

Foresight Analysis

The Art & Science of Looking at the Future



Bay Area Community Council

Foresight Webinar #2

October 16, 2020

Facilitator

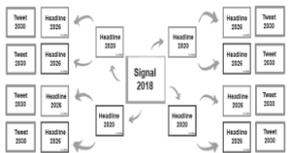
Garry Golden

BACC Journey



*Kickoff
Sept 18th*

*Foresight 101
Scanning*



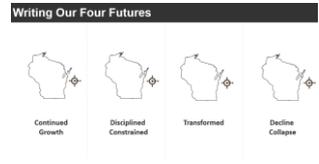
*Webinar #1
Oct 2nd*

*Signals Work
Futures Wheel*



*Webinar #2
Oct 16th*

*Era-transitions
Scenarios*



*Webinar #3
Oct 30th*

*Four Futures
Roadmaps*



*Presentation
Nov 20th*

Cool Stuff

50 BREAKTHROUGHS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50										



HEAT MAPS

Difficulty of Deployment vs. Time To Market

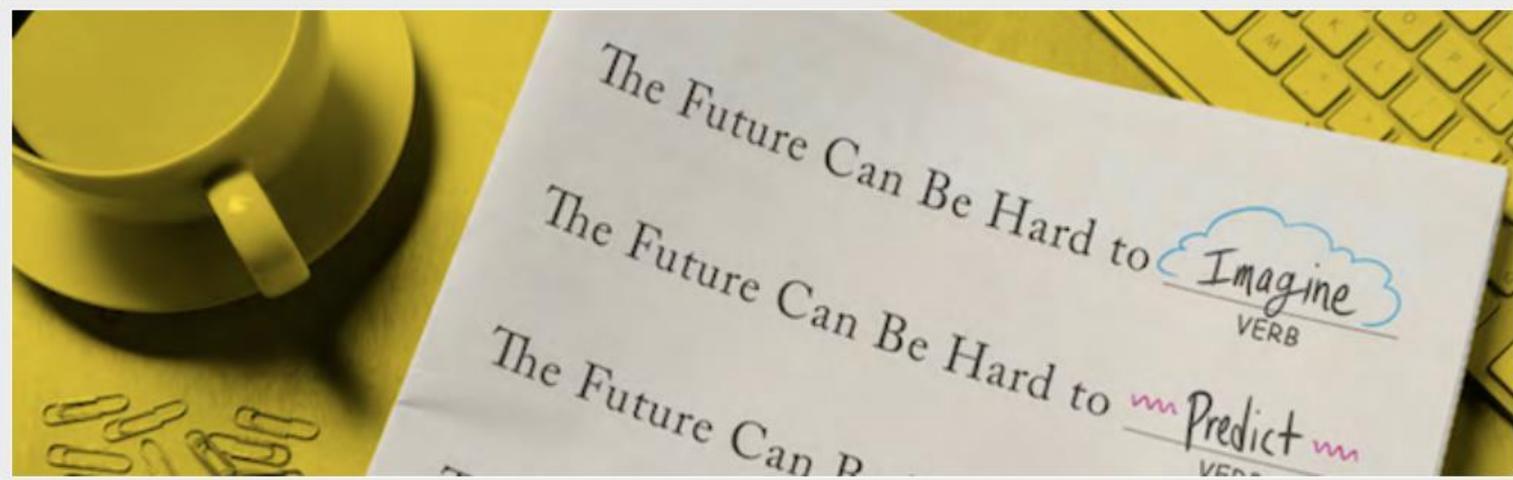
Commercial Potential vs. Time to Market

Development Stage Comparison

Explore the breakthrough technologies required to achieve the SDGs by 2030

- WATER SECURITY
- FOOD SECURITY
- EDUCATION
- GENDER EQUITY
- HUMAN RIGHTS
- GLOBAL HEALTH
- DIGITAL
- ACCESS TO
- RESILIENCE TO
- EMERGING

IFTF – First 5 Minutes



The First 5 Minutes of the Future

What will you do when the next “unthinkable” change happens?
Play this game to find out.

First 5 Minutes Examples

Day One: The Shutdown

You're at home. You realize that the Internet is out. You have no cell phone service. If you check, you notice nothing is broadcasting on TV or radio. Even though the electricity is working, it's as if all telecommunications have suddenly stopped.

- What actions do you take in the first five minutes after discovering this?
- How do you feel?
- What possible explanations do you come up with for what's going on?
- What do you predict other people might do when they discover the same thing?

Take five minutes — and five minutes only — to free write your answers. *Freewriting* means put down whatever comes to mind, as quickly as you can. Don't edit yourself. Just let the ideas flow.

And **be as specific as you can!** Include details about what you see, hear, and feel. Describe the weather, the light, the time of day, the room or space around you, who else is with you, what you say to each other. Make the scene as vivid and detailed as possible.

Day Three: The Surveillance Shoe

Your workplace sends you a pair of smart shoes it would like you to wear as a condition of employment. Each shoe has sensors in it that track your location, activity, weight, and social proximity (who you are standing near or walking by). It also detects air quality and viruses like SARS-CoV-2.

If more relevant to you, imagine that your kid is given and asked to wear a similar smart shoe as a condition of attending their school. Or, that your local government is giving away the shoes for free as part of a public health strategy.

- What actions do you take in the first 5 minutes after being informed of the new "Smart shoe" policy?
- How do you feel?
- What motivation do you ascribe to your employers (or the school, or the government)?
- What do you predict other people might do when asked to wear these shoes?
- What is one real action you could take in the new few days or weeks to feel more prepared for the first 5 minutes of this scenario, if it were really to happen?

IFTF Ethical OS Toolkit



<https://ethicalos.org/>



Ethics: Integration of Indigenous Principles

INDIGENOUS AI



Indigenous Protocol
and Artificial Intelligence
Working Group

Indigenous Protocols &
Artificial Intelligence

WAIE2020

Suzanne Kite
Research Assistant, Initiative for
Indigenous Futures

Dr. Melanie Cheung
Research Director
14 Future One @ Metabolism

9:30

{ Recognition of Unseen; Spirits of AI Machines;
Data sovereignty for Seven Generations }

Indigenous knowledge meets science to solve climate change | Hindou Oumarou Ibrahim
71K views · 5 months ago



{ Principles: Respect, Relationality,
Relevance, Responsibility, Reciprocity }

What signals have you seen?



Signal: Social Activism / SJ + Brands

THE VERGE

Yelp will alert users when a business has been accused of racist behavior

The warning will link to a news article detailing the incident that prompted the alert

By [Kim Lyons](#) | Oct 9, 2020, 11:22am EDT



Business Accused of Racist Behavior

Recently, someone associated with this business was accused of racist behavior, resulting in an influx of people posting their views to this page. Racism is reprehensible and has no place on Yelp, and we unequivocally reject racism in any form. Read about the reports of racist behavior [here](#).

While we understand the desire to warn others about racist behavior associated with a business, all reviews on Yelp must reflect an actual first-hand consumer experience. We have temporarily disabled the ability to post here as we work to investigate the content.

If you're here to leave a review based on a first-hand experience with the business, please check back at a later date.

Got it, thanks!

