: Complicated

- All components are knowable and definable
- They can be catalogued
- All relationships can be listed
- Cause and effect can be understood and replicated
- It is the sum of its parts

Complicated or Complex Systems

Throwing a Brick: Complicated

- All components are knowable and definable
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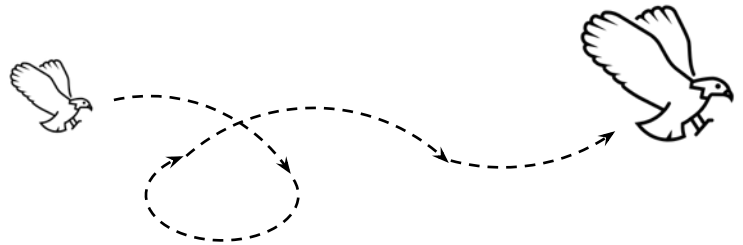
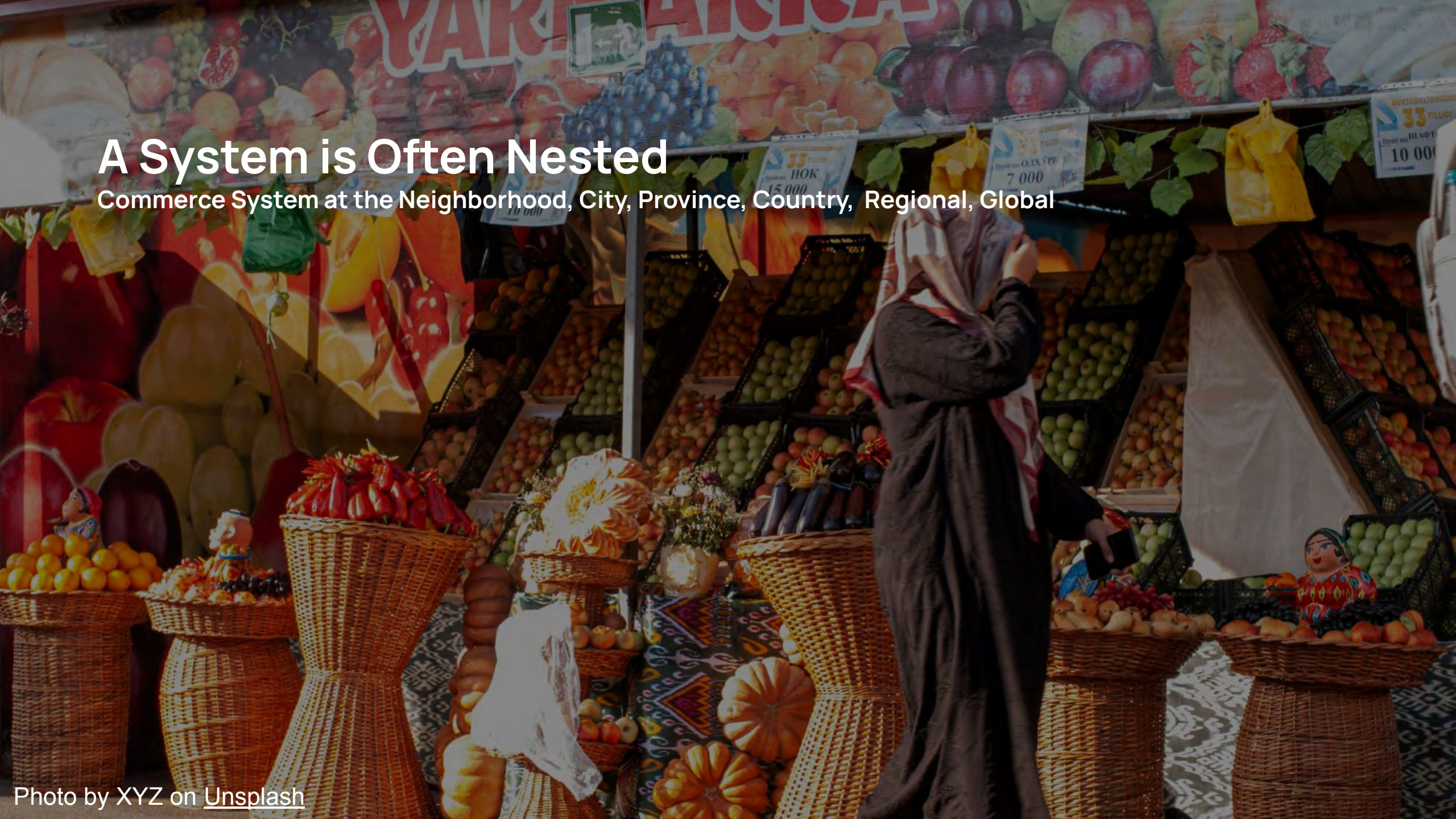
- All relationships can be listed
- Cause and effect can be understood and replicated
- It is the sum of its parts

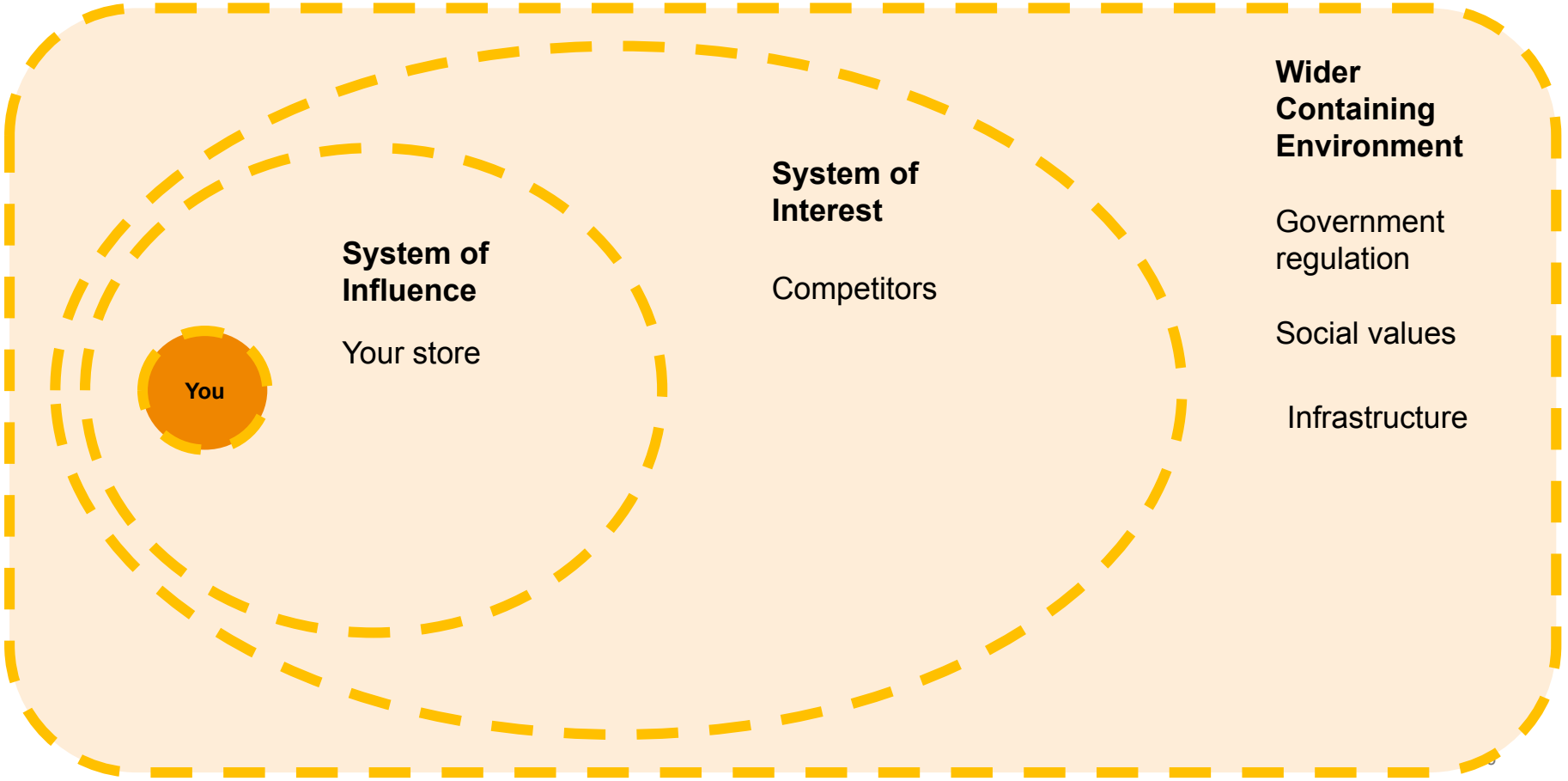
Throwing a Bird: Complex

- Many interacting agents with multiple identities
- Nonlinear: if you alter an agent the effect is not 100% predictable or knowable
- Cause and effect are intertwined
- It is not the exact sum of its parts




