12TH ANNUAL LEADERSHIP EVENT

CYBER SECURITY SUMMIT

Security solutions through collaboration.™

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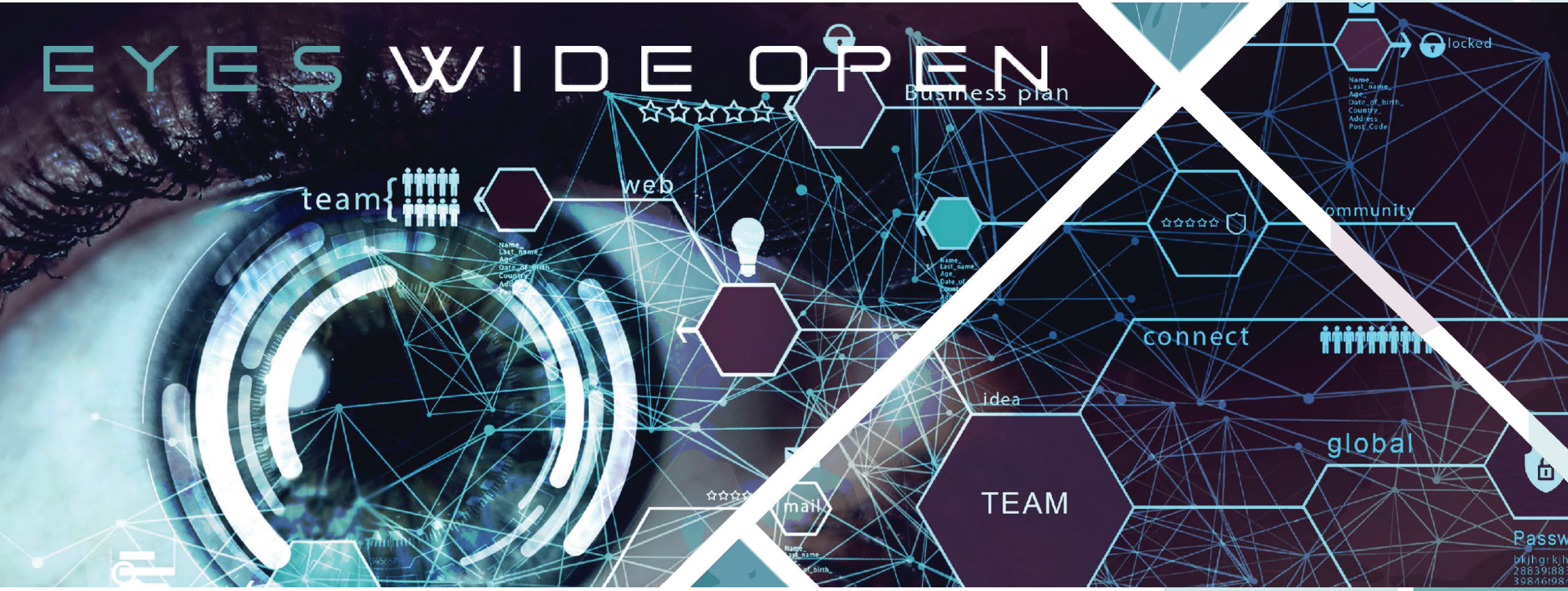
Island



Hindsight 20/20: Applying Foresight to Cybersecurity

Jeremy Treadwell
President & COO

JEREMY TREADWELL

PERSONAL PROFILE

- Information Security Founder
- Certified Futurist

EDUCATION

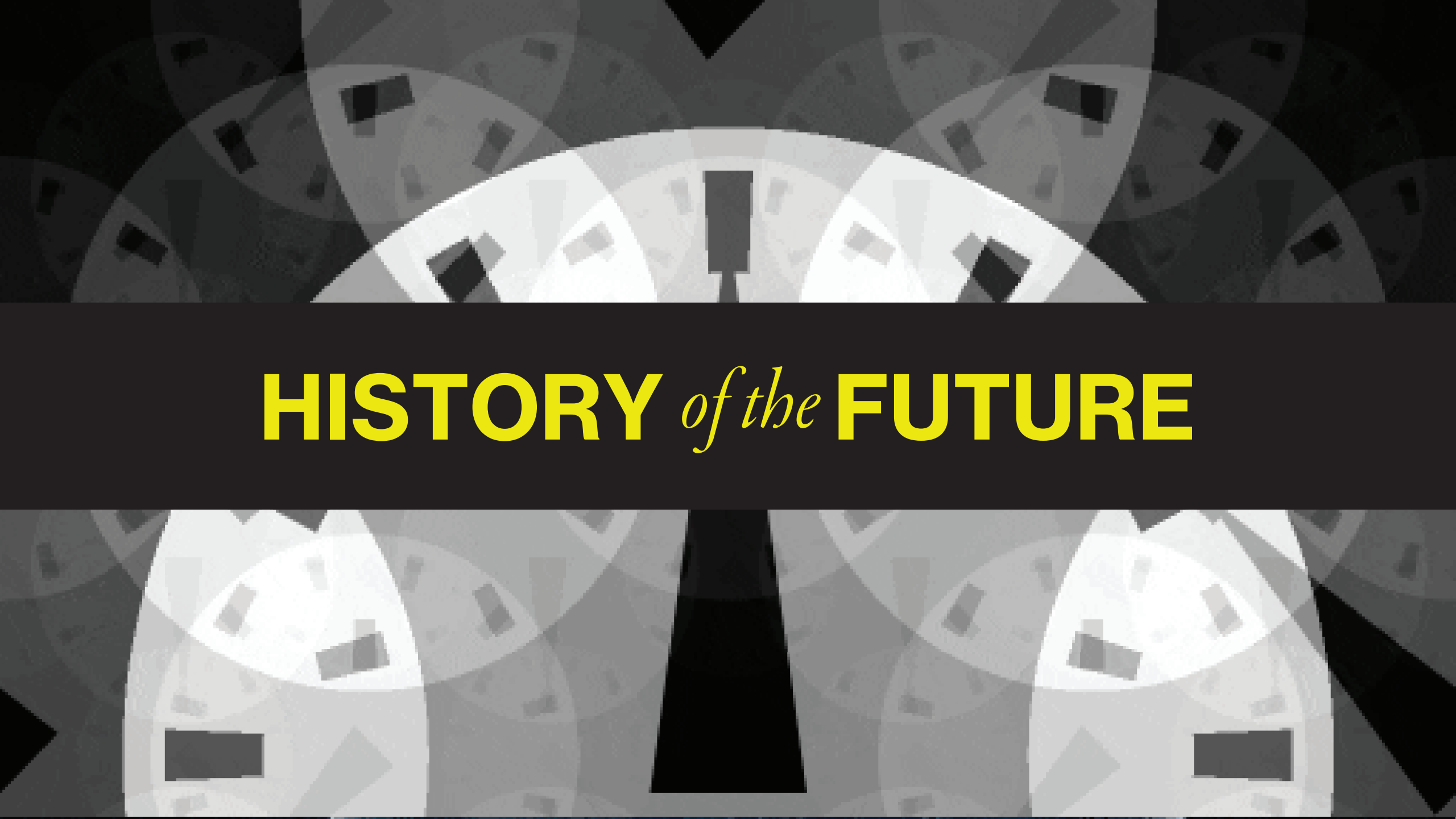
- Undergraduate Degrees in Computer Science & &Multimedia
- Graduate Degree in Business Administration
- HCI Adjunct Professor