Signal: Community-driven Solutions

CNN BUSINESS

Markets Tech Media Success Perspectives Videos

LIVE TV Edition

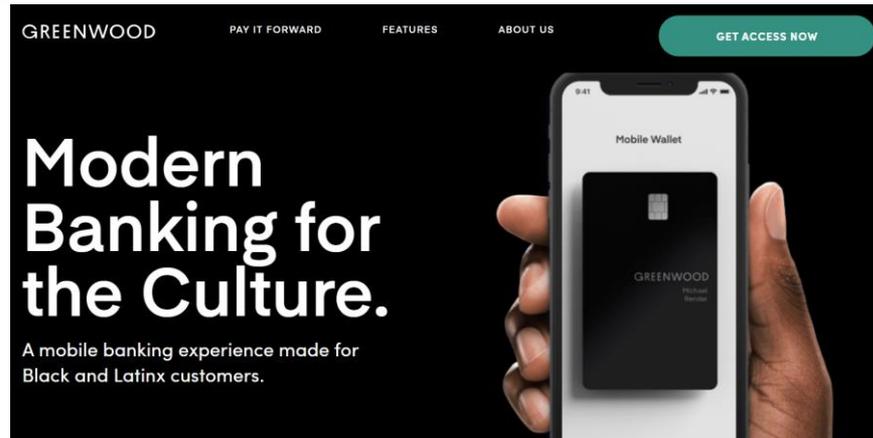


Killer Mike's new Black-owned bank receives 'tens of thousands' of account requests in less than 24 hours



By [Chauncey Alcorn](#) CNN Business

Updated 10:12 PM ET, Sun October 11, 2020



Signal: Wellness Culture for XYZ

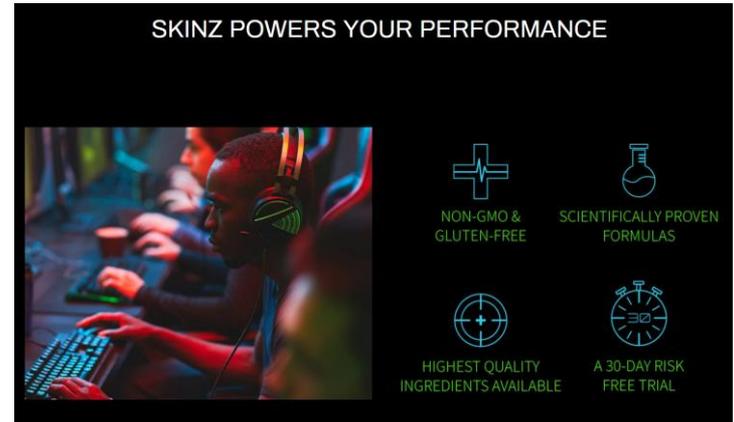
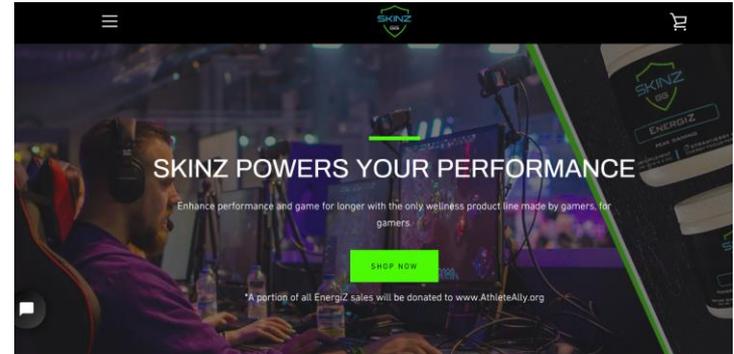
Skinz.gg Launches as the First Health and Wellness Company for Videogamers; Seeks to 'Power Your Performance'

-- Skinz.gg Creates and Develops Lifestyle Products, Services, Best Practices, and Education for the Nearly 2.6 Billion Gamers Across the Globe -

- Players of Videogames Can Suffer from Physical Pain, Discomfort, Anxiety, Lack of Focus, and Sleep Issues, Which Led Skinz.gg to Develop a Variety of Products Formulated to Power Gamers' Performance -

"Skinz.gg is the only company which creates products that are purposely-formulated to promote videogamers' health and wellness that powers their performance," said Natalia Sokolova, Co-Founder and CEO of Skinz.gg. "Our company uniquely sits at the intersection of dietary supplements and videogaming, which collectively accounts for a half trillion dollars or more in global spending annually. Skinz.gg impacts the entire videogamer market; our products and services are used by every type of videogame player, professional to casual, and across every type of gaming genre and device."

"As a Green Packers Hall of Fame inductee and a current collegiate esports coach, I see many parallels between the two," said Ahman Green, Coach of esports, Lakeland University. "The skill development and training for each are similar, but what's often overlooked is the mental and physical toll gaming can take. It's not uncommon for pro-gamers to train for 72-hours or more in a week, playing games that require them to make hundreds of hand movements in a minute. Skinz.gg is dialed into the unique needs of gamers, and invested in reducing the physical challenges they face to stay healthy, sharp and pain free. Skinz.gg's products help gamers do what matters most, perform at the highest level and win."



Signal: Embedded AI Inside Products

Adobe puts artificial intelligence tools into its marketing software

Adobe Inc said on Monday that it has put a new set of artificial intelligence tools into its digital marketing software with the aim of helping companies sharpen their marketing campaigns.

Once known for applications like Photoshop, Adobe has become one of the biggest providers of software for running such campaigns, which businesses use to decide which of thousands of images and pieces of written to content to show to potential customers. Growth in its marketing software division has helped send shares up nearly 50% this year.

Signal: Social Policy & Social Contract



San Francisco Will Pay Artists \$1,000 a Month in Universal Basic Income

The pilot program intended to assist the city's arts community during the pandemic is drawing both interest and criticism from proponents of unconditional cash transfers.

CHRISTIAN BRITSCHGI | 10.13.2020 12:30 PM

In an effort to assist the city's struggling arts community in bouncing back from the pandemic, Mayor London Breed announced last week that she'd be rolling out a cash transfer program for artists.

Under the mayor's plan, [130 artists in the city](#) will receive a \$1,000 monthly cash stipend for a period of six months starting early next year. It's one of several arts-themed policies sourced from the city's Economic Recovery Task Force [final report](#) released last Thursday, which also includes funding for "artists to paint murals with a public health theme on boarded-up businesses and deploy performance artists to promote COVID-safe behaviors in high foot traffic areas."

Signal: Push for Private 5G Begins



New (private) '5G+' ecosystem to spark \$4.5tn tech spend, \$8tn economic boom

 James Blackman •  October 12, 2020 •

 Share | 0

. For 'physical industry' read: the broad Industry 4.0 movement, effectively, plus a loosely-termed smart city landscape, capturing the public sector, transportation, and healthcare.

These incoming technologies — essentially, IoT sensing and AI sense-making tools, powered by edge and cloud infrastructure, and glued together by industrial-grade private 5G networks in most cases — will spark the “lion’s share” of ICT spending in physical industries, the study claims. Annual global ICT consumption is forecast to increase from \$2.8 trillion in 2020 to \$6 trillion by 2030.

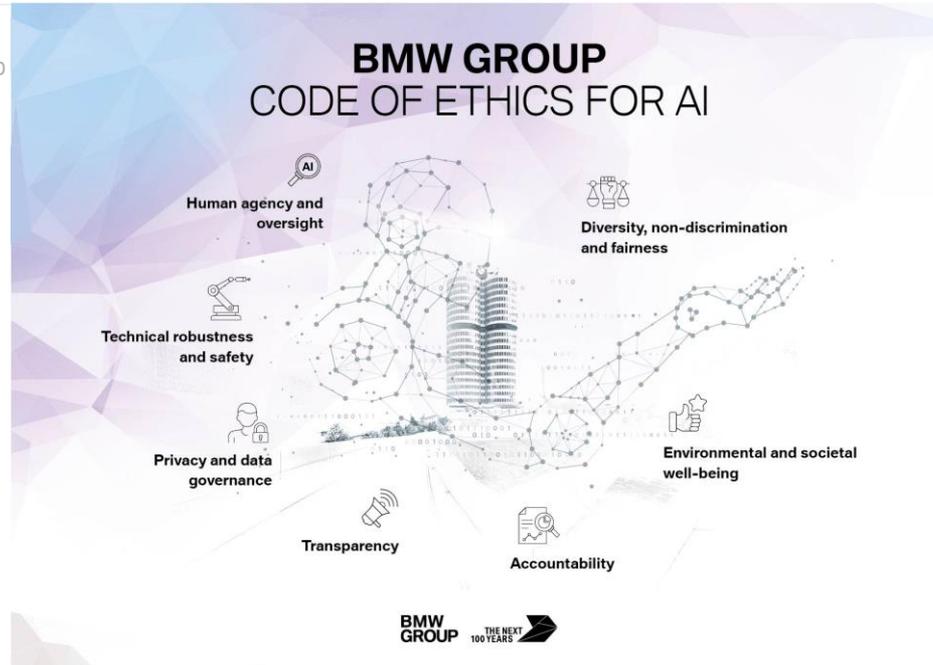
Signal: Ethics + AI

BMW writes code of ethics for AI in collaboration with the EU

Home » News » BMW writes code of ethics for AI in collaboration with the EU



Gabriel Nica
October 12, 2020



Signal: Place-based Health Strategies

Replacing asphalt with forest-type plants at daycare centers found to strengthen immune defenses in children