A System is Often Nested
Commerce System at the Neighborhood, City, Province, Country, Regional, Global
Photo by XYZ on Unsplash

Nested Systems & Considering Change



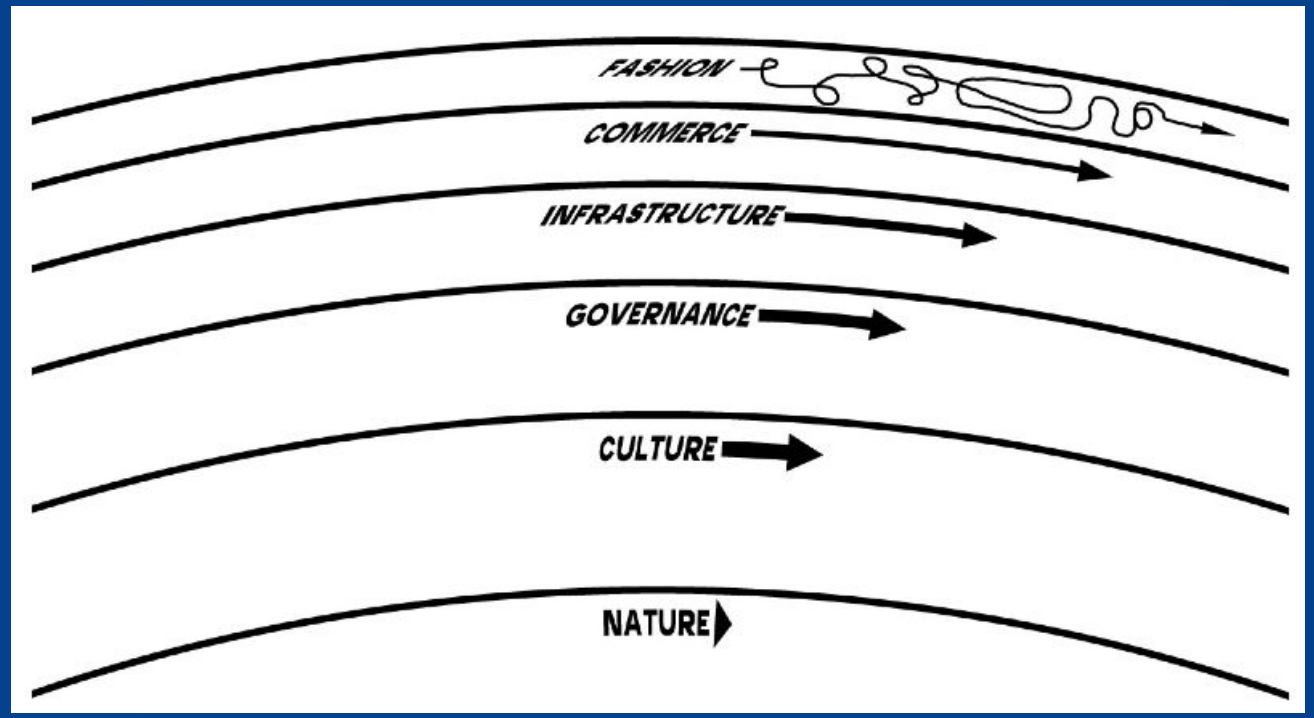
Systems and Different Time Horizons

"Fast learns, slow remembers. Fast proposes, slow disposes. Fast is discontinuous, slow is continuous.

Fast and small instructs slow and big by accrued innovation and by occasional revolution. Slow and big controls small and fast by constraint and constancy.

Fast gets all our attention, slow has all the power."

Pace Layering: How Complex Systems Learn and Keep Learning. Stewart Brand, 2018 (Journal of Design and Science)



Systems Thinking as a Mindset Shift

Let’s start with the first set of slides

Limitations in Traditional Planning Approach

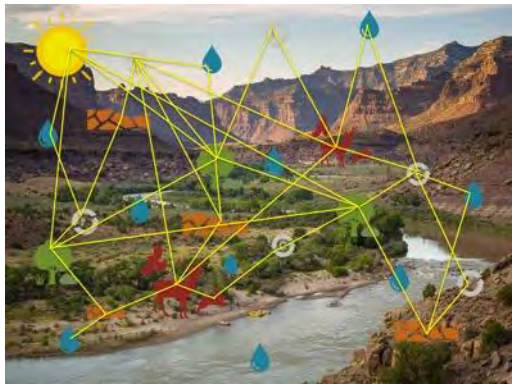
Assumes Completeness of Data

Doesn’t Consider Unintended Consequences

Overwhelmed by Non-Linear Change

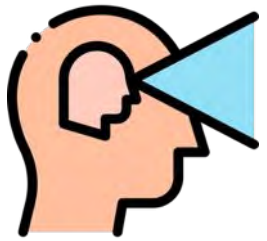
Systems Mindset Considers

WIUT



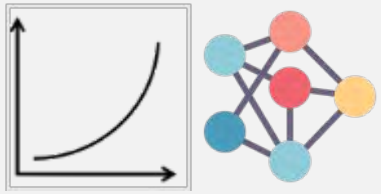
Ecosystems Approach

- Analyze the Whole, not Sum of its Parts
- Look at relationships, context



Reflexive Thinking

- Question assumptions
- Engage different stakeholder perspectives



Embrace Non-Linearity Change

- Look at change non-linear
- See interconnections as points of leverage

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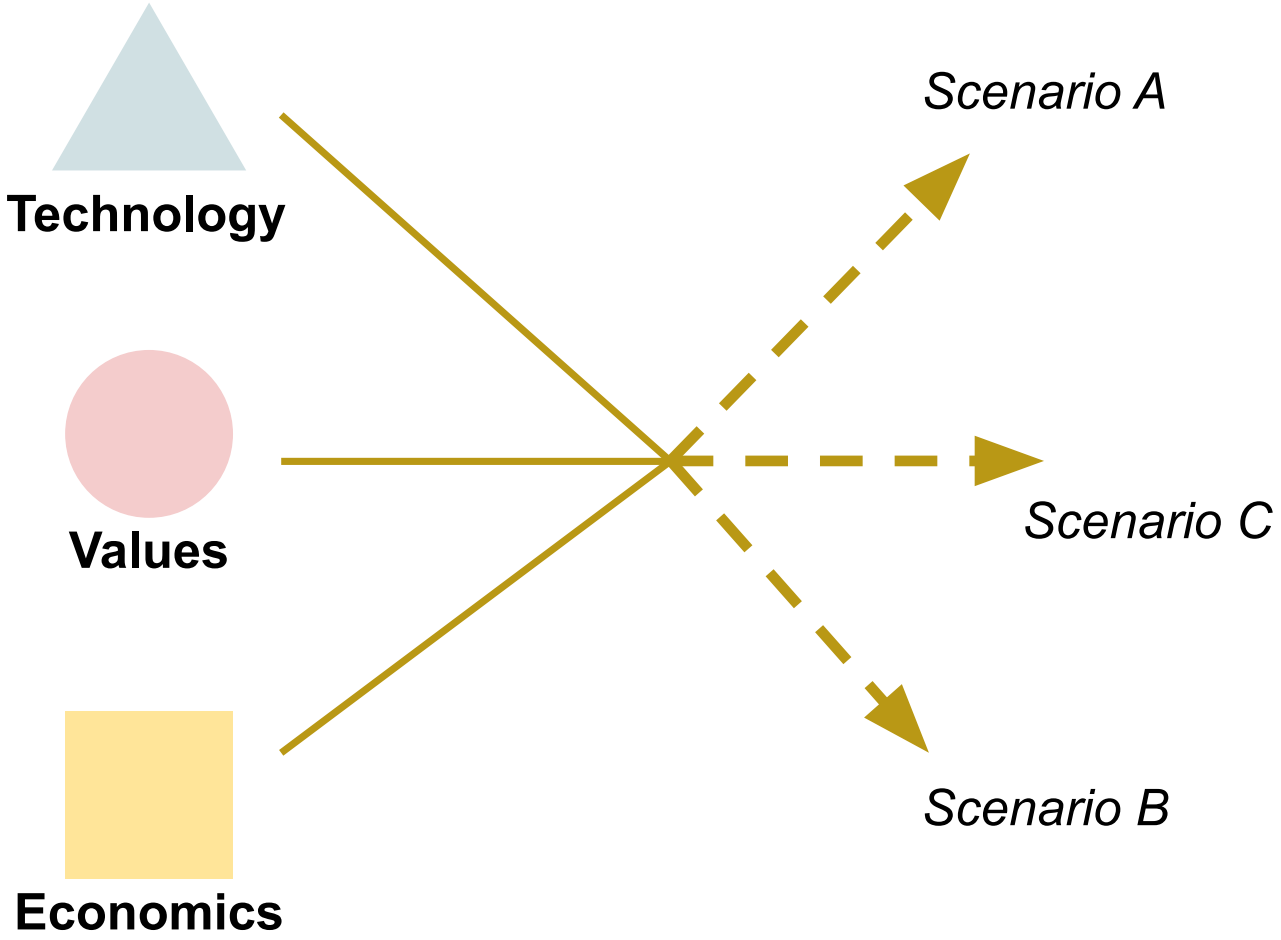
Systems and Drivers of Change