WORK EXPERIENCES & ACHIEVEMENTS

- Digital Experiences Strategist
- Product Development Consultant
- User Behavior Strategist

HOBBIES

- Traveling
- Reading
- Boxing
- Golf


HISTORY of the FUTURE

HISTORY *of the* FUTURE

1940s

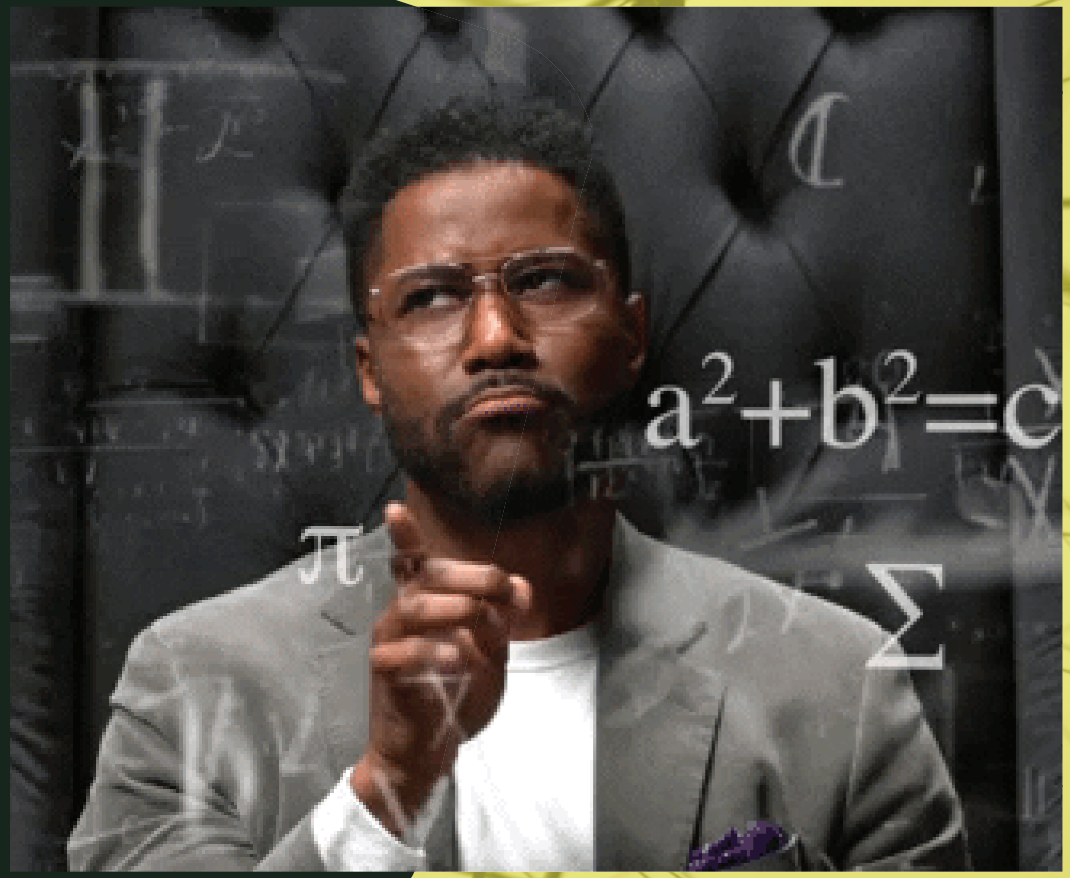
The term futurology in its contemporary sense was first coined in the mid 1940s by the German Professor Ossip K. Flechtheim, who proposed a new science of probability