by Bob Yirka , Medical Xpress



Foresight 101: Scenario Thinking

Investigate

Identifying
& Monitoring Change

- Horizon Scanning
- Emerging Issues Analysis



Imagine

Exploring Implications

- Forecasts
(Trend Extrapolation)
- Scenarios**
(Alternative Assumptions)



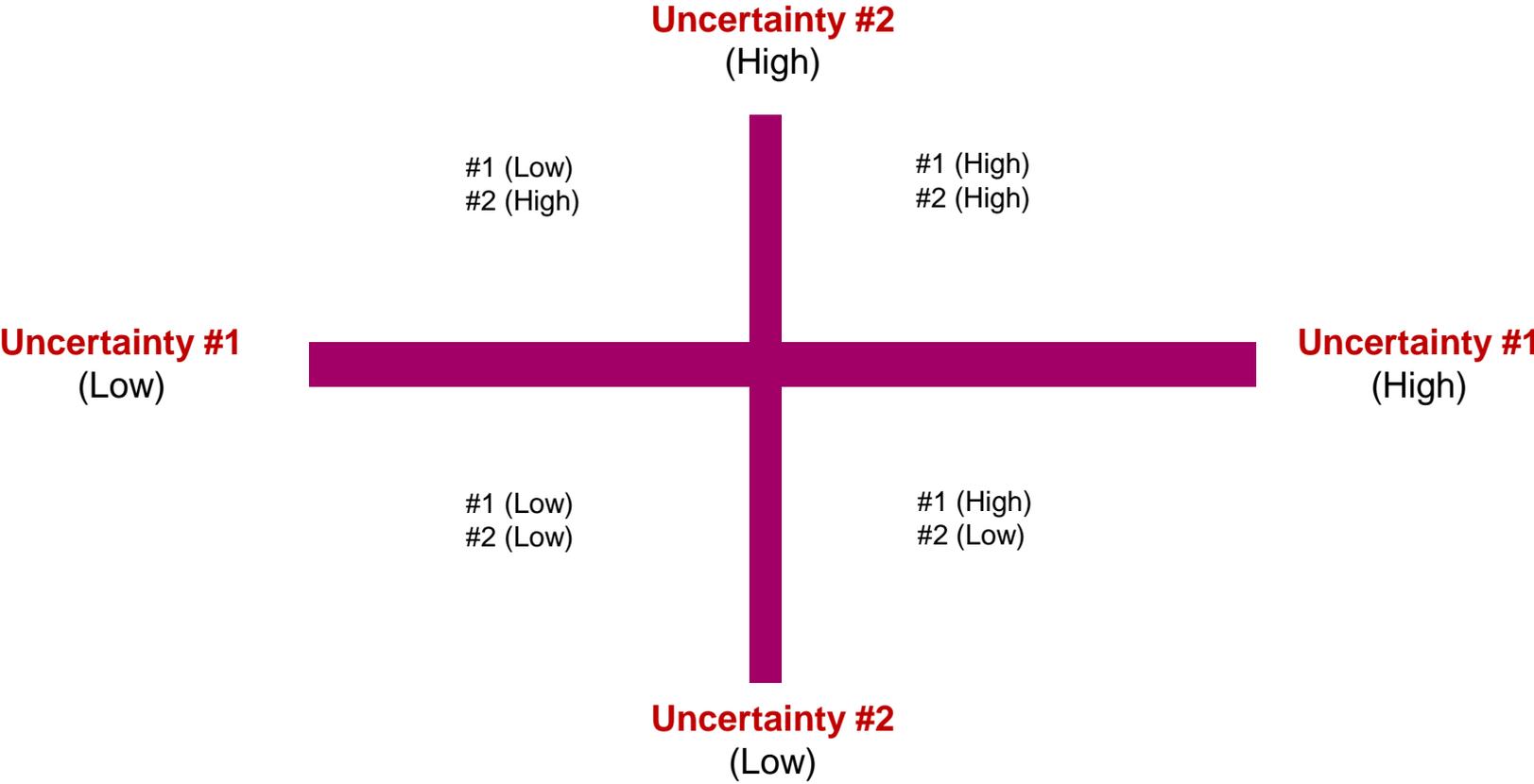
Inspire

Communicating the
Need for Change

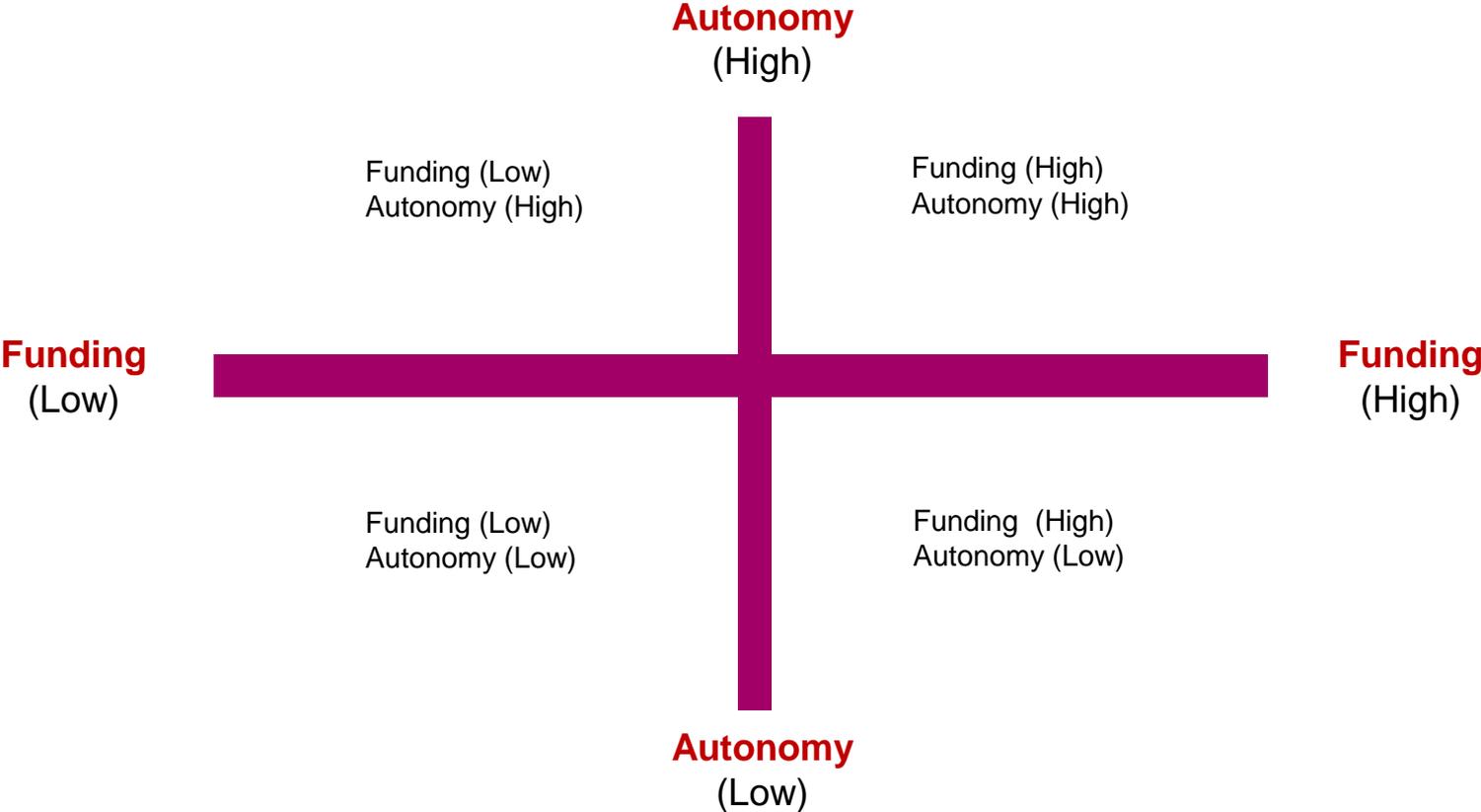
- Visioning & Planning
- Transformation Management



