



Defending Global Interests

DoD Strategic Multilayer Assessment

June 26, 2019

01

Listen for weak signals at the fringe

Make observations and harness information from the fringes of society or a particular research area.

02

Use CIPHER to see patterns

Uncover hidden patterns by categorizing information from the fringe: contradictions, infections, practices, hacks, extremes, rarities.

03

Identify trends

Ask the right questions to determine whether a pattern is really a trend.

04

Calculate the ETA

Ensure that the timing is right for the trend and for your organization.

05

Write scenarios

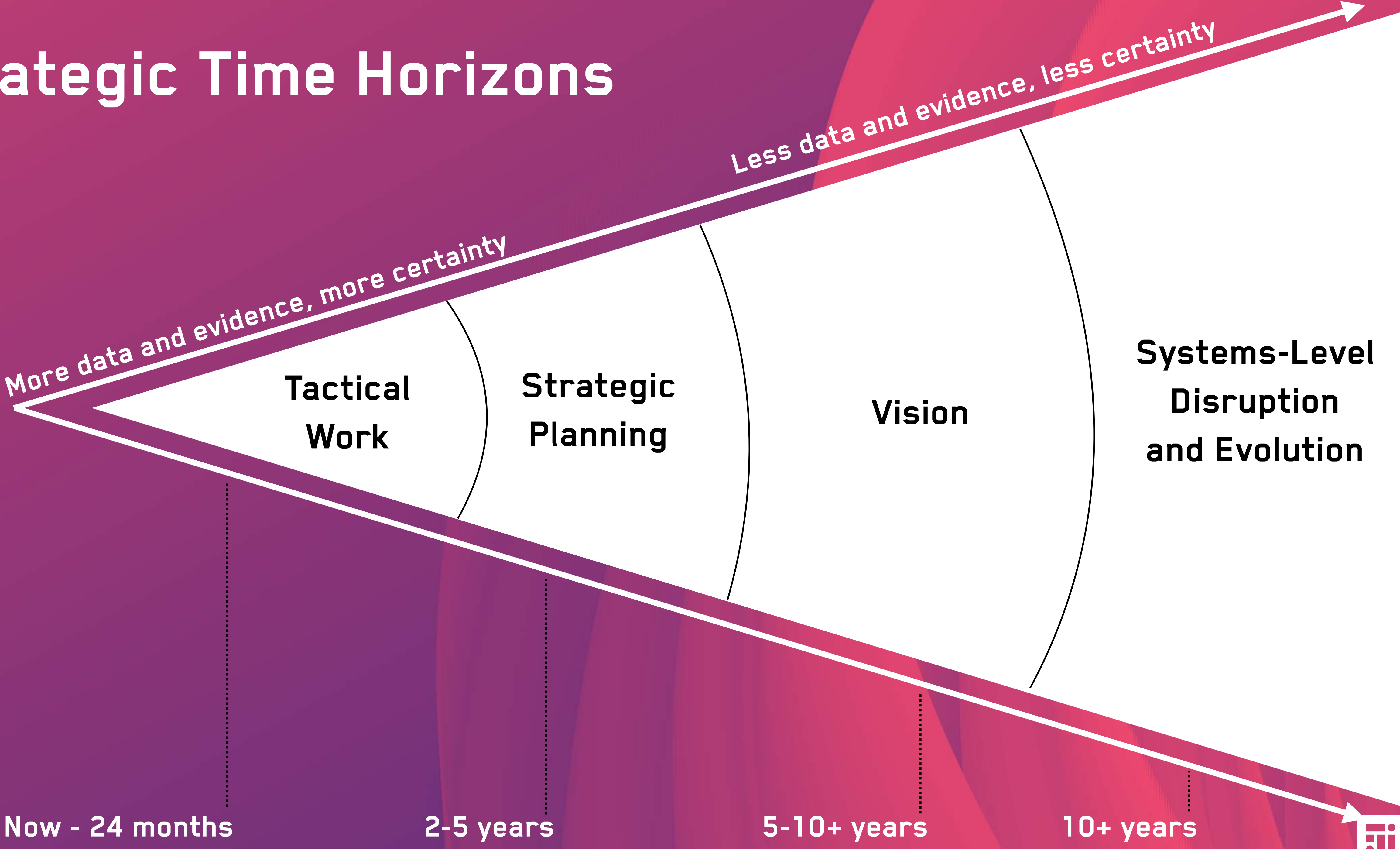
Scenarios inform the strategy you will create to take the necessary action on a trend.