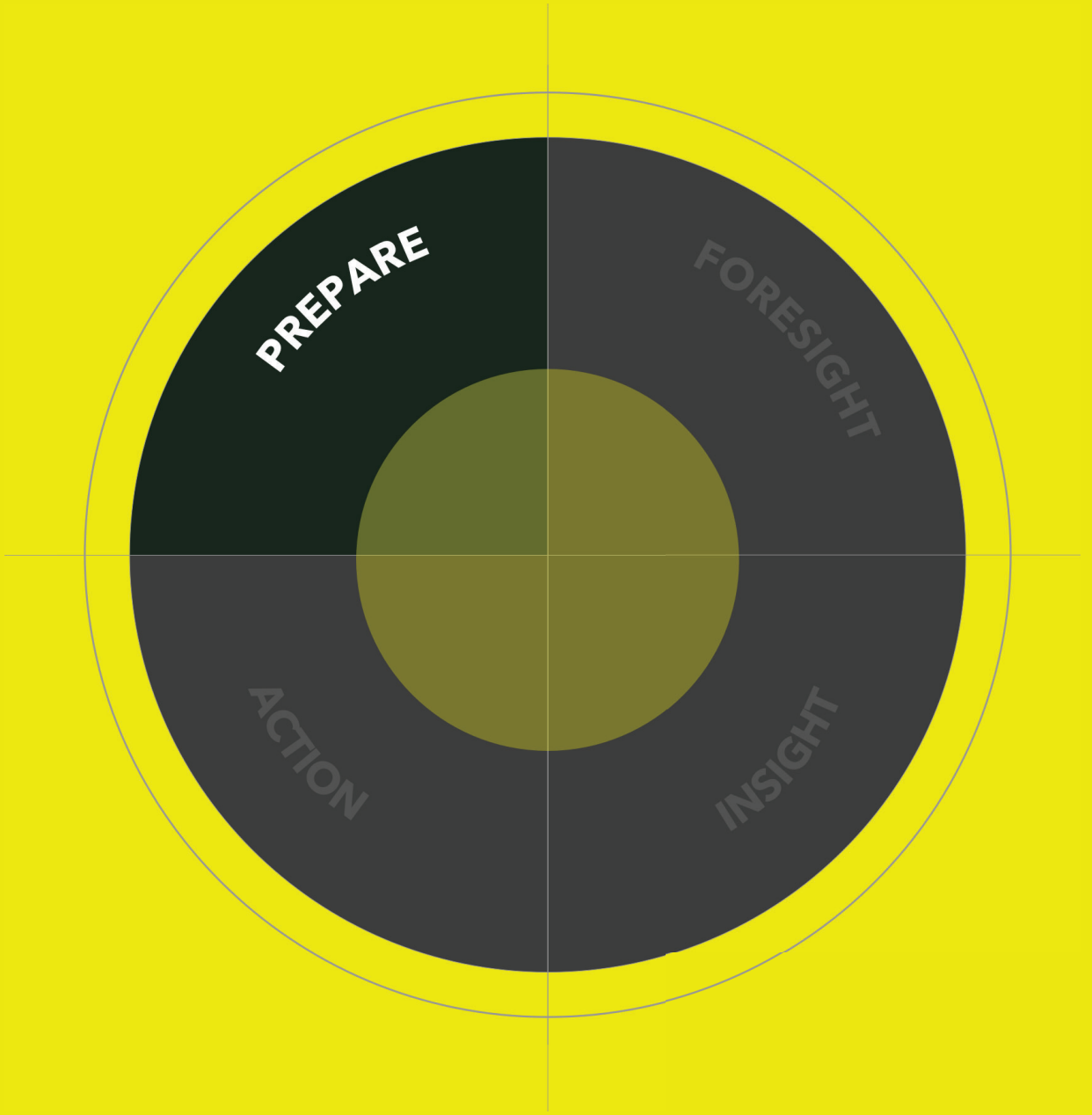
1950s

RAND and SRI began in long-range planning, trend watching, scenario development and visioning, at first under World War II military and government contracts