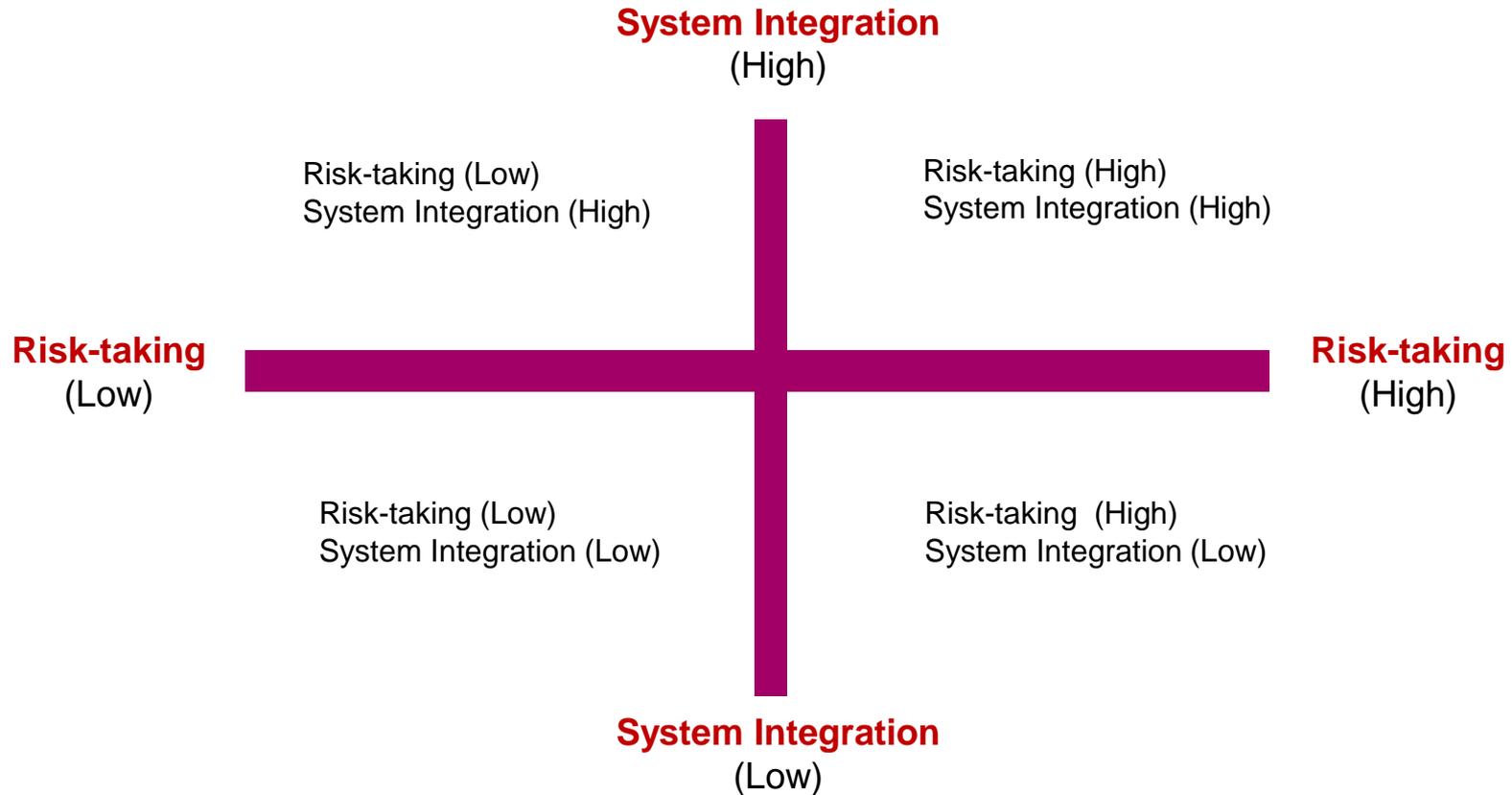
Scenario Thinking – Uncertainty Matrix



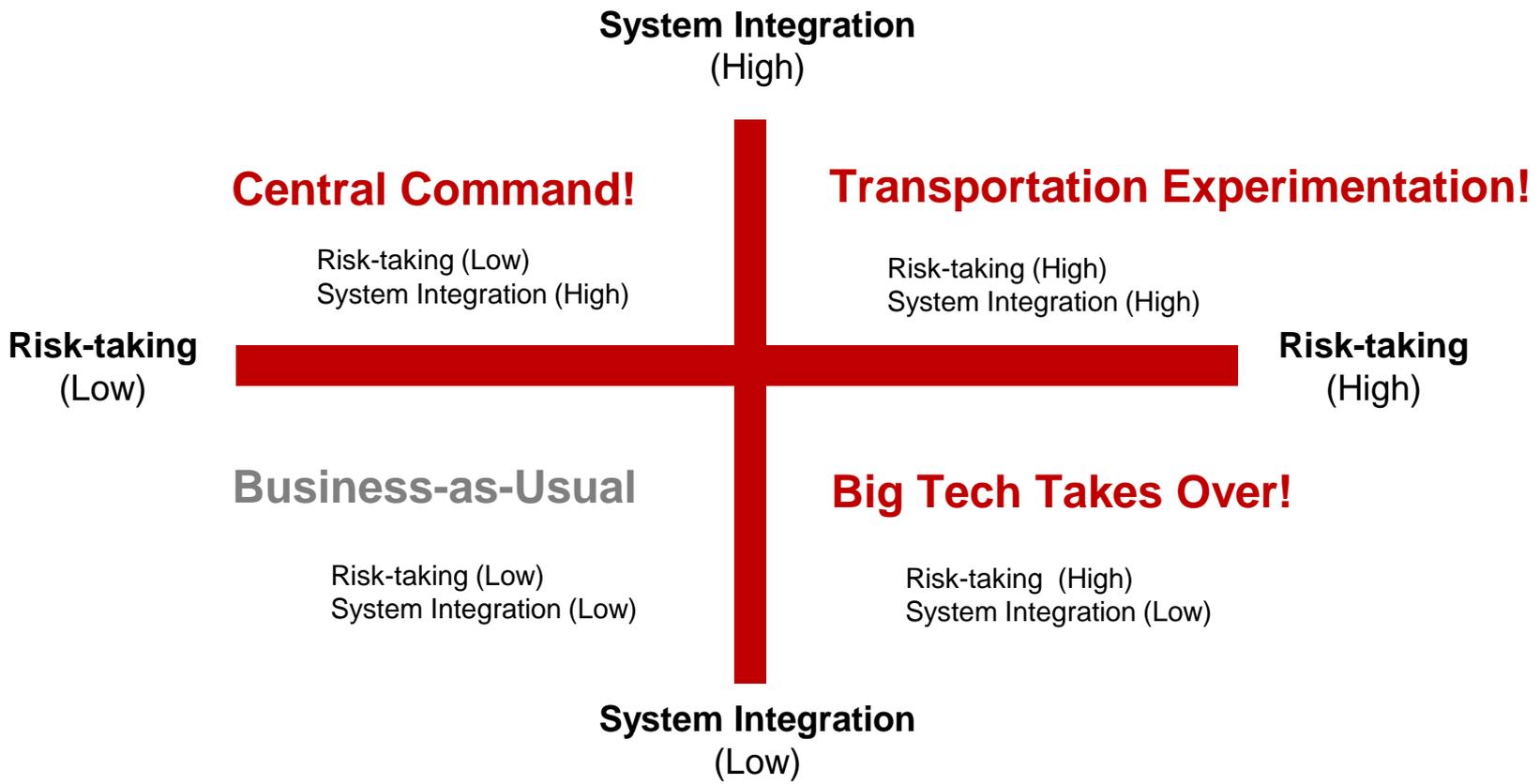
Uncertainty Matrix: Transportation Sector