06

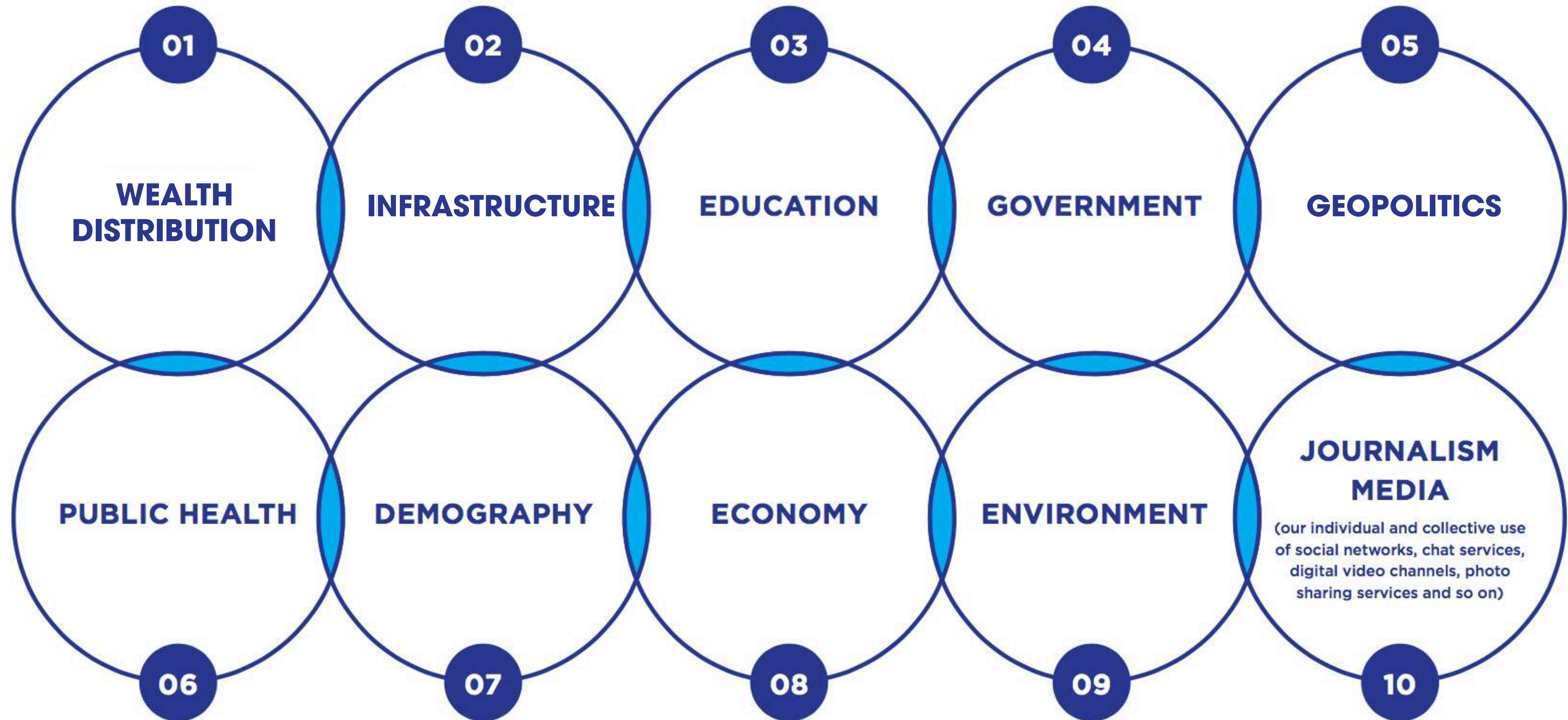
Backcast preferred outcomes

Mitigate deep uncertainty and future risk by reverse-engineering your organization's desired outcomes.