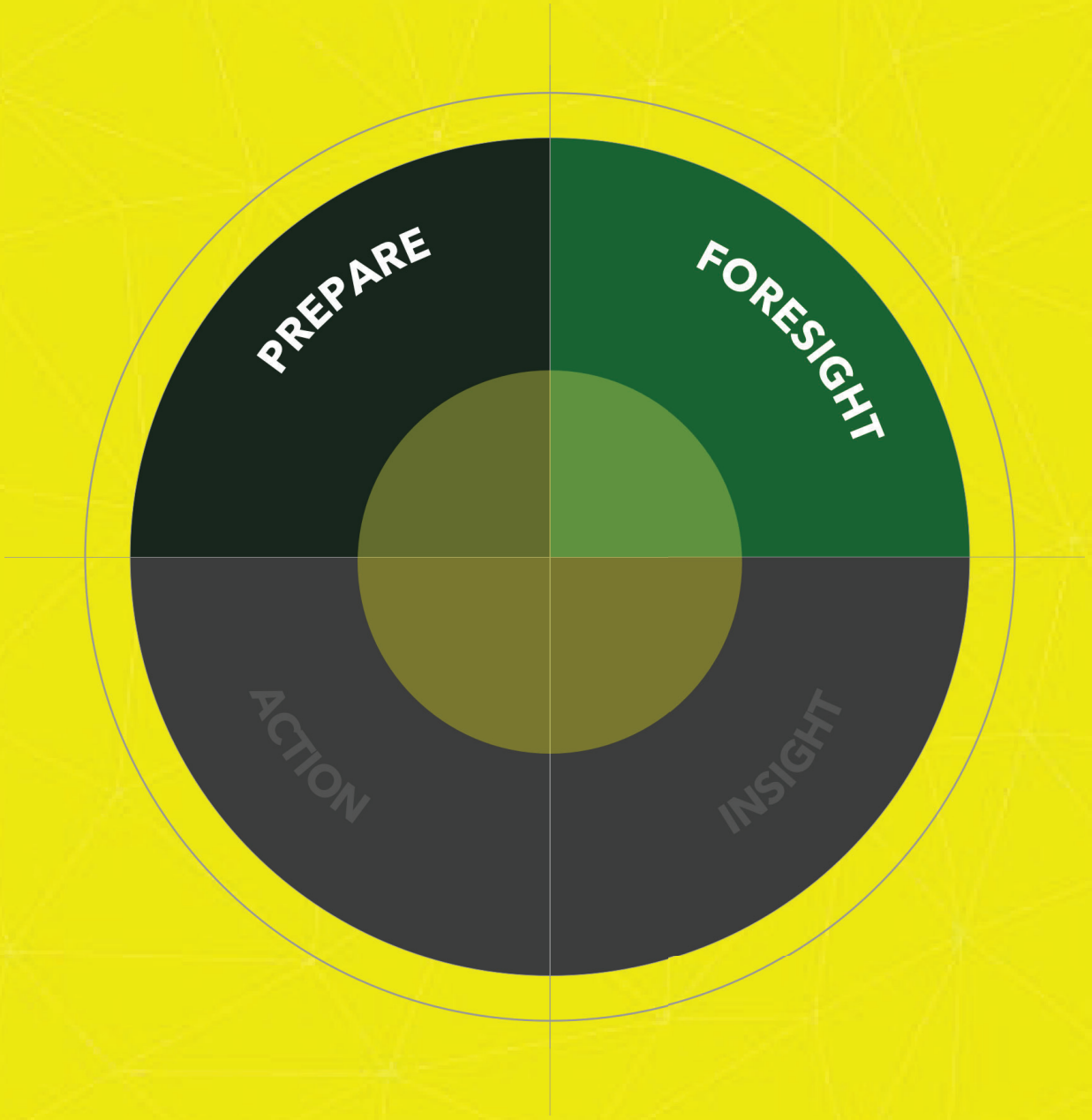
1960s

Herman Kahn found the Institute of the Future in 1968 focusing on government, private institutions, foundations and civic organizations