Transportation Sector – Uncertainties



Scenario Thinking – Uncertainty Matrix



Scenario: Central Command

Central Command



- Risk-taking (Low)
- System Integration (High)

- Federal & Regional Coordination**
'Rebuild & Restore' = Workforce Programs
- Governments Coordinate WFH**
Keeping CBDs Alive; Workforce Flexibility
- Economic Development + Transit/Housing**
Goodbye Tax Breaks, Hello Access Credits

Scenario: Central Command

Central Command

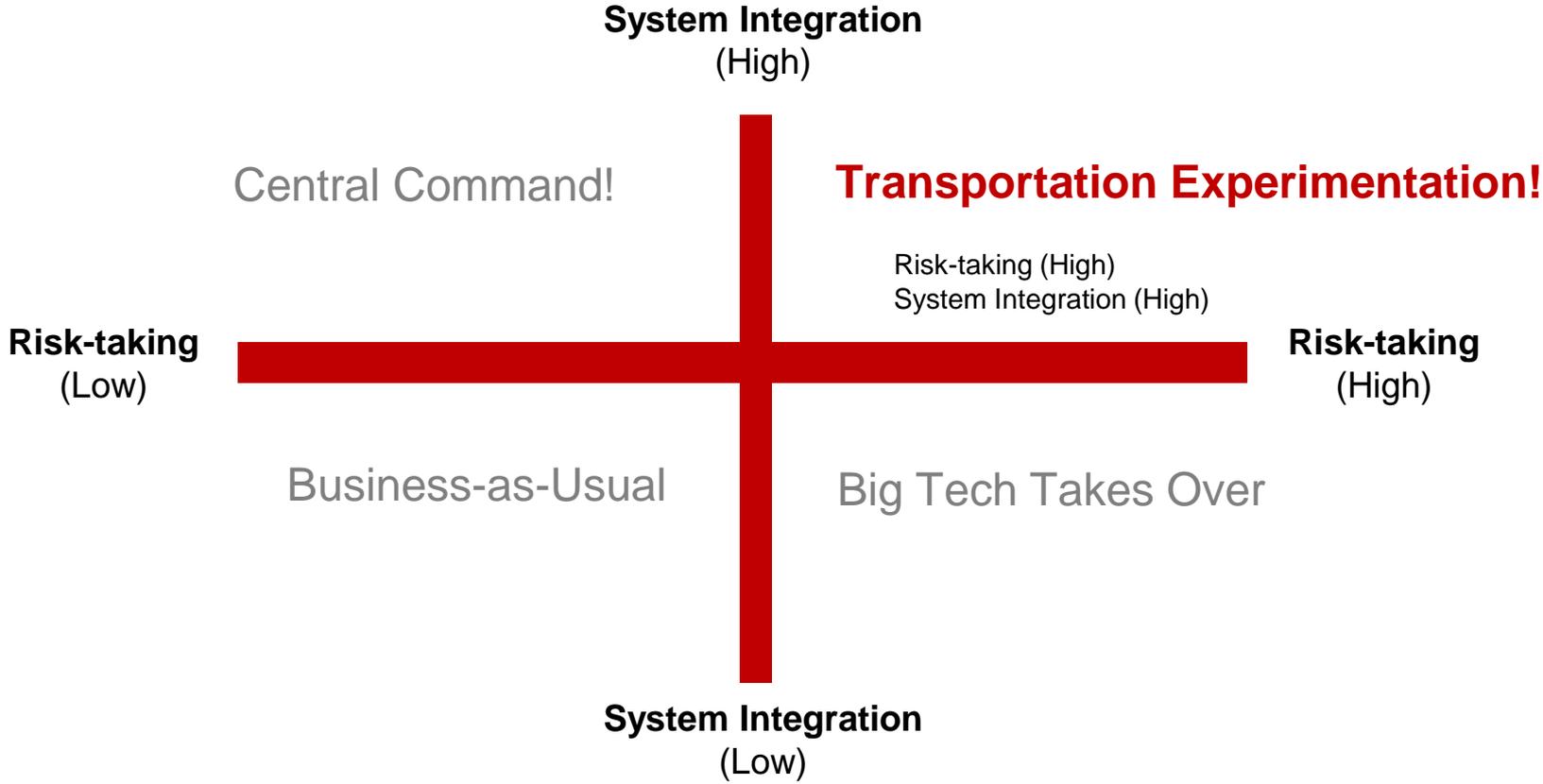


- Risk-taking (Low)
- System Integration (High)

Headlines from 2030s

- Transportation Sector Job Growth Outpaces Healthcare*
- Austin's I-35 Not Under Construction*
- Wealth Tax Replenishes Transit Budgets*