Strategic Time Horizons



10 Sources of Disruption

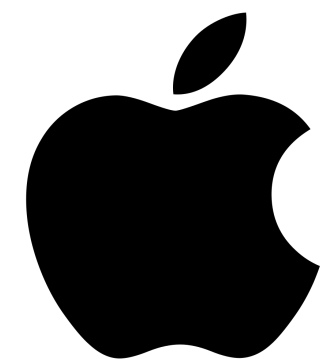
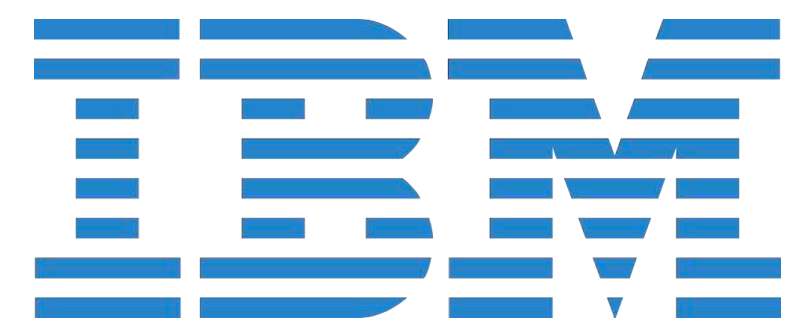


Today

- **AI developing on two different tracks with different outcomes**
- **Current and future strategic vulnerabilities**
- **Recommendations**



AI's Big Nine



United States: Assessment

- **Three epicenters of power: Government, Tech, Finance**
- **In a free market, commercial success drives decisions.**
- **US government (non-DoD) is not funding AI comparable to Tech epicenter.**
- **Of the three epicenters, Tech has the most leverage today. There are no regulatory or financial incentives to fix current known issues.**
- **US government did not develop a national strategy or PoV for critical technologies at important times: AI, also genomics**
- **US has no country-wide norms and standards. Haphazard approach to data regulation and use; strategic disadvantage for government.**



Near-Horizon Developments

Emotion Recognition - Amazon

- Alexa detects our emotional and behavioral states
- Cough, sneeze, sniffles
- Tone of voice
- Volume, cadence of our speech
- Relative to our individual baseline speech