Exploring and Colliding Drivers

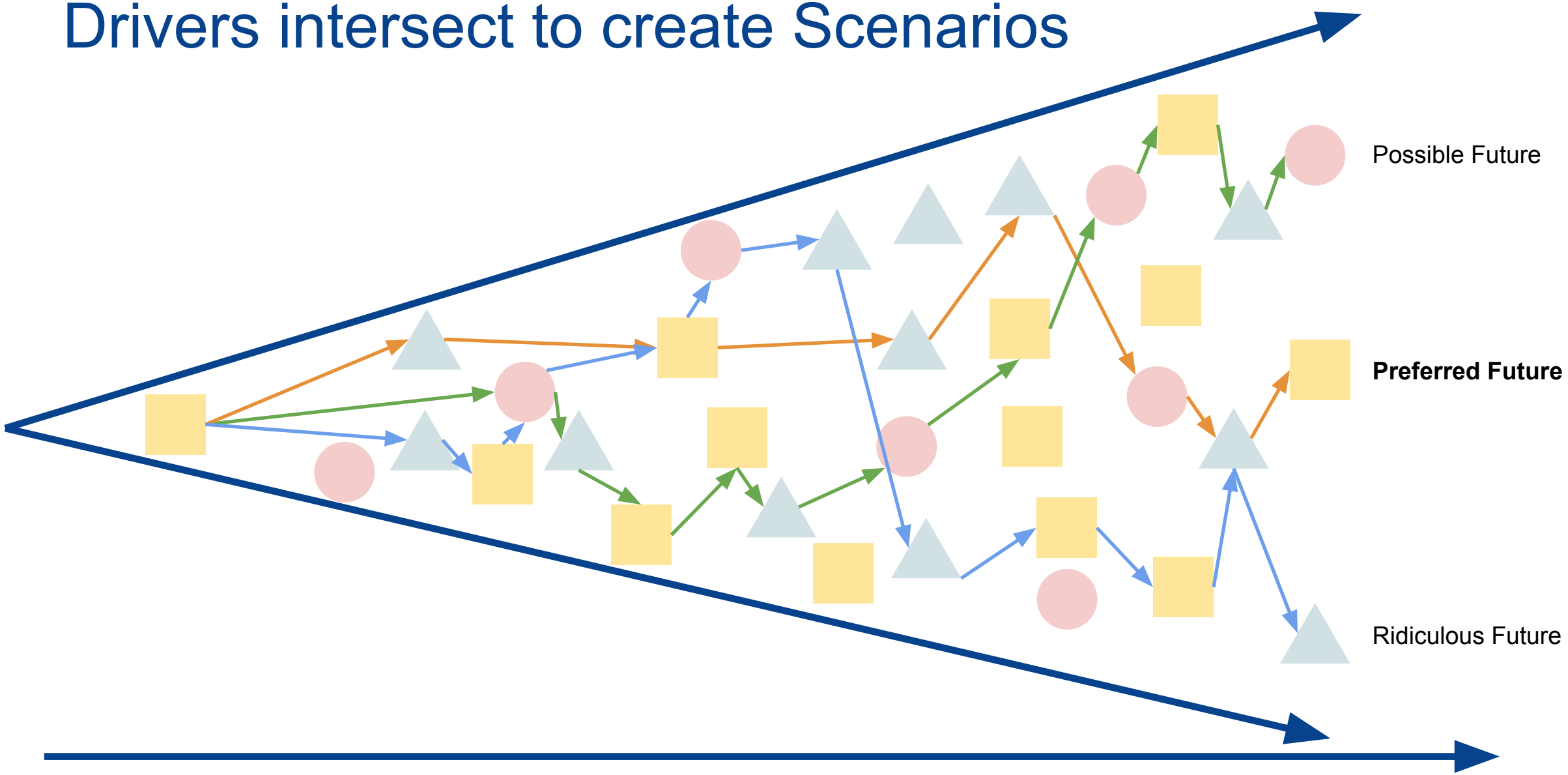
What are Drivers of Change

Drivers are major forces that are shaping democracy and governance in our region, and often globally.

Global & Systemic Drivers of Change:
Climate Change, Demographic Change, Digital Media