Scenario: Transportation Experimentation



Scenario: Transportation Experimentation

Transportation Experimentation

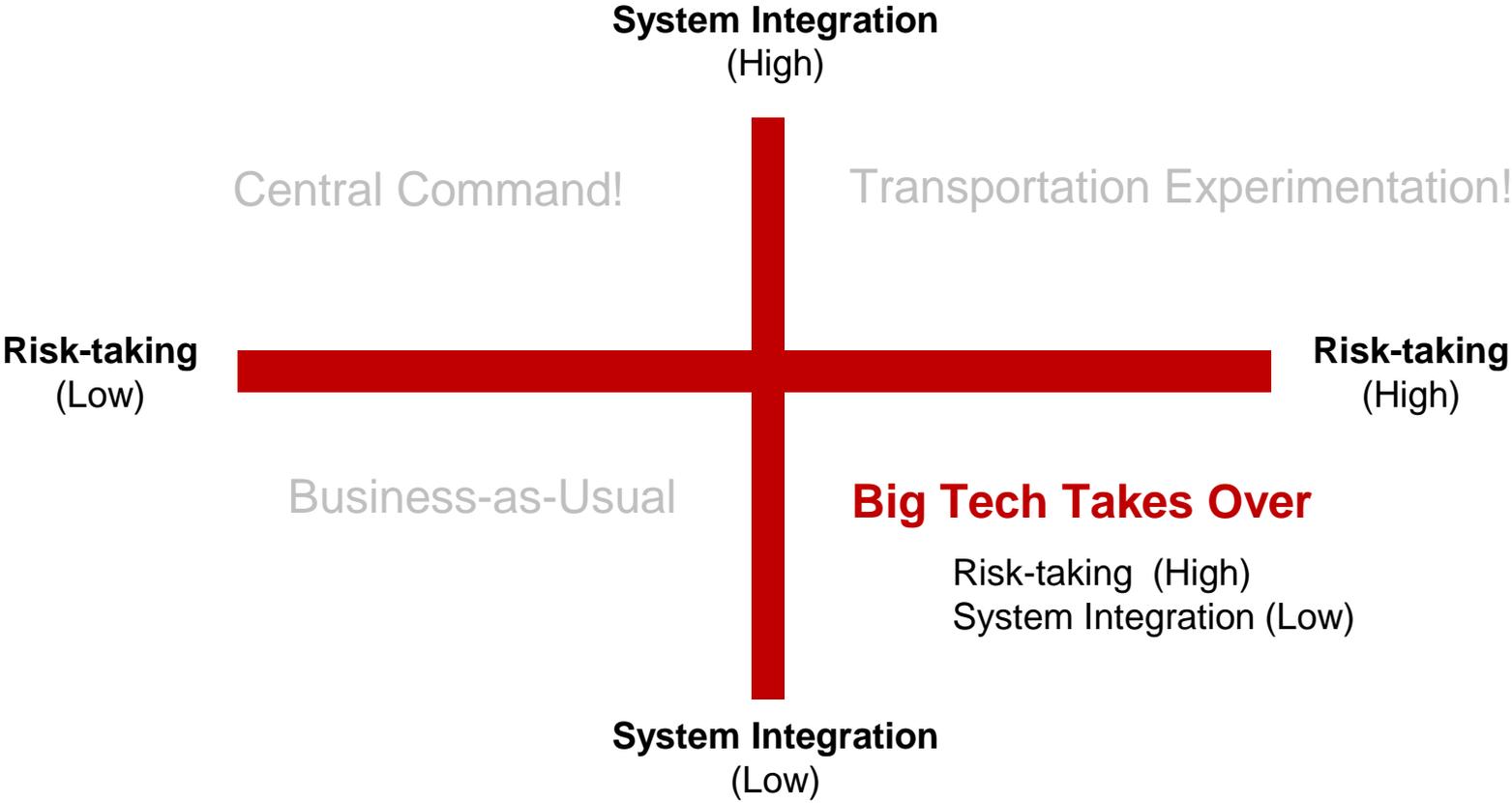


- Risk-taking (High)
- System Integration (High)

Headlines from 2030s

- Oregon creates blockchain marketplace for mobility players*
- California passes parking lot Tiny Home Bill*
- Phoenix Expands its Dollar Van Fleet to 10,000 pods*

Scenario: Central Command



Scenario: Big Tech Takes Over

Big Tech Takes Over!



- ❑ Risk-taking (High)
- ❑ System Integration (Low)

- ❑ **Gov't Cedes Control**
Market design favors private sector
- ❑ **WFH Drives E-Commerce & Tech Stocks**
Big Tech Stocks thrive in WFH Society;
Subsidized DOT road maintenance budget
- ❑ **Big Tech as
Community Operating Systems**
Large swathes of economic activity
controlled by Big Tech

Scenario: Big Tech Takes Over!

Big Tech Takes Over!

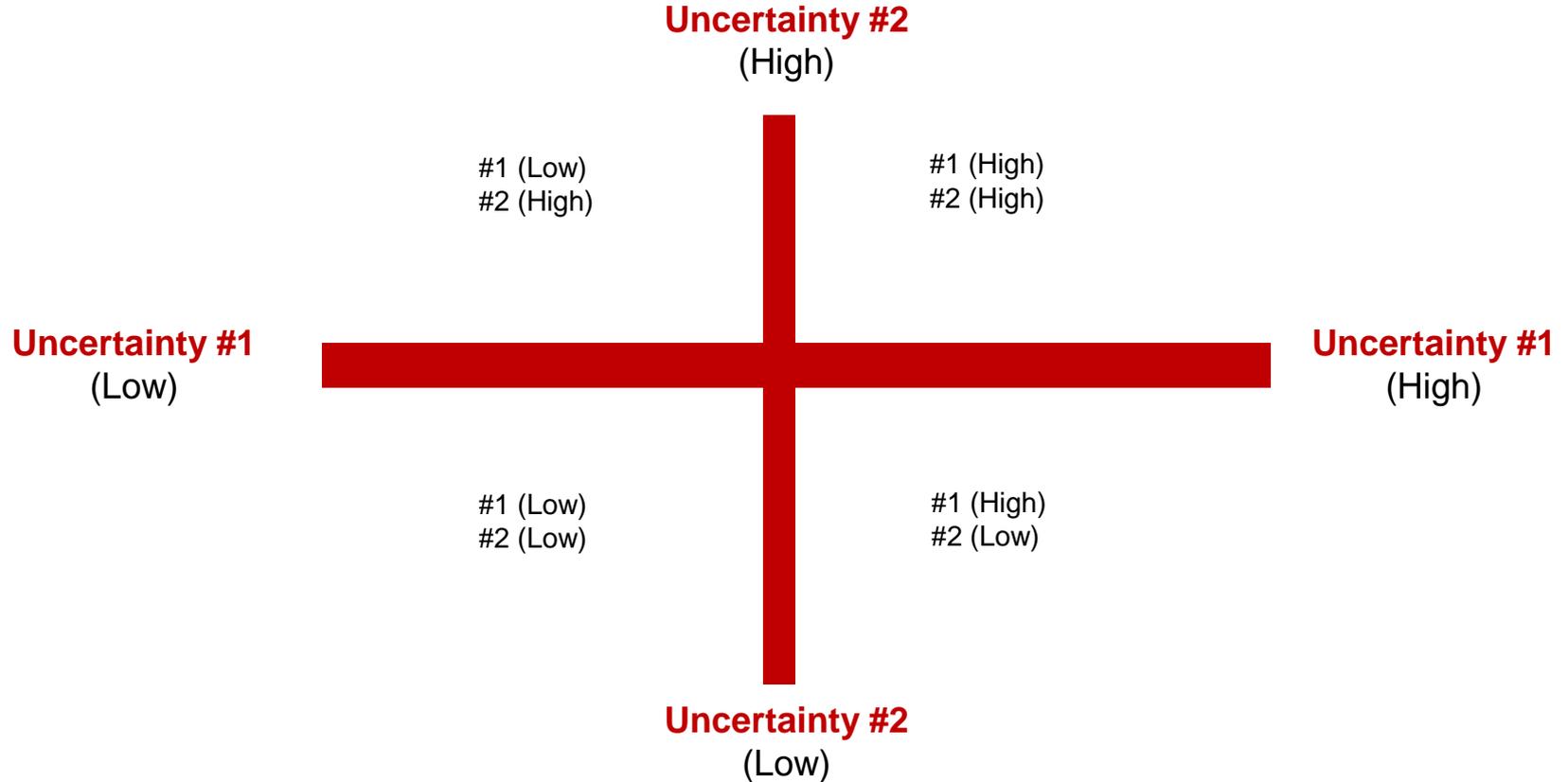


- ❑ Risk-taking (High)
- ❑ System Integration (Low)

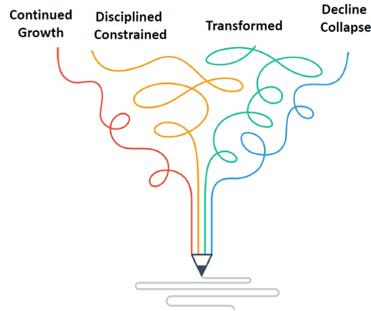
Headlines from 2030s

- ❑ *Google lead engineering firm on AI-designed Highway Project*
- ❑ *Apple Signs Contract to Control Flow on Austin's I-35*
- ❑ *Amazon Buys Reef, Expands Mobile Ghost Kitchen Pods*

3 Minutes: Possible Key Uncertainties



Turning Signals into Stories



Four Futures

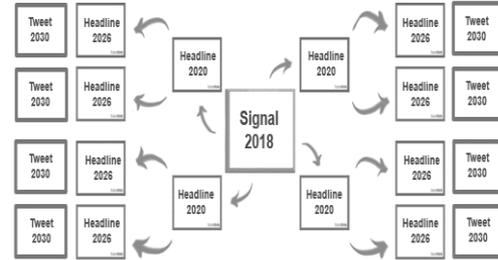
Millennials + Business

- By 2020, the global population of Millennials (US is expected to reach 2.56 billion).
- Millennials are typically defined as those born who will be before the year 2000. They will soon become majority adult population in the US.
- Millennials will gain control over consumer and discretionary spending as their adult role holder formation roles structure families, buying from US \$3.2 to \$10k annually by 2015—surpassing previous baby boomer workers.
- Small business ownership rates among Millennials are at 2.8%, but the generation is remains low as it is subject to and subject to compared to Baby Boomers and Gen X.