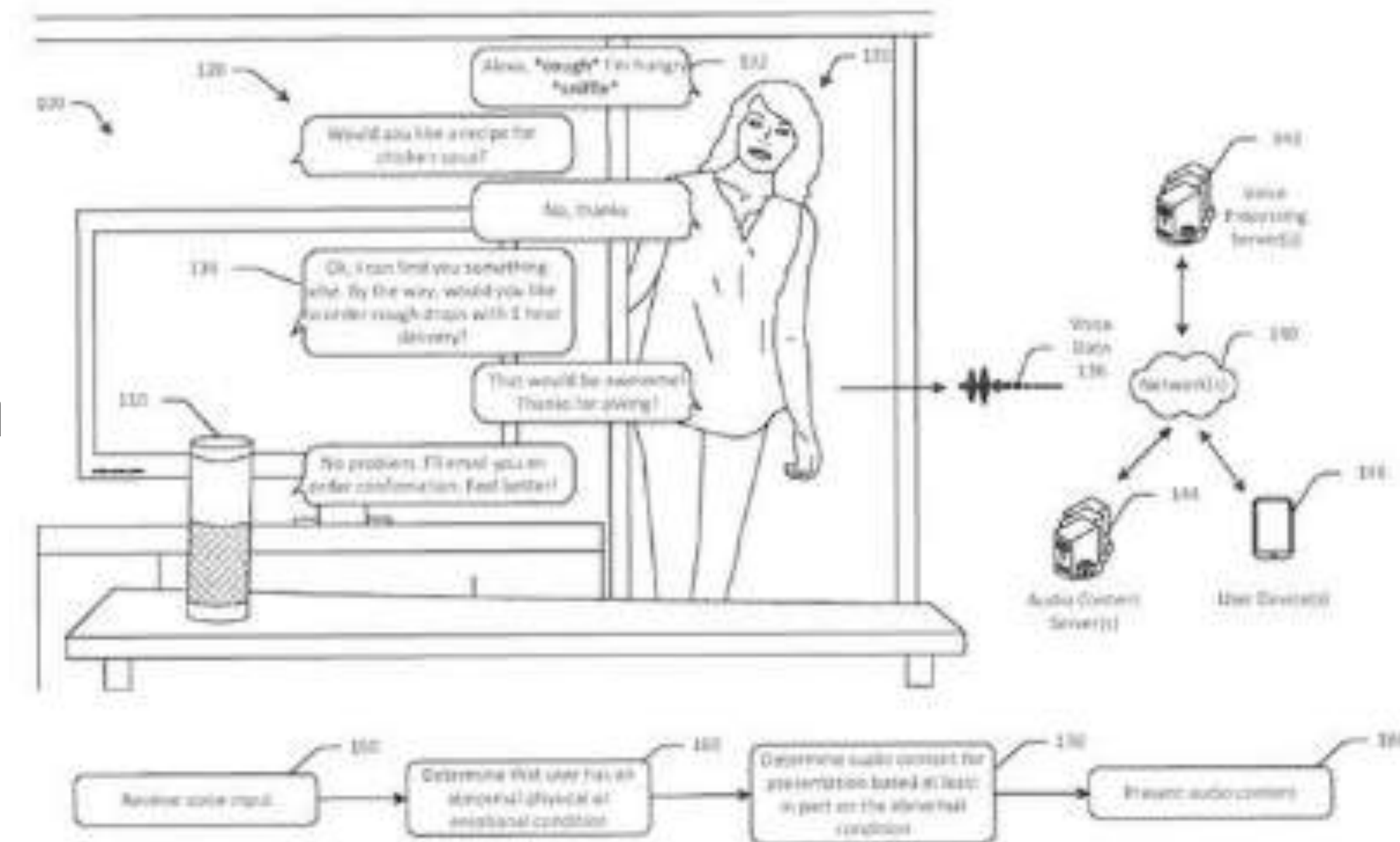
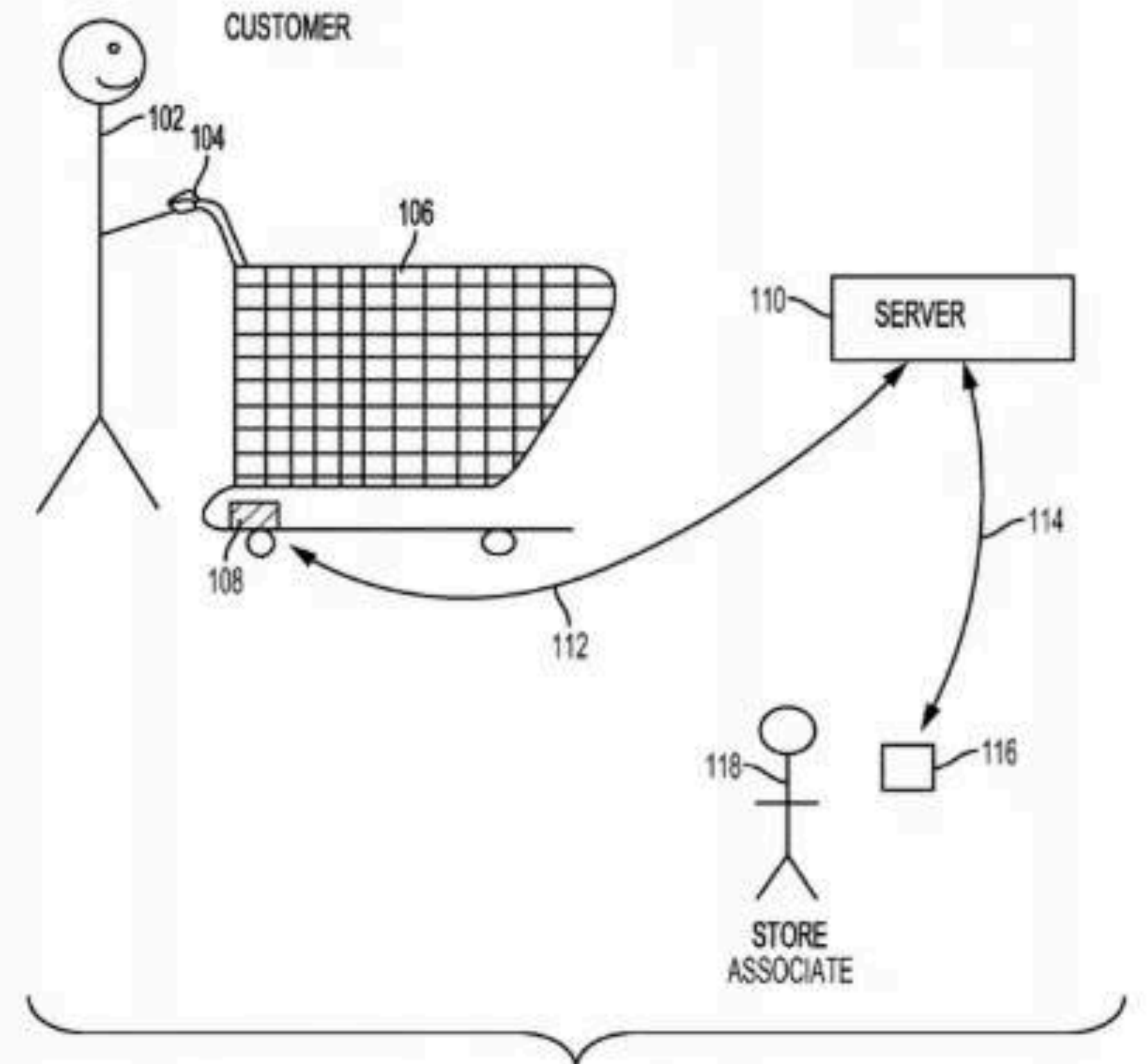