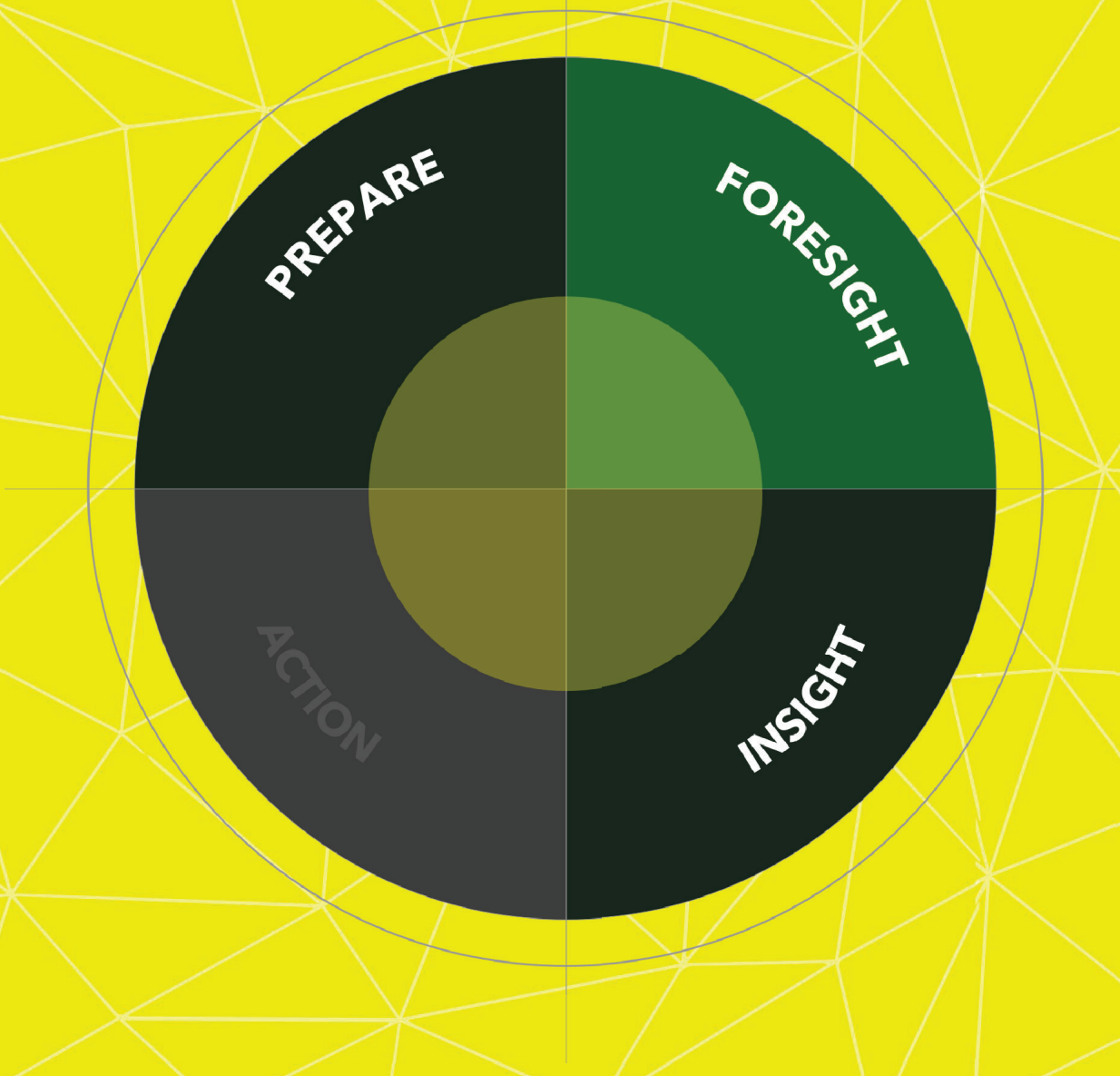




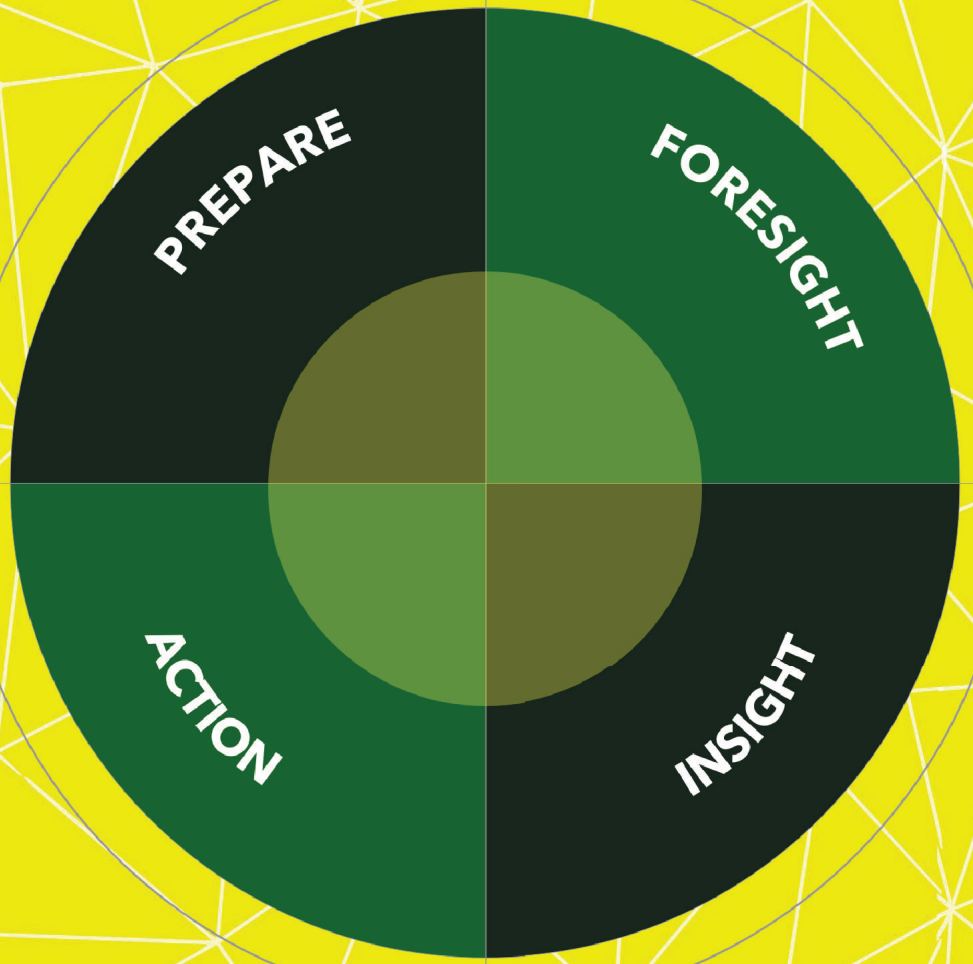
FUTURE *thinking*



FUTURE *thinking*



FUTURE *thinking*



FUTURE *thinking*

EMERGENCE *of* INFORMATION SECURITY

> *If a message is written in the clear, meaning in a common natural language, without concealment, anyone could get hold of it and be able to read it, if they know the language and understand it.*
>
> *Churchhouse, 2002*

TIMELINE *of* SECURITY

1940's

- Colossus, the first programmable digital machine was created
- British developed first digital machine to hack German codes (WWII)

1960's

- J.C.R. Licklider wrote series of memos on idea for "Galactic Network" where people could access data from anywhere
- ARPANET's first message sent at 10:30pm, Oct. 29, 1969

1970's

- Intel released the first integrated microprocessor
- First "worm" attack occurred on the internet in 1989

1980's

- National security officials in the US launched one of the worlds first cyber attacks on another country
- Bob Thomas created the "Creeper" as an experimental self-duplicating program in 1971

1990's

- ARPANET became the Internet
- The Pentagon's first "information warfare" exercise, known as 'Eligible Receiver', found that industrial and information systems throughout the US are vulnerable to cyberattacks

2000's

- The amount of digital information surpass the amount of all information created in human history
- Cyberspace accelerated its expansion with the number of devices over 12.5 billion due to IoT

2010's

- Scientist conclude that the cyber-universe is complex and well beyond anyone's understanding
- Some of the largest hacks in history (Target, Marriott, Yahoo)

155.8 million individuals are affected by data exposure in the US
-Joseph Johnson, Mar 3, 2021, Statista