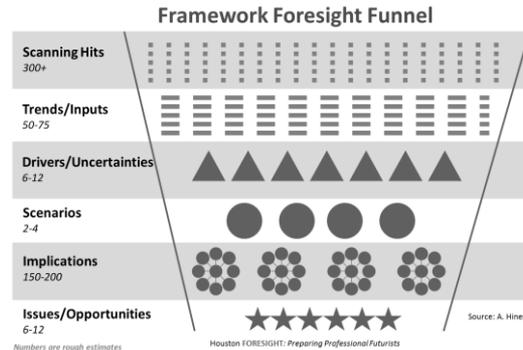
Industrial Internet

- Industrial internet refers to the growing ecosystem of connected devices, advanced analytics and human performance support.
- Business leaders across various industries now speak of growth leverage around "the Internet of Things" and machine-to-machine platforms that automate information flow and control decisions from autonomous devices.
- International Data Corporation expects the global IoT market to grow to more than \$1.7 trillion by 2020 driven by trends in connected homes, vehicles and wearable distribution centers.
- 5G will enhance the global number of connected devices managed by carriers will be 1.53 billion by 2020.

Trend Card Decks



Futures Wheel



Numbers are rough estimates

Houston FORESIGHT: Preparing Professional Futurists

Framework Forecast

Trend Card Decks

Millennials + Business



By 2020, the global population of Millennials (Gen Y) is expected to reach 2.56 billion.

- Millennials are typically defined as those born after 1980 and before the year 2000. They will soon become the majority adult population in the US.
- Millennials will gain control over consumer and discretionary spending as they shift into household formation years (starting families, buying homes, etc).
- A Visa survey estimates Millennials will earn more than US \$3.2 trillion annually by 2018—surpassing earnings plateauing Baby Boomer workforce.
- Small business ownership rates among (U.S.) Millennials remains low at 2.8% but the generation ranks high in terms of aspirations and self-identity as entrepreneurs compared to Baby Boomers and Gen Xers.

Industrial Internet



Industrial Internet refers to the growing ecosystem of connected devices, advanced analytics and human performance support.

- Business leaders across various industries now speak of growth strategies around 'The Internet of Things' and Connected Devices—phrases commonly associated with machine-to-machine platforms that automate information flows and command instructions from networked devices.
- International Data Corporation expects the global IoT market to grow to more than \$1.7 trillion by 2020 driven by trends in connected homes, vehicles and wearable devices used everywhere from energy, healthcare to distribution centers.
- IBM estimates the global number of connected devices managed by utilities will be 1.53 billion by 2020.

Trend Cards (Scenario Cards) as Product

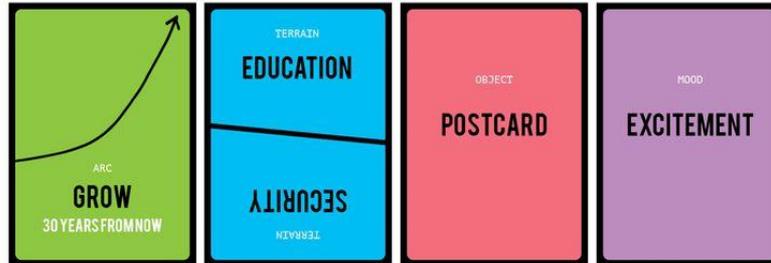


IDEO

ARUP

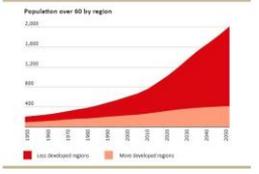


Arc = Grow, 30 years from now
Terrain = Education
Object = Postcard
Mood = Excitement



OCAD: The Thing from the Future

Long Game! Synthesize Signals into a Deck

<p>Data-driven Innovation</p> 	<p>Designing for Behavior Change</p> 	<p>Social Inclusion: Society as Stakeholder</p> 	<p>Millennials Grow Up</p> 	<p>Natural Language Intelligent Assistants</p> 
<p>The "She-Economy" Goes Global</p> 	<p>Blockchain Applications</p> 	<p>Aging Populations</p> 	<p>Evolution of Mobile Life</p> 	<p>Mindfulness + Mental Health</p> 
<p>People Analytics</p> 	<p>Next-11 Emerging Economies</p> 	<p>Rise of Cities + Urban Lifestyles</p> 	<p>Consumerization</p> 	<p>Internet of Things (IoT)</p> 

Trend Card Elements

Title (Theme/Trend)

Image

Overview: Data Points Key Questions

Set of Signals

Millennials Grow Up



By 2020, the global population of Millennials (Gen Y) is expected to reach 2.56 billion.

- Millennials are typically defined as those born after 1980 and before the year 2000. They will soon become the majority adult population in the US.
- This cohort makes up 25% of the global population; 37% of Millennials will live in India and China.
- Millennials will gain control over consumer and discretionary spending as they shift into household formation years (starting families, buying homes, etc.).
- A Visa survey estimates Millennials will earn more than US \$3.2 trillion annually by 2018—surpassing earnings of plateauing Baby Boomer workforce.

Opportunity Examples:

Aligning with Values + Personal Growth:

- Millennials connect with brands that support social values similar to their own such as diversity and environmental and social responsibility.
- A PwC survey found 57% of Millennials agreed: "access is the new ownership". Many Millennials participate in the 'sharing' and 'on-demand' economy, using services that allow individuals to borrow or re-use things like cars (Uber, Turo), rooms (AirBnB) or clothes (ThredUp; RentRunway).
- Millennials seek out development opportunities. A Deloitte survey found 28% of Millennials feel their current organization is making full use of their skills. More than 53% aspire to become the leader or senior most executive within their current organization.

Connecting via Big & Small Social Media:

- Millennials will continue to use social media as they grow up, join the workforce, and start families of their own. The advertising sensation of the 'Old Spice Guy' campaign was successful largely because of a social media reinforcement strategy that allowed the Millennial audience to push the brand message among friends.
- Many brands see the upside of niche social sites (e.g. 'MommyBlogs', Beauty Vloggers) that appear more peer-based and authentic to Millennial audiences.

Do it Yourself Trend Cards

Do It Yourself Trend Cards



Trend Card Title

Image

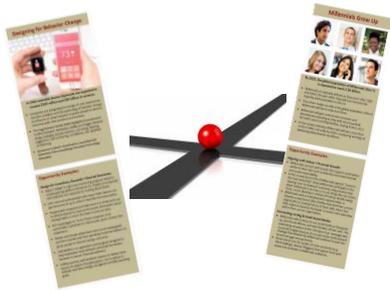
Overview

Signal Examples

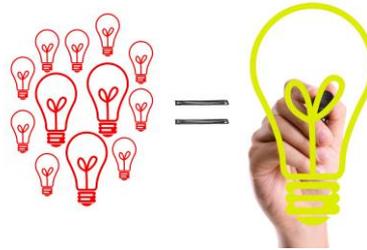
- 1.
- 2.
- 3.
- 4.