FIG. 1

Near-Horizon Developments

Persistent Recognition - Walmart

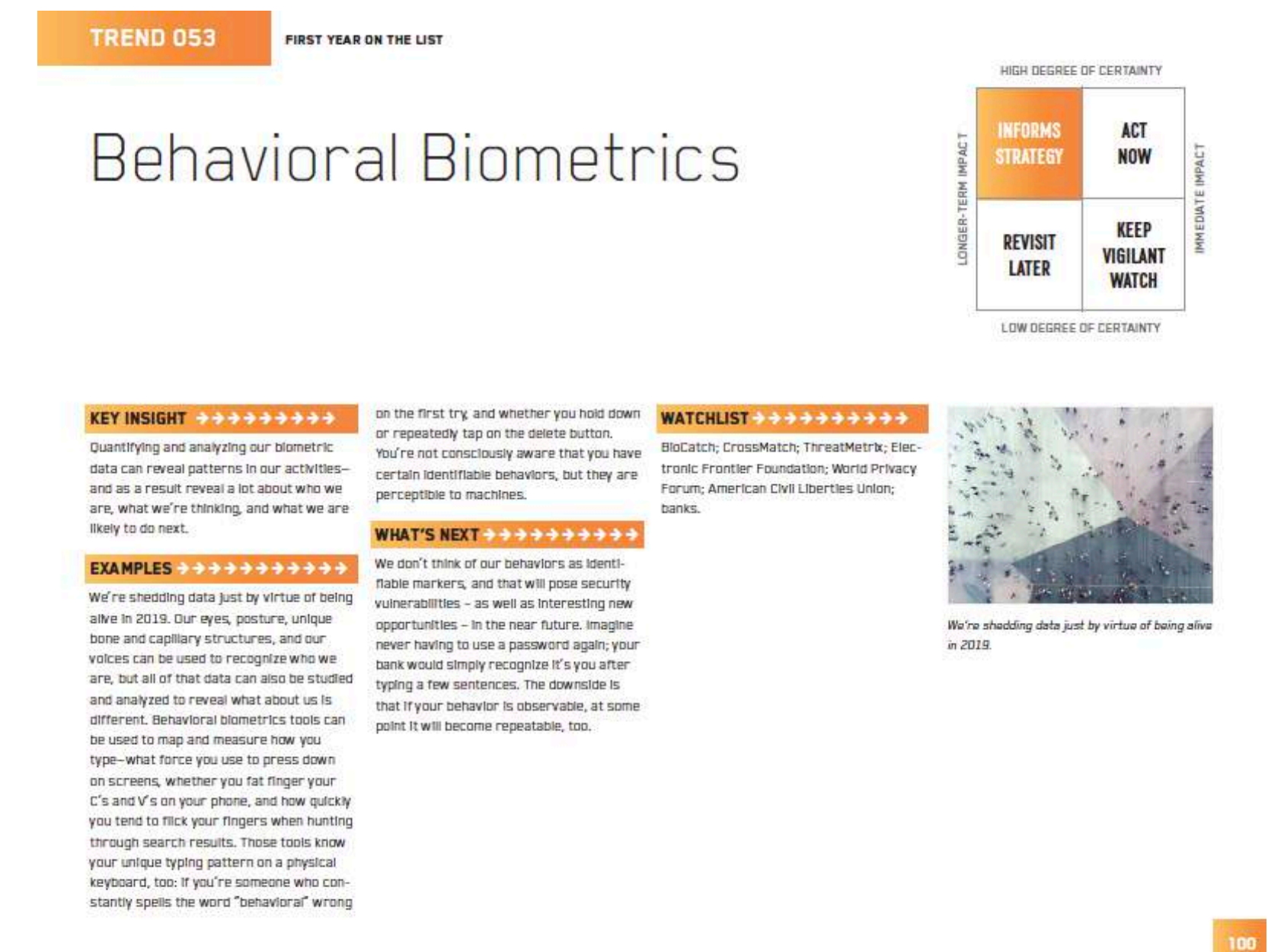
- Shopping carts: Measure your baseline biometric data
- Mine your temperature, heart rate, speed and force as you push the cart around store
- Compare your data over time
- Alert store assistant if you're frustrated/angry/ having a panic attack