NEED for FORSIGHT

BECOME A *Cyber*FUTURIST

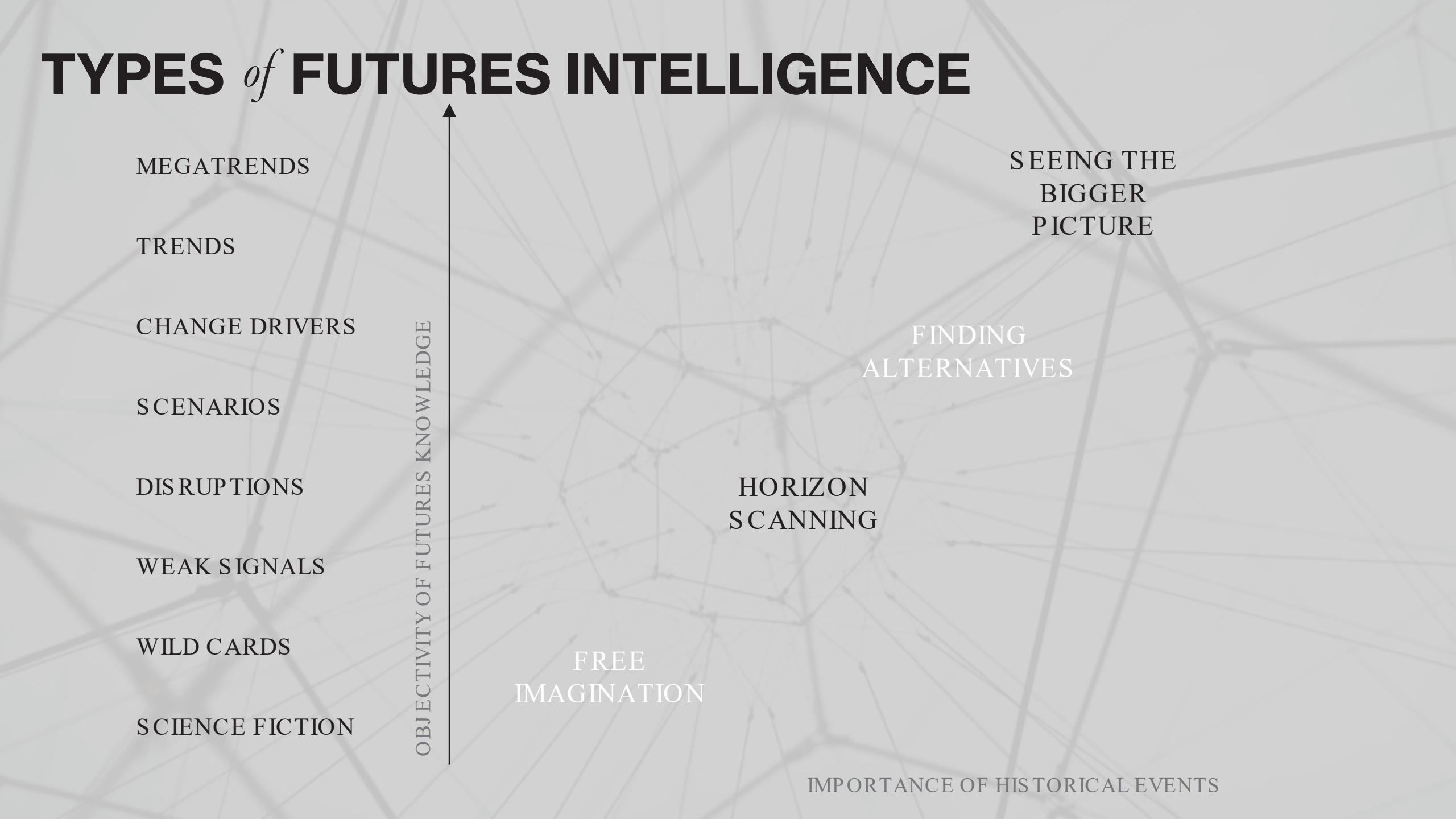
INTELLIGENCE

SCOPE

METHODS

APPROACH

TYPES *of* FUTURES INTELLIGENCE



Cyber FORESIGHT SCOPE

AREA	QUESTIONS TO ASK
TARGET OUTCOMES AND DELIVERABLES	Which will most likely produce the deliverables expected from the foresight activity?
FORESIGHT INTENTIONS	Is the objective to diagnose a current state, or to prognose or prescribe a future state?
FORESIGHT TIMEFRAME	Is this activity listening or planning for Short-Range (1-3 Years), Mid-Range (5+ Years), or Long-Range (10+ Years)
ACTIVITY TIMEFRAME	How long can our team dedicate to this foresight activity? – One Week? Three Months?
REQUIRED RESOURCES/SKILLS	What access does the project have to administrative support, data available on the subject, expert participants, financial resources?

CYBER*foresight* METHODS

ENVIRONMENTAL ANALYSIS FRAMEWORKS

Systematically explore a chosen environment with the goal of detecting signals of incoming change that could significantly impact the future.

STEEP
Socio-cultural, Technological, Economic, Environmental and Political

PESTLE
Political, Economic, Socio-cultural, Technological, Legal and Environmental

TREND ANALYSIS

Risk or Security concerns related to an emerging pattern of change.

HORIZON SCANNING
Identification and monitoring of trends

TREND IMPACT ANALYSIS
Measurement of a potential megatrend's impact.

SCENARIO MODELING & ANALYSIS

Exploratory tools to think about possible, desired or undesired futures

VISIONING
Envisioning the ideal future to create a strategy to achieve specific goals.

GAMING
Roleplay scenarios to test possible strategies or solutions

CYBERSECURITY ANALYSIS METHODS

Assess risk and potential future threats, incidents and crisis scenarios

TARA
Threat Agent Risk Assessment - used to identify, assess, and prioritize risks

OCTAVE
Operationally Critical Threat, Asset, and Vulnerability Evaluation - a comprehensive evaluation method to identify, rank, and manage cybersecurity risks

RESEARCH GROUPS

The assembly of cyber and adjacent departments or external partners to capture and analyze trends and scenarios

DELPHI METHOD
A Military created qualitative research approach built by leveraging foresight professionals

GROUP-BASED FORECAST
Assembles individual's experiences into consistent and collective judgements

REGRESSION ANALYSIS

A prescriptive foresight approach through event regression and system decomposition

MORPHOLOGICAL ANALYSIS
Explores complex problems and possible solutions using a multi-dimensional matrix.