Drivers intersect to create Scenarios



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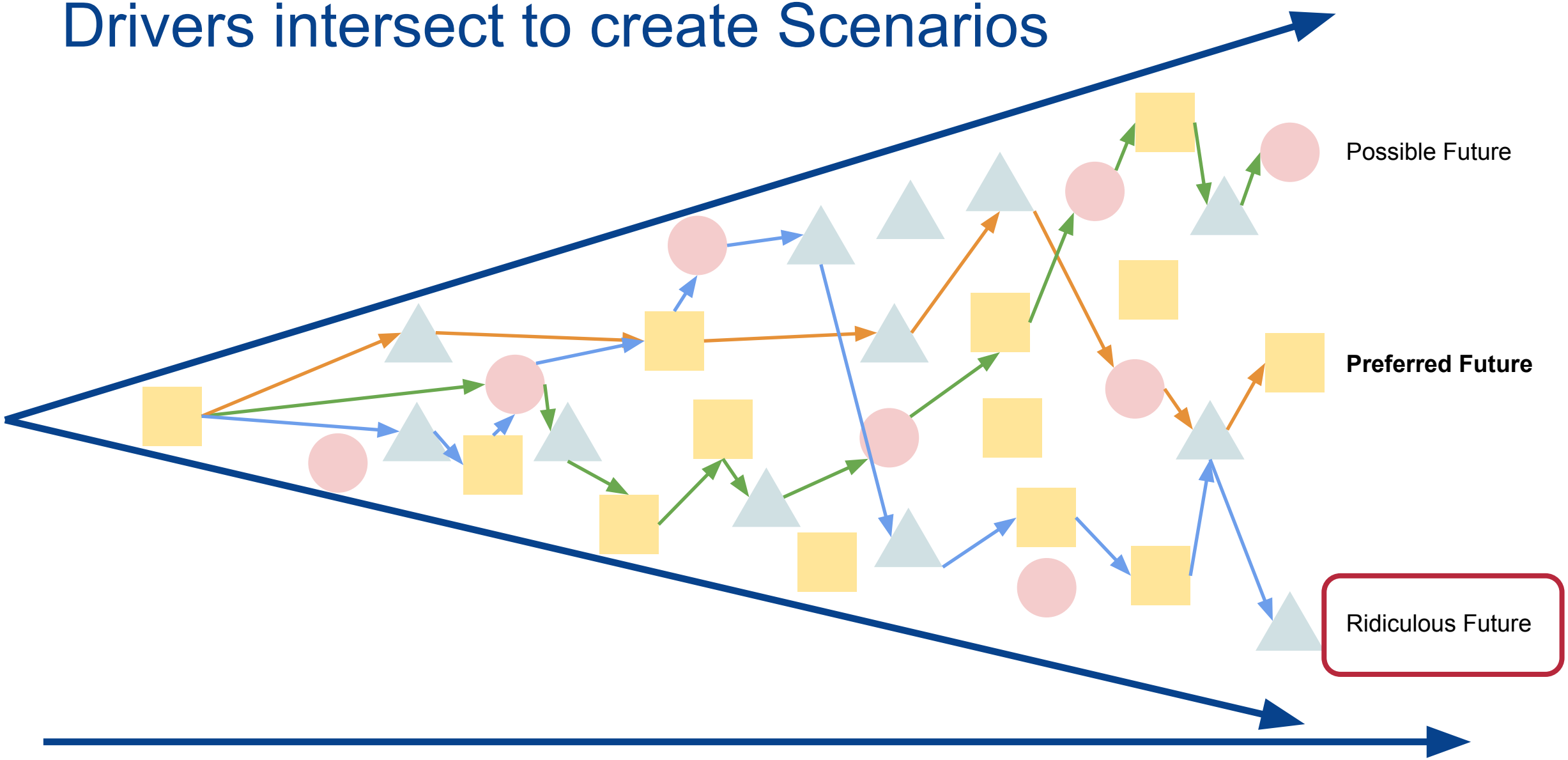
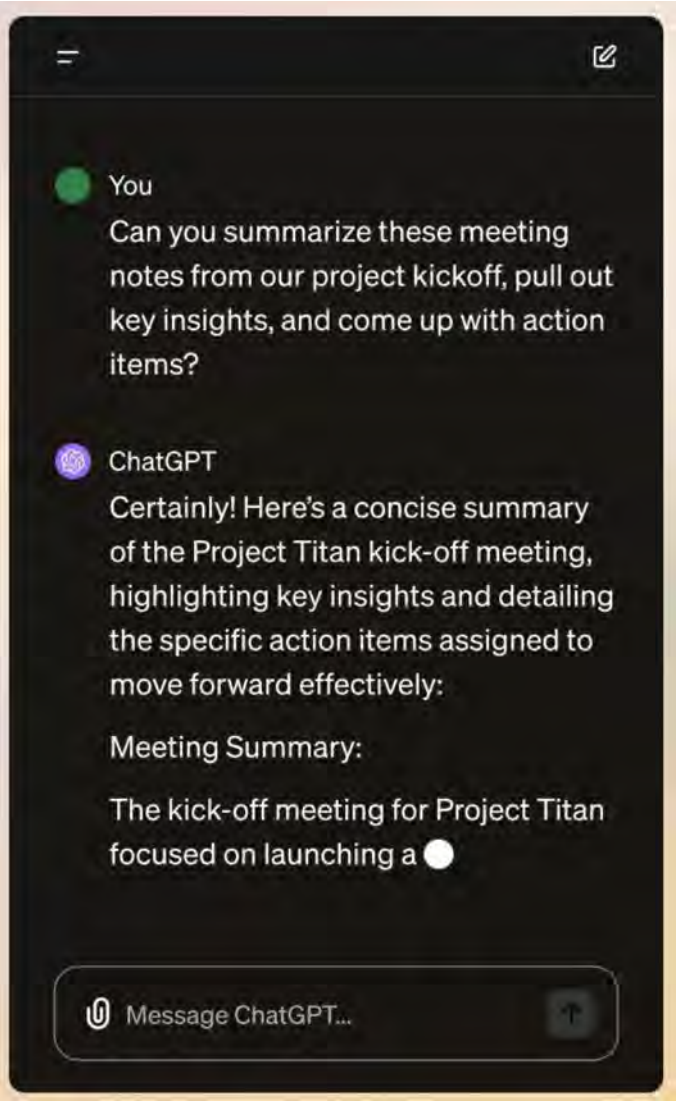
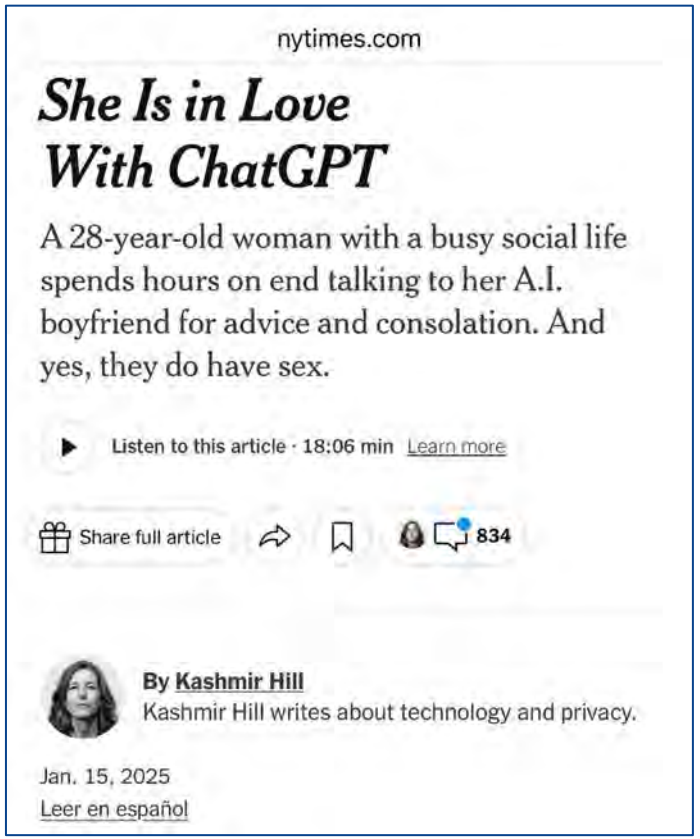
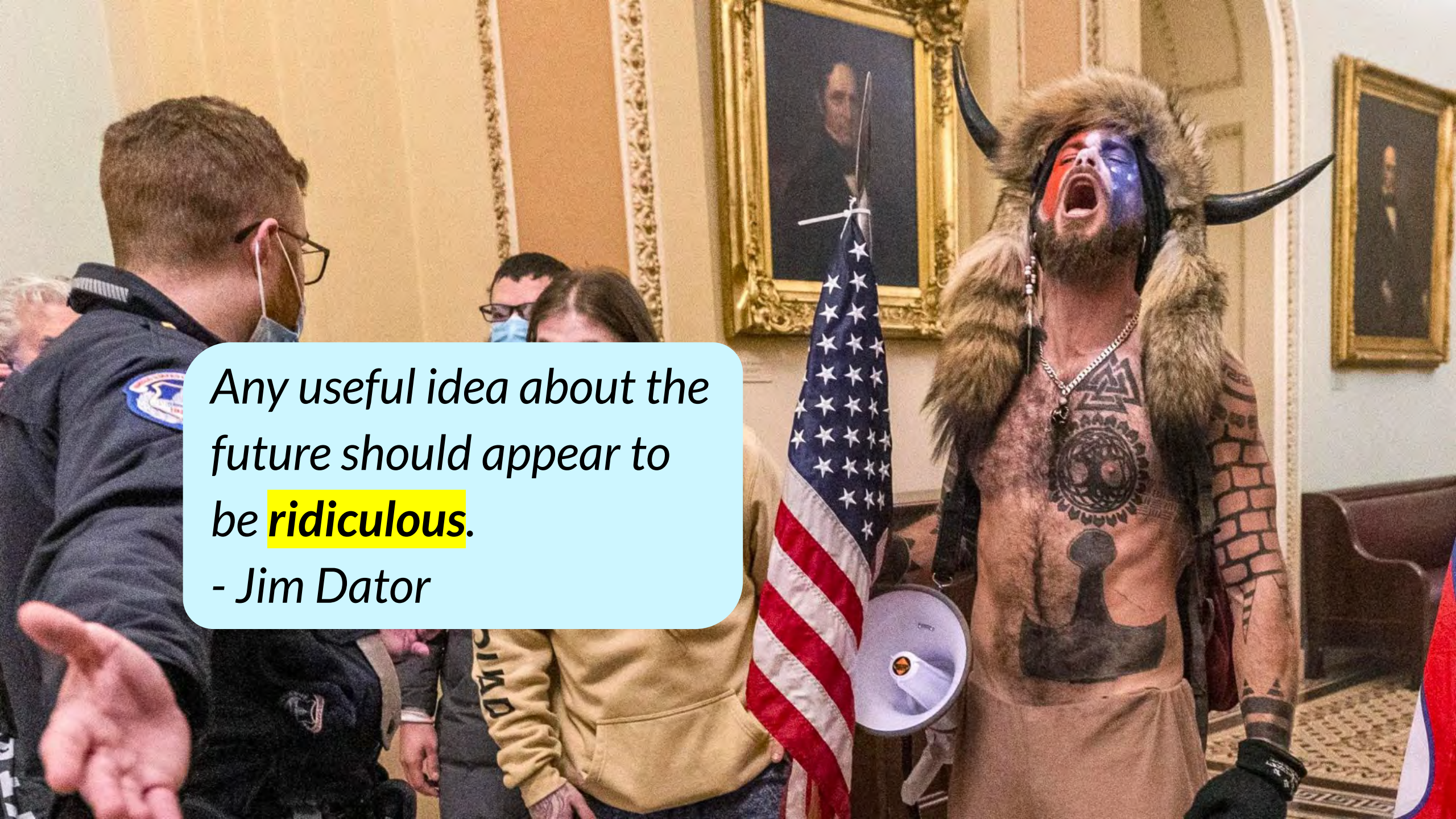