Near-Horizon Developments

Behavioral Biometrics

- Mine 100s of unique biometric data points
- Compare against our individual baselines
- Use ML/ DL to learn and understand
- Authenticate/ nudge/ reward/ punish us



Near-Horizon Developments

Universal Genetic Databases

- Rush to buy/ house our genetic data
- Structure biometric data: easy search
- 3rd parties using biometric data without our consent
- Some countries want to create universal genetic databases to track citizens



Near-Horizon Developments



Miquela Sousa - Synthetic Content

- 1.6 m Instagram followers
- 19 years old
- Brazilian-Spanish heritage
- Singer-songwriter
- Model (Prada, Calvin Klein)



Near-Horizon Developments

Detailed Mapping - Amazon

- Capturing individual weeds, texture on pavement
- Detail within millimeters
- Generating virtual environments for testing



Near-Horizon Developments



United States: Vulnerabilities

- Private sector prioritizes speed over safety.
- New platforms don't necessarily meet established regulatory definitions.
- Synthetic content manipulating strategic allies, decision makers.
- Evolution of PII to PDRs.
- New battlefield fronts: grocery stores, bathrooms.
- US government has not prioritized AI outside of future of work initiatives
- US government will never move at the speed of technology
- Breaking up "big tech" could cause critical security problems downstream.



China: Assessment

- **Baidu, Alibaba and Tencent: Loyal to the CCP**
- **President Xi has consolidated power. Virtually no data restrictions.**
- **China's government is funding AI at significant rates.**
- **Beijing has a strong national strategy and PoV for critical technologies, including AI.**
- **State initiatives: Thousand Talents Program; Belt & Road Initiative**
- **Chinese specialty companies are best-in-class: SenseTime, Huawei, ZTE**
- **China is a militaristic, diplomatic and economic pacing threat to the US and allies.**



Near-Horizon Developments

SenseTime - Computer Vision

- Best-in-class computer vision
- Face, posture, gait
- Object recognition: roads
- Building sensors for Honda



Near-Horizon Developments

Universal Genetic Databases

- Rush to buy/ house our genetic data
- Structure biometric data: easy search
- 3rd parties using biometric data without our consent
- Some countries want to create universal genetic databases to track citizens