BACKCASTING
Exercise that raises awareness of the fact that the future is determined by many factors and that different actions lead to various alternative outcomes

CYBERFORSIGHT APPROACH

ANALYZE
STEP 1

FIND CHANGE
STEP 2

FIND DRIVERS
STEP 3

FIND CYBER IMPACT
STEP 4

PRIORITIZE
STEP 5

New-age RESILIENCY EXERCISES

ESTABLISH RISK APPETITE

PENETRATION TESTING

TABLE TOP EXERCISES

INCLUDING EXECUTIVES, BOARDS OR EXTERNAL PARTNERS

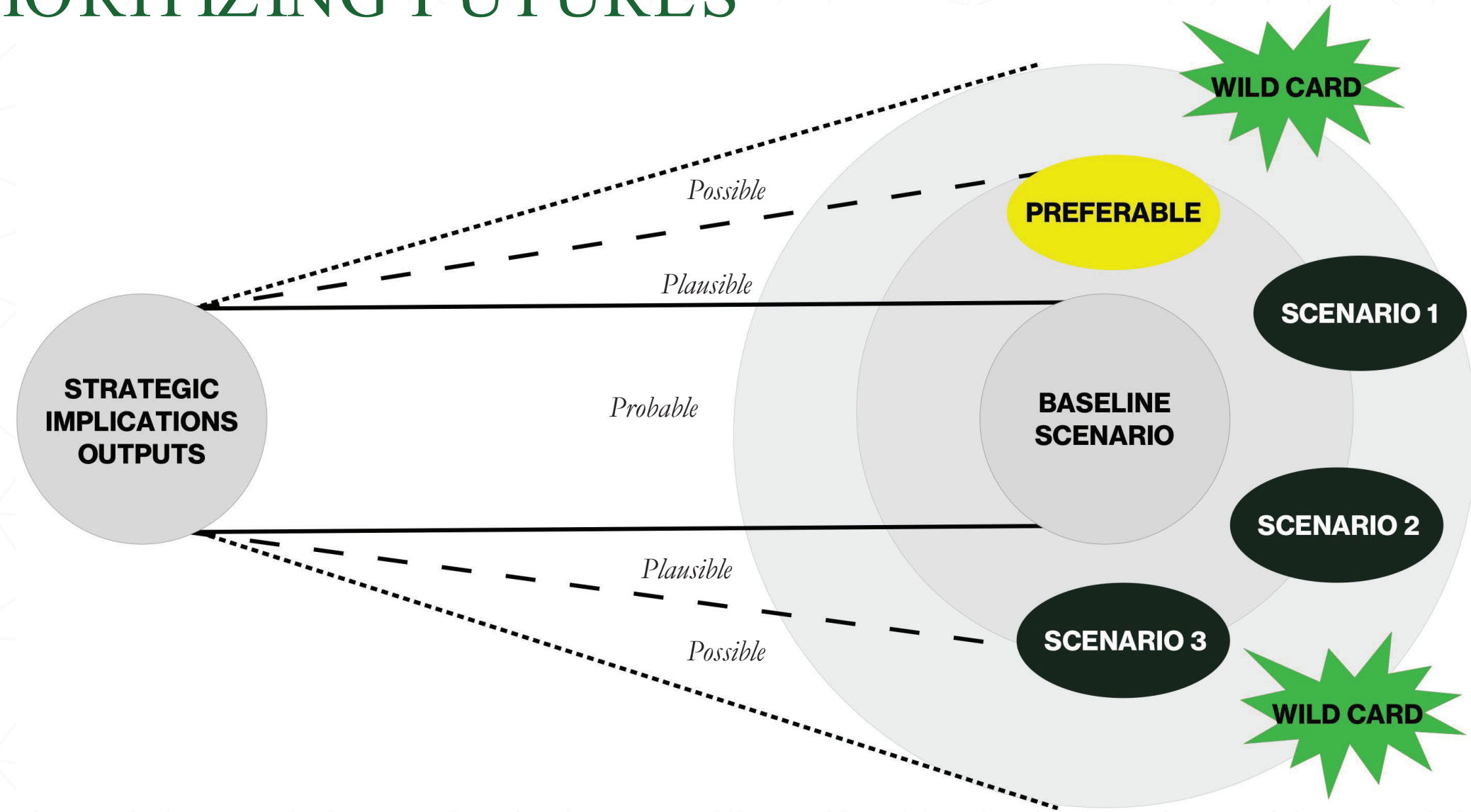
REVIEW PLANS

(BUSINESS & SERVICE CONTINUITY PLANNING)