Ridiculous: ‘Unexpected’ Implications

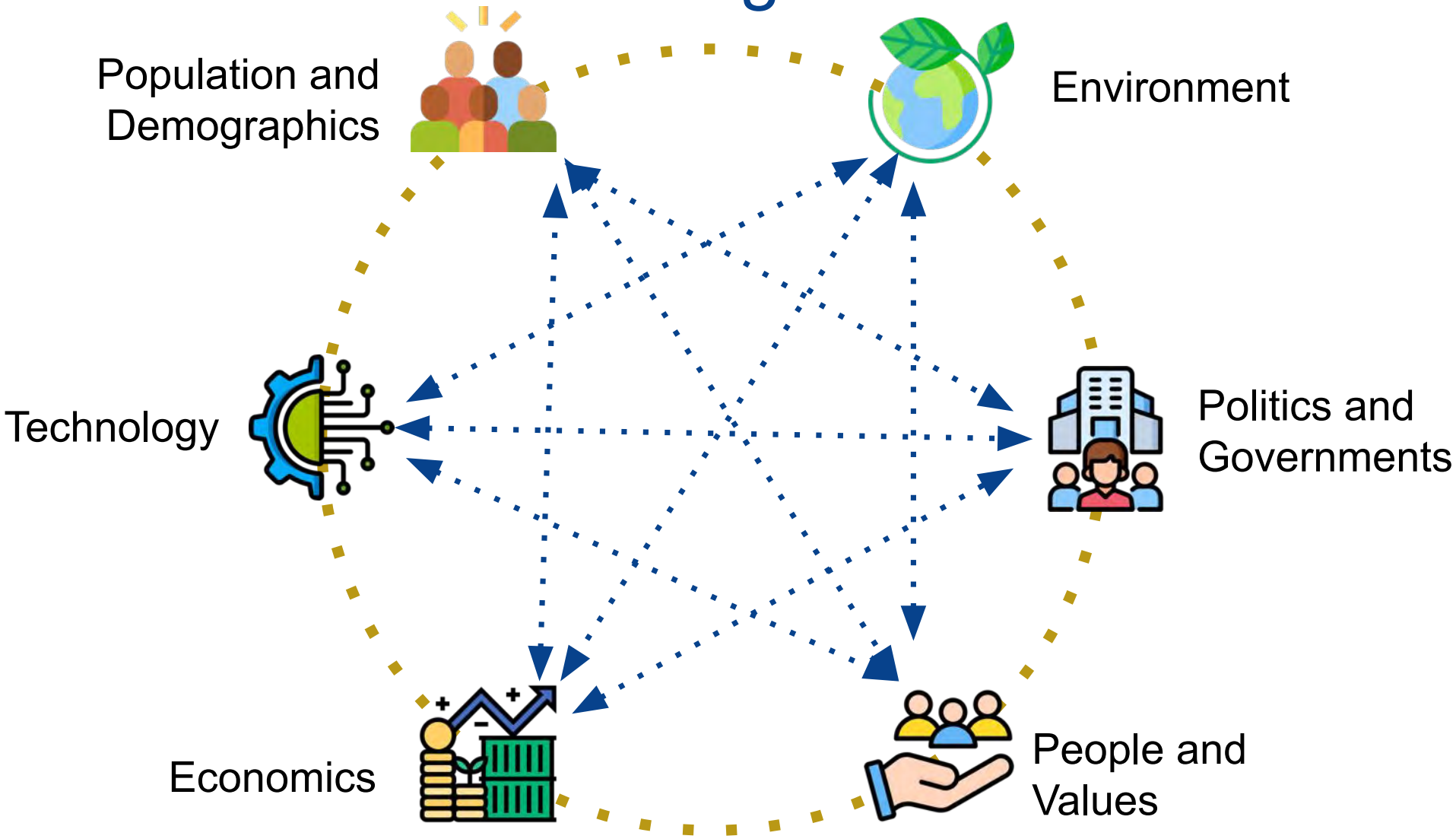
WIUT






*Any useful idea about the future should appear to be **ridiculous**.*
- Jim Dator

Domains of Drivers of Change



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Systems Thinking:
Ways of Thinking about Change

Anecdotal to systemic forces of change

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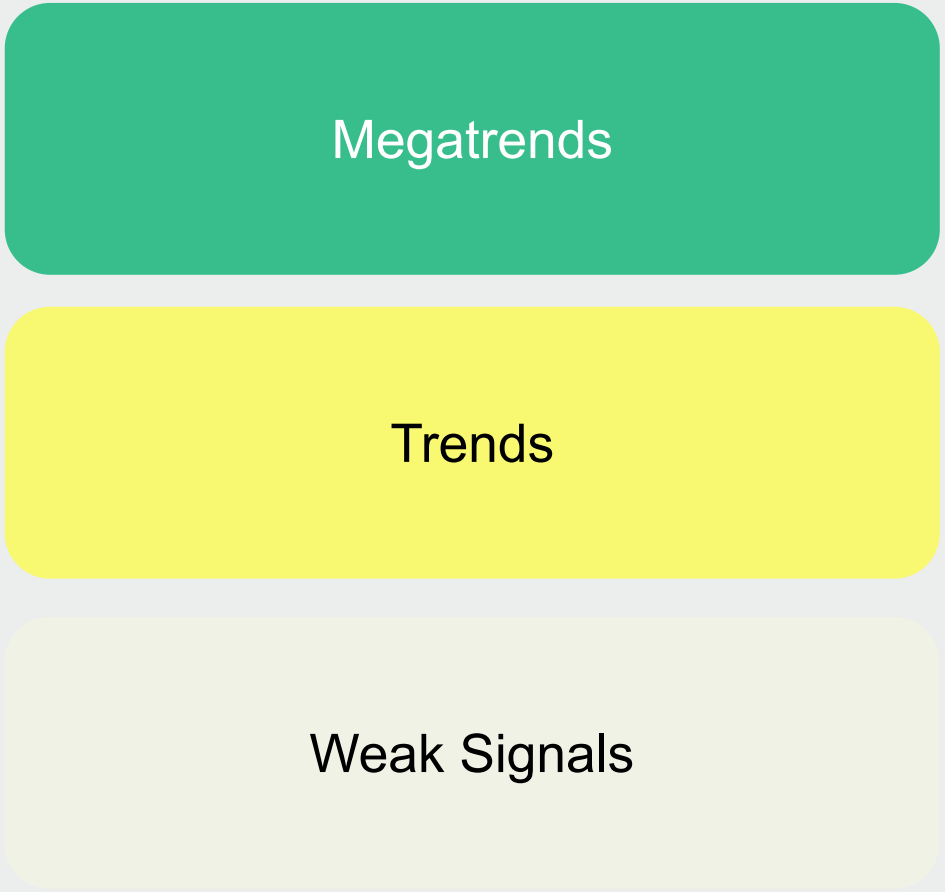
- Dominant
- Structural
- Pushes other trends