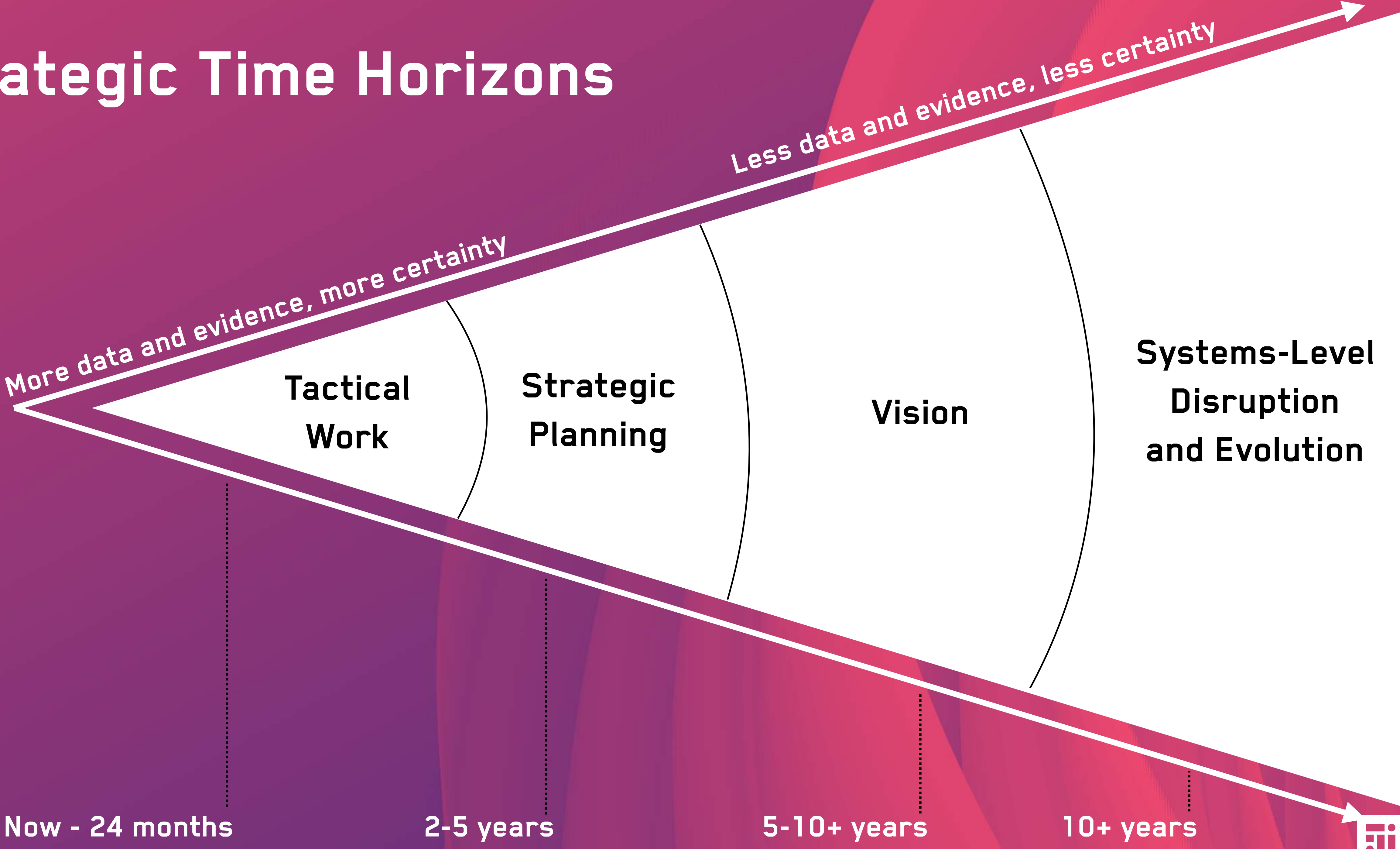


China: Strengths

- One-third of the world's population lives under authoritarian rule.
- Early success with Social Credit Score: millions now under restrictions.
- Chinese tools enables surveillance, censorship, cyberattacks, biometric data attacks, restricting connectivity
- China does not need contiguous territory to build a coalition.
- Billions of people under a "One China" economic model could cripple the US and allies.



Strategic Time Horizons



Recommendations For This Group

- **SYSTEMS LEVEL EVOLUTION** → Broaden concept of US military readiness: future wars will be economic in nature, fought in code.
- **VISION** → Broaden the scope of research to include 10 Sources of Disruption. Confront deep uncertainty in AI; also AI as it relates to other areas of development: genomics, space, autonomous transit.
- **STRATEGIC** → DoD should model opportunity as well as risk, to better understand private sector motivations and decisions.
- **TACTICAL** → Develop a next-gen ROTC program: AI, game theory, economics
- **TACTICAL** → DoD should develop meaningful, friendly relationships with tech sector.



Broader Recommendations

- Evaluate China holistically; understand the connections between strategic initiatives and newly-forming alliances. Do not count emerging markets out.
- Formation of an international coalition: Global Alliance on Intelligence Augmentation (GAIA). Economic sanctions are drivers.
- Reinstate the Office of Technology Assessment or build something new.
- Shift budget priorities within congress to include basic research.
- Prepare now for next-gen cyber attacks, especially cloud.