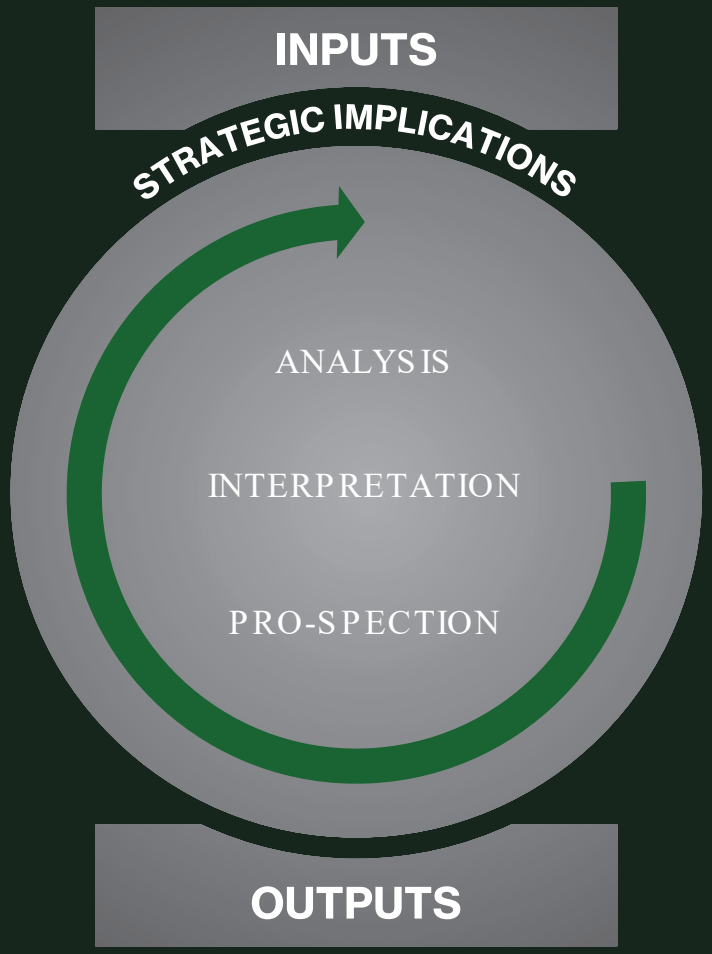
STRATEGIC IMPLICATIONS EXERCISES

HARDENS SECURITY RESILIENCY

PRIORITIZING FUTURES



FORESIGHT *to* STRATEGY



What's happened or happening?

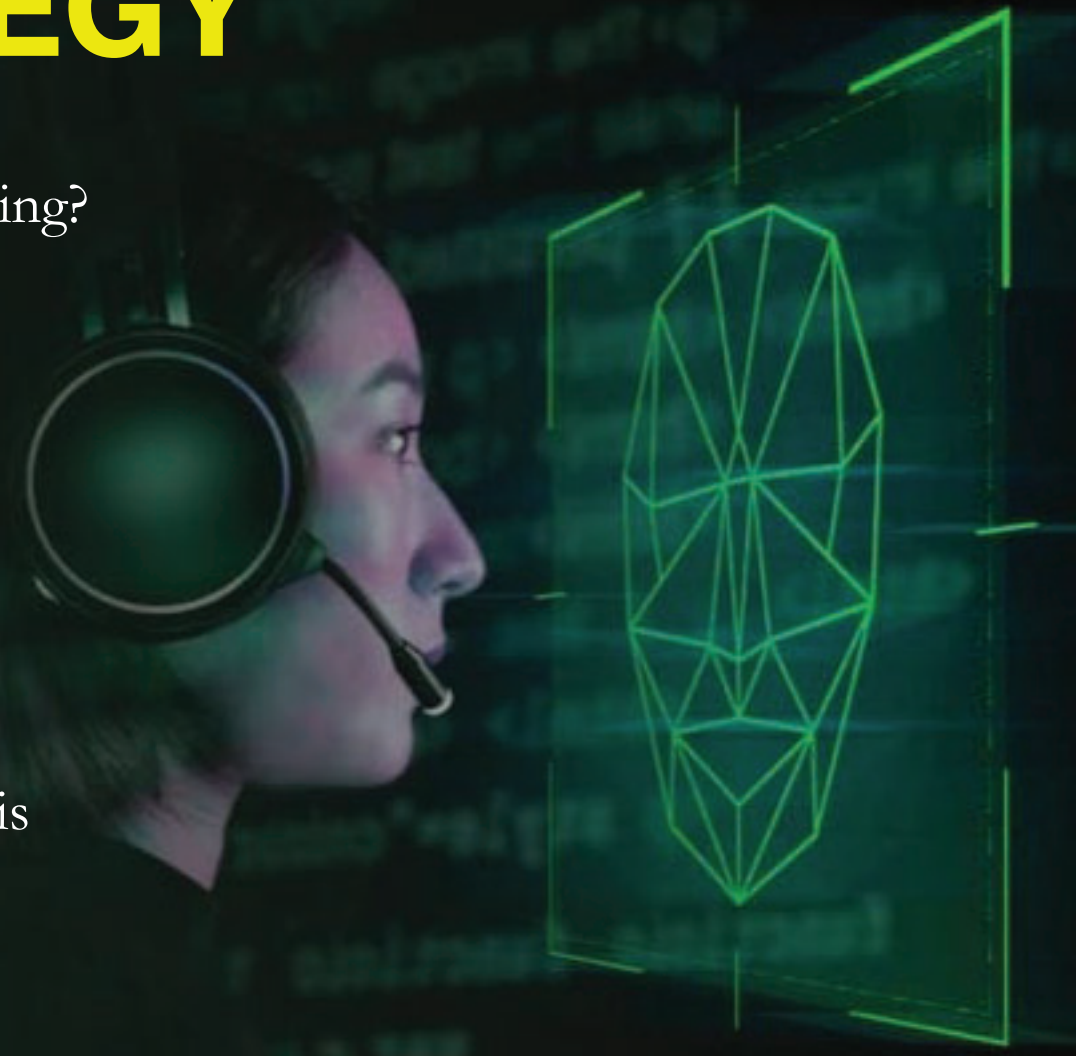
Why is this happening?

What's *really* happening?

What impact could it have?
What is the likelihood of this happening

What should we plan for?

What will we do to plan and prepare?



Key TAKEAWAYS

- Foresight can be an asset to the cybersecurity community
- Foresight is flexible and must be adapted for each activity
- Foresight helps improve understanding and communication

Any QUESTIONS

THANK *you*

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