- Measurable
- Increasing

- Anecdotal
- Tentative
- Potential



Climate Change

Migration

At most extreme, *an 'un-Google-able'* insight

what is a weak signal is as much as an art as it is a (social) science

Helping Challenge and Create

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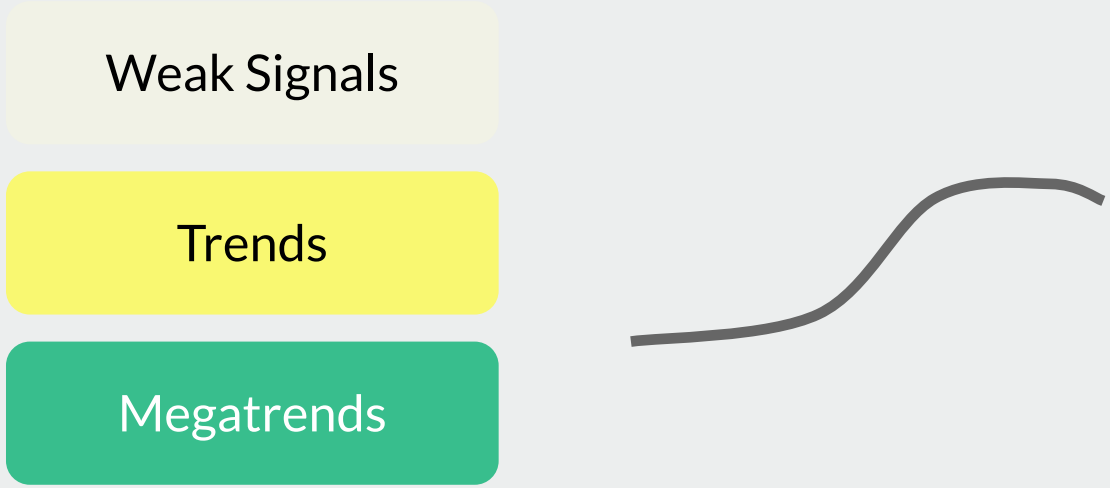
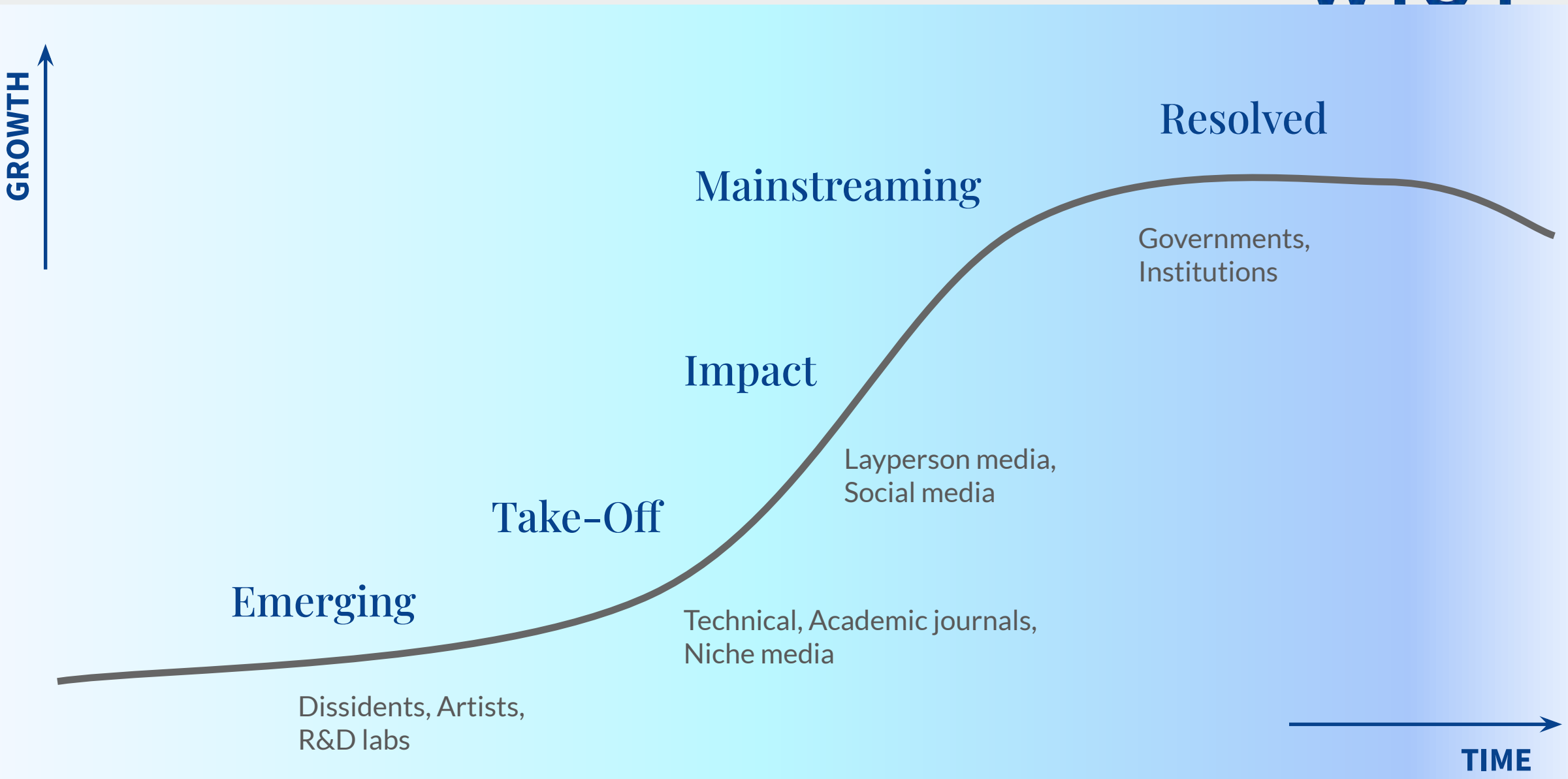
Looking at change happening today enables us to

(1) challenge our ‘given future’

(2) create new possible futures



Change ’maturing’ along an S-Curve



Trends and Potential Implications

WIUT

Shifting Global Demographics

BRICS

Decline of the West

A post-United Nations world?

With major democracies unable to agree on the scope of sovereignty and the balance between political expression and security, the years to come could see more reliance on parallel structures and alternative forms of international governance. Do the admission of the African Union to the G20 (Council of Councils 2023) and the expanded BRICS foreshadow a 'post-United Nations' world, where global norms are a thing of the past, and regional blocs are crowded out by groups of countries united by a shared commodity production or through key global supply chains (Shofa 2023; Riofrancos 2020)? If so, how

Growing Diaspora, Massive Migration

Digital Communities

The online diaspora

As diasporas grow in size and importance, they may begin to play many of the same roles that democratic participation and collective decision making play in everyday people's lives. While past and current diasporic communities are often united around religious institutions or in deep involvement with the politics of the homeland, what about a future diaspora of an island country that no longer exists, or of a mountain country where the homeland is only slowly emptying further? Will mass online participation lead eventually to shadow

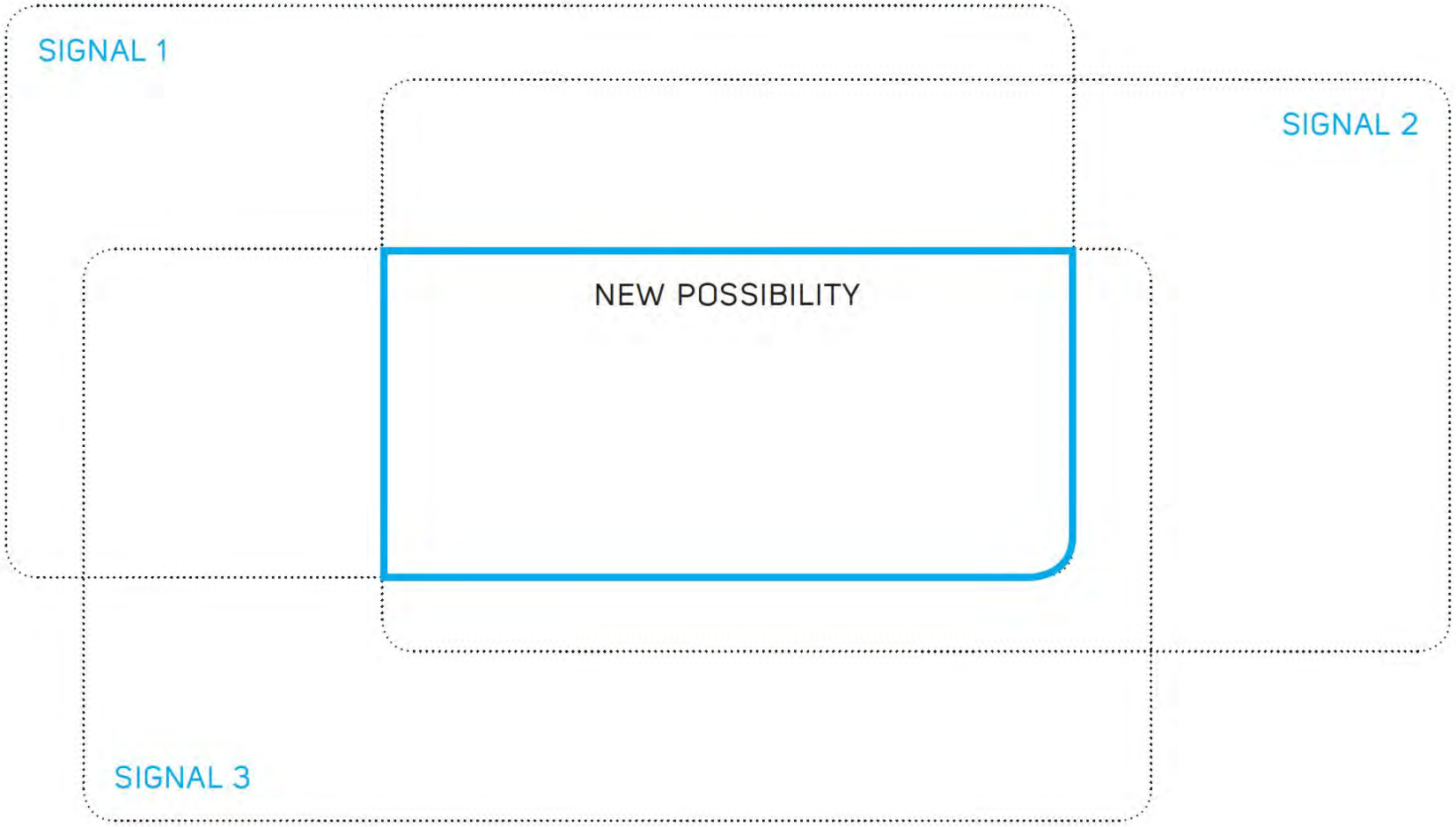
Exploring and Colliding Drivers

This exercise is for you to stretch your legs, and mind.
Have a chance to explore and play