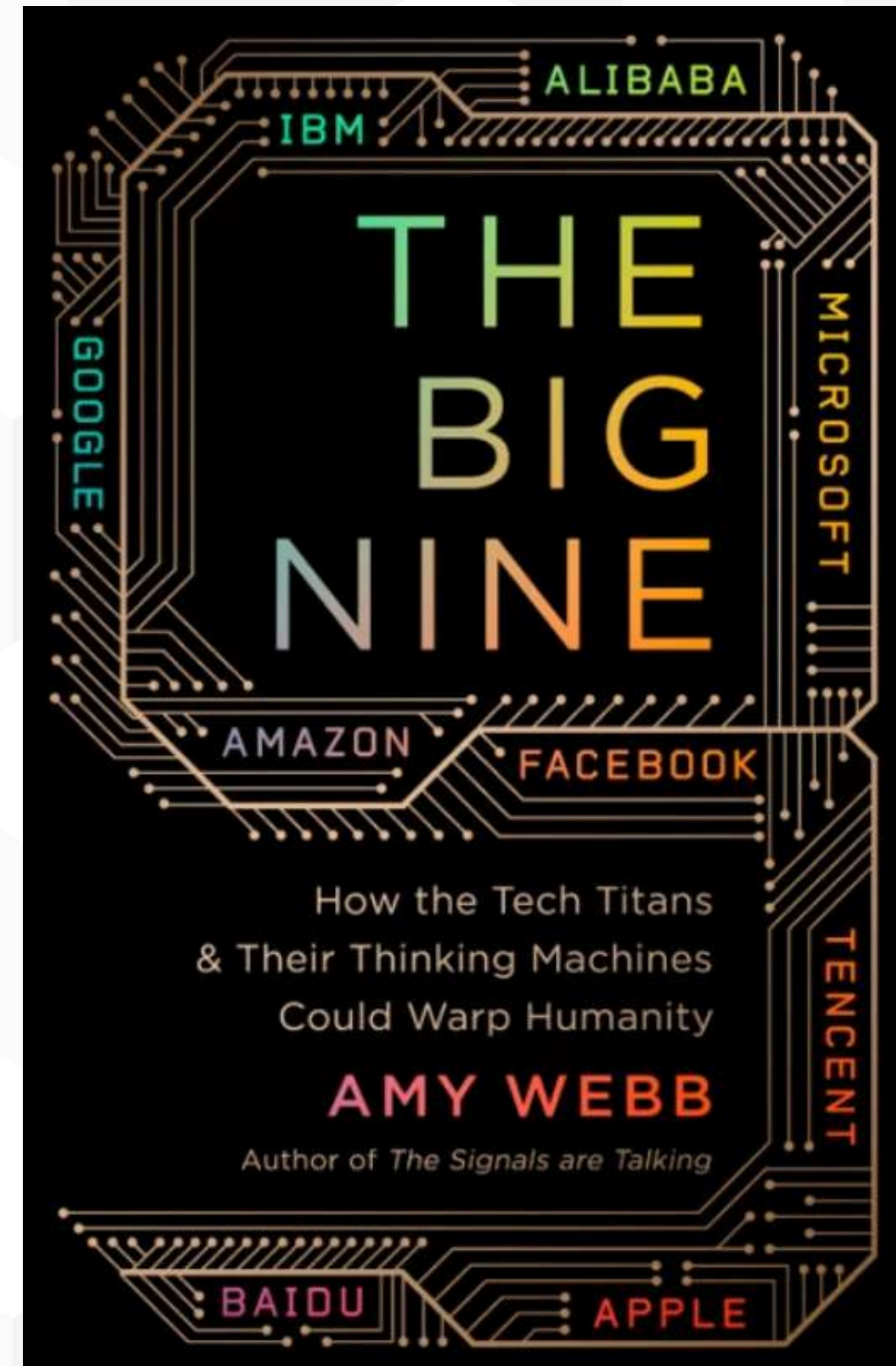
THE SIGNALS ARE TALKING



WHY TODAY'S FRINGE IS
TOMORROW'S MAINSTREAM

FORECAST AND TAKE ACTION ON TOMORROW'S TRENDS, TODAY

AMY WEBB



Amy Webb

Future Today Institute

amy@futuretodayinstitute.com