Connect with your colleagues in other groups,
people you have not met before

There is no wrong answer here,
just new areas of exploration and reflection

Major change is seldom sparked from one type of change alone

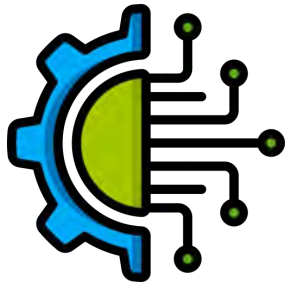
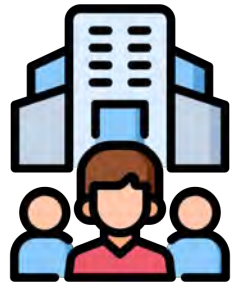


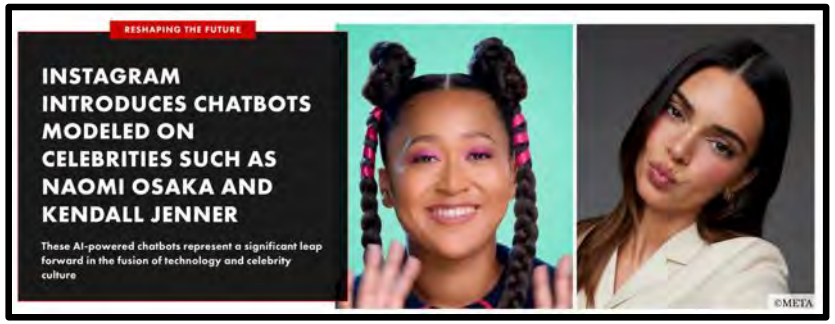
Source: Institute for the Future Foresight Toolkit

https://unsplash.com/photos/people-holding-red-signages-1oD7ct2mzgE

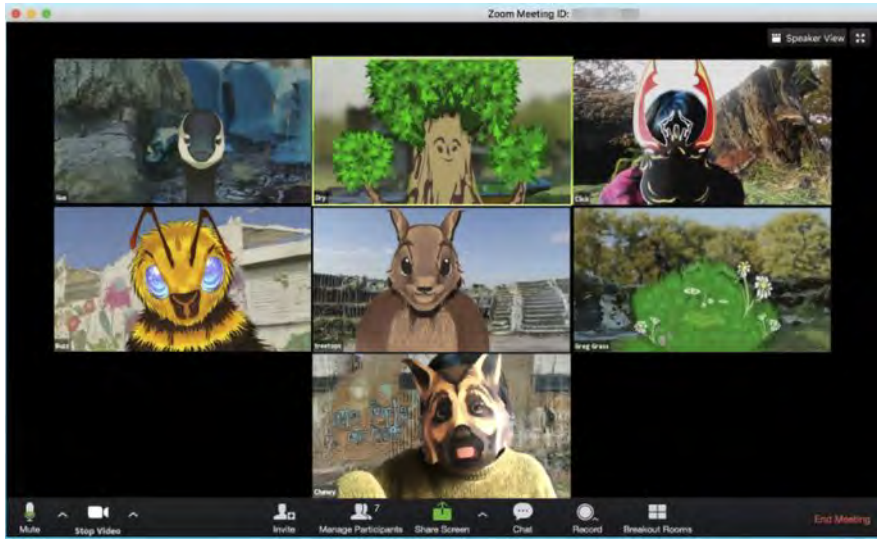
What happens when specific forces collide?

What do they create together?

Technology  ?  Politics and Governments



https://www.hola.com/us/lifestyle/20230928351038/instagram-unveils-celebrity-modeled-chatbots/



https://creatures-eu.org/productions/treaty/

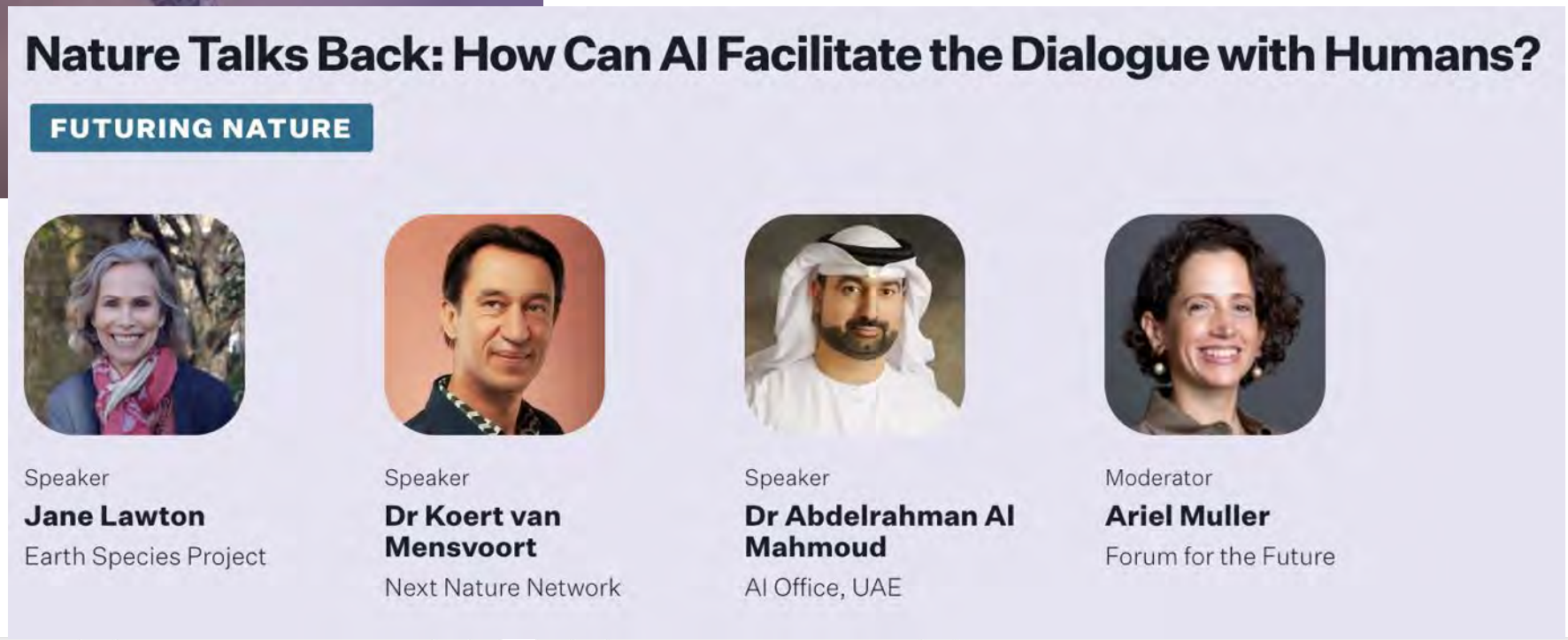
AI-powered Avatars

More Than Human Council

Nature's Legal Rights

New Ideas about Democracy

From an outlier to gathering momentum?



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Pair Exercise

Exploring and Colliding Drivers

Spend 2-3 minutes reviewing the cards, pick 2-3 drivers that you find interesting

Pair up with 1 other person each of you pick a driver.

Share with your colleague why you picked this driver

Drill deeper into the "so what?" of each driver.
What does this driver make me worry about?
What does it make me excited about?

Plausible

(Very likely, Now-5 Years)

Possible

(Could happen, 5-20 Years)

Preposterous

(Most people would never think it would happen, 20-35 Years)

Colliding A+B

Key Elements	Plausible (Very likely, Now-5 years)	Possible (Could happen, 5-20 years)	Preposterous (Most people would never think it would happen, +20 years)
Factor A (your choice) + Big Tech	+ Positive	+ Positive	+ Positive
Factor B (your colleague's) Regional Dynamics	-		-
AND			
Keep in mind the **Other key factors**			

US bans Tiktok as tech becomes geopolitical

Each region develops their own tech champions, bans outsiders

Each region specialized:

South Asia focuses on "pharma" and biotech

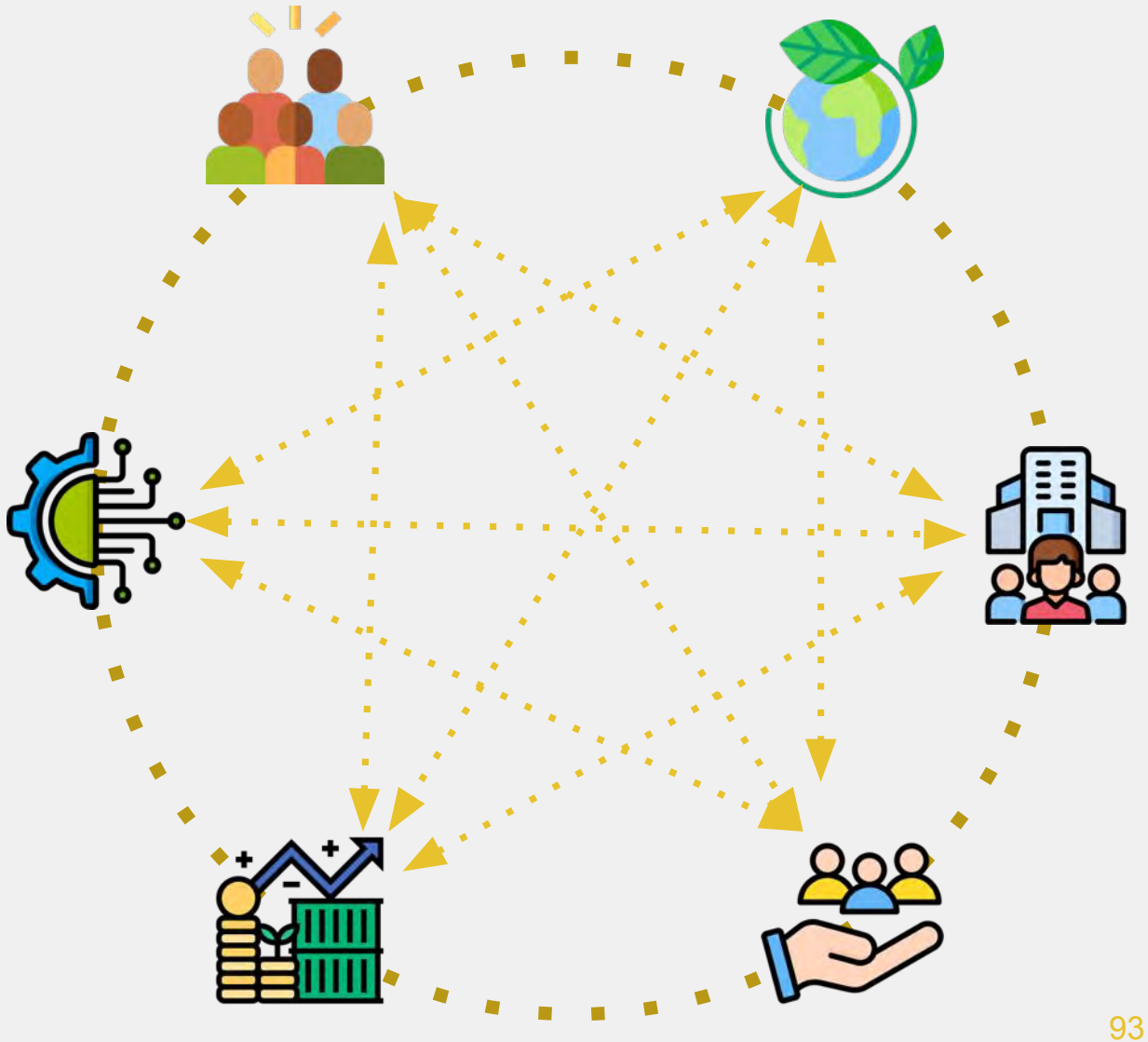
Shuns other technologies as not "South Asian" in values

Drivers of Change

You've just tested the drivers…

What would you change?

What would you remove?



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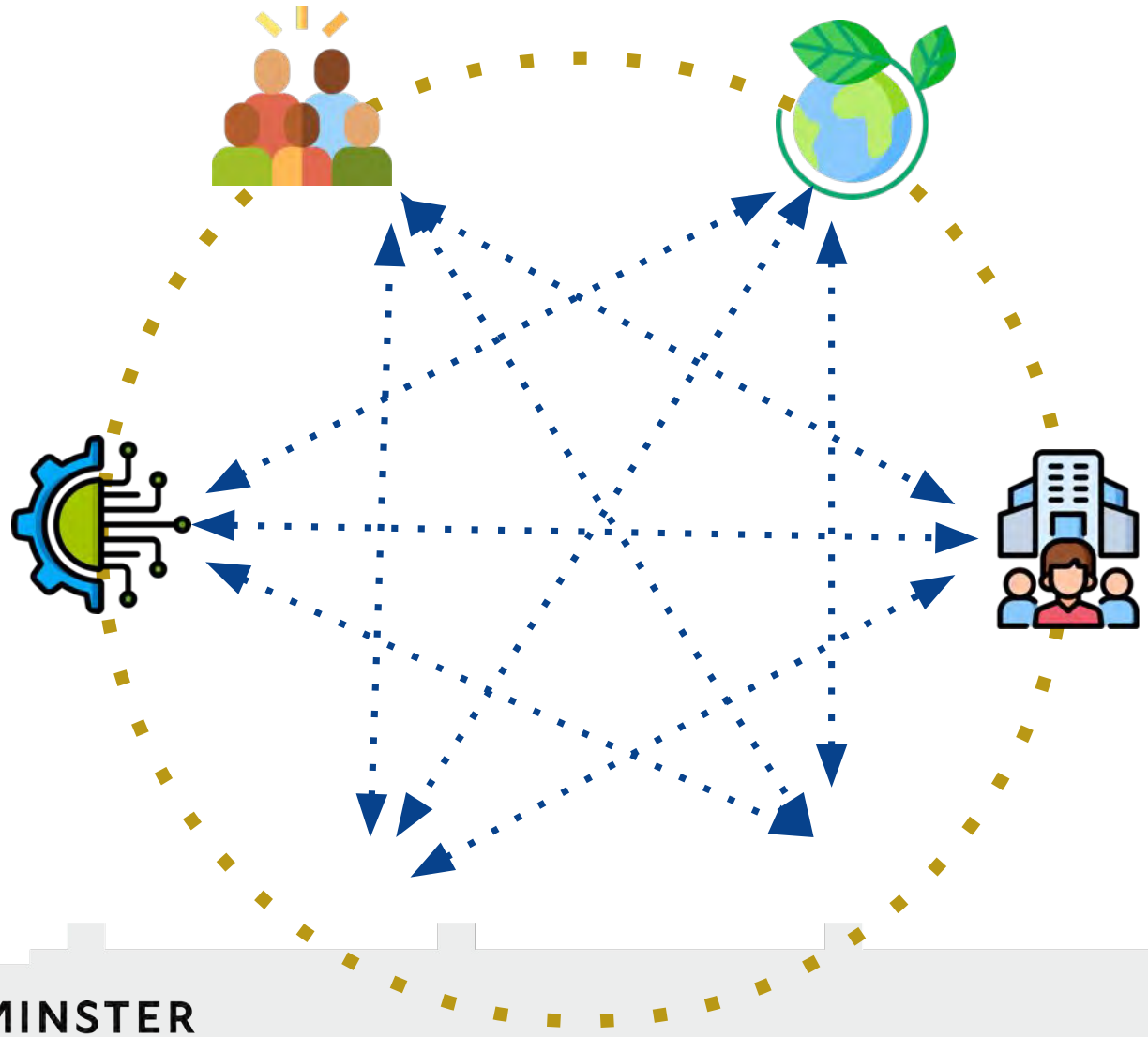
ACTIVITY
Assessing the Drivers of Change

Drivers of Change

You've just tested the drivers…

What would you change?

What would you remove?



Assessing Drivers Exercise

Individually, take a moment to reflect:

- **Which 2 drivers stand out as <u>surprising</u> or important to you?**
- **Any would you change?**
  Write it down, up to 2 drivers
- **Would you add a driver?**
  Write it down, up to 2 drivers

Assessing Drivers Exercise

Individually, take a moment to reflect:

- **Which 2 drivers stand out as <u>surprising</u> or important to you?**
- **Any would you change?**
  Write it down, up to 2 drivers
- **Would you add a driver?**
  Write it down, up to 2 drivers

Now share with your colleague next to you

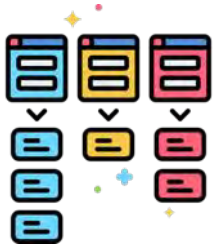
What does your driver look like in your community/context?

What differences do you have? And why?

Our 4 Day Agenda

Tuesday
Situating
What is Anticipatory Innovation Governance?

How do we think about change?



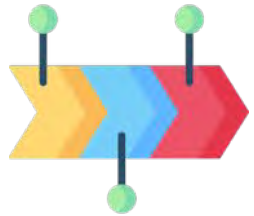
Wednesday
Potential Scenarios

What are the forces shaping the future of?

What are the different ways these forces could shape the future?

Thursday
Implications and Policy Response

What are the different ways these forces could shape the future?



Friday - Implications and Policy Response

What are the potential implications and how might we respond?

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CLOSING