Activity: Trend Card Poker

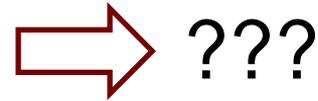
Output: Generate Ideas that Solve Problems + Grow Business



Teams Read
Trend Cards
(Signals with Context)



Discussion + Capture
on Implications
Of Converging Trends



Teams Develop 'Shark Tank'
Pitches on Ideas that Respond
to Scenario Conditions

Trend Cards Activity Steps:

Trend Cards are an effective way to provide quick inputs for creating loosely structured scenario platforms that can provide insights and inspiration. While typical scenario planning workshops can take hours or days to unfold, Trend Cards are a partially assembled tool that allows you to synthesize relevant drivers of change into short scenario platforms that challenge your thinking about the future.

- 1) Choose a set of Trend Cards that provides a broad set of *STEEP* category themes. You may wish to create your own *card deck*—or use pre-developed decks from companies such as IDEO or Arup or your own trend cards.
- 2) Include a list of events that serve as source of discontinuity. Event cards provide the creative force that can bring scenario platforms to life.
- 3) Determine a simple capture format for your scenario. You may ask your team to create a “Day in the Life” story based on the trends—or a mock-up magazine cover or blog post that might be found in society in 2020.
- 4) When the scenario platform is created use a set of strategic questions to provoke thinking about how your current products or services might be threatened or allowed to thrive in this future scenario world.



Trend Card inspired scenario platforms are meant to be short stories of possible futures. They are less robust than traditional scenarios but can still be equally provocative in challenging how we see the future unfolding.

Stories can be told in both words and images. Scenario platforms **are not** supposed to be predictions, or recommendations. They should favor *open endings* rather than *happy endings*. The reader should be left with more questions than answers. This is a story platform for exploring implications of converging trends and disruptive events. Describe the world and let your colleagues build bridges to the implications for your products and services.

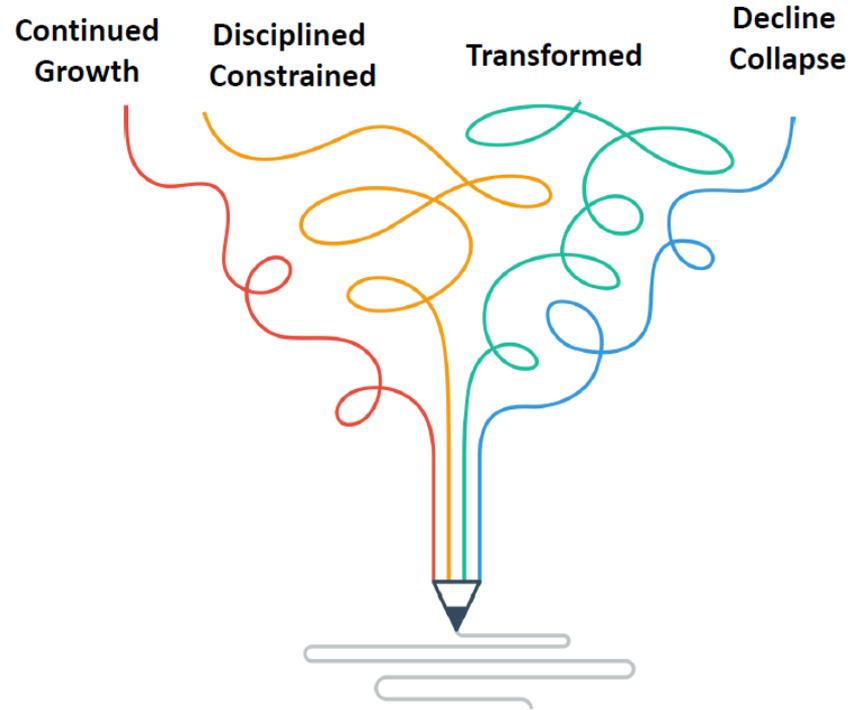
Sample Strategic Questions To Explore Your Stories:

Creating the stories is Step One. The real insights come from engaging your teammates in answering some challenging strategic questions. Here are a few to consider:

- What other trends and possible events might support the future described in this scenario? Or make it make it less plausible?
- What are the internal implications for our partners and business teams?
- What might our clients do differently to thrive in this future?
- How might we think differently about metrics and analytics in this scenario?
- What does our company branding and communication strategy look like in this future? Internal Operations?
- Where might the story go from here? Write a few extensions of this future.
- What are signals and milestones of trends and emerging issues that we can monitor?

Turning Signals into Stories

Four Futures



Four Futures Thinking



**Continued
Growth**



**Disciplined
Constrained**



Transformed



**Decline
Collapse**

Task: Construct Your Four Futures



**Continued
Growth**



**Disciplined
Constrained**



Transformed



**Decline
Collapse**

Storytelling Tips

Experiment with Story Structures

- Multi-paragraph stories
- Bullet points of storyline elements
- Visualizations that communicate the message

STEEP Forces of Change

Each scenario should include elements of the STEEP categories of change:

- Society (Demographics / Culture)
- Technology
- Economy
- Environment
- Politics (Legal)

Three Mechanisms of Change

Your scenarios should include:

1) Trends

Slow moving changes over time;
Language should be 'more' or 'less'

2) Events

Sources of discontinuity including:

Scheduled Events

Plausible Events

Wildcard Events (Low Probability, High Impact)

3) Choices

Reflect our investments in people, partnerships and places.

Continuation: Template

Draft Name of Continuation Scenario

The Continuation Story

- In 2021...
- In 2023...
- In 2024...
- In 2025...
- In 2029...
- In 2030...
- In 2035...

Evidence: Signals to Support this Scenario

- Signal Title/Link
- Signal Title/Link

Continuation



Continuation is story based on signals that reflect *known knowns* and extrapolation of generally positive forces. **This scenario may be viewed as the ‘baseline’ (extrapolation) or ‘official future’ which reflect the shared (often unspoken) assumptions of an organization.**

When you create the Continuation story it should include

- Familiar stakeholders and partnerships
- Policies, services & value offerings, and customer (citizen) needs
- How you overcame new twists & turns along the way

The story should include challenges of new social norms and market dynamics but inevitably reveal how your organization leverages its core capabilities and ‘rides the wave’ of change.

Disciplined / Constrained



Disciplined/Constrained is a story of the future where your organization continues to operate in a traditional manner despite evidence that the world around you has shifted. Key organizational challenges are maintaining relevance and returning to growth.

When you create the Disciplined/Constrained story be sure to reveal:

- Signals that suggest your current services and value offerings are less relevant or aligned to market and client needs.
- Signals that challenge organizational culture or processes.

The story might surface how the organization's inability or refusal to change has hit a 'limits to growth' phase. The story's tone is not fatalistic but morale and expectations for growth are muted. You will survive but not thrive.

Disciplined / Constrained: Template

Draft Name of Disciplined / Constrained Scenario

The Disciplined-Constrained Story

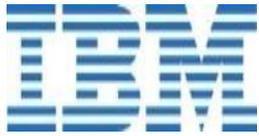
- In 2021...
- In 2022
- In 2023...
- In 2024...
- In 2025...
- In 2029...
- In 2030...
- In 2035...

Evidence: Signals to Support this Scenario

- Signal Title/Link
- Signal Title/Link

Transformed

Transformed is a scenario archetype where the world and organization have gone through an era-step change. Think caterpillar to butterfly – or Industrial to Information Economy.



The story should reveal how the organization (region) became something different. This may be the emergence of a new department or team. Or it might be a wholesale reinvention of the entire organization culture or value proposition.

The story tone is not utopian. There should be new problems and challenges that appear as expected – or as unintended consequences. Leave some issues unresolved.

The key story dynamic should show how the organization is empowered and feels in control of its future in this new world.

Transformed: Template

Draft Name of Transformed Scenario

The Transformed Story

- In 2021...
- In 2022
- In 2023...
- In 2024...
- In 2025...
- In 2029...
- In 2030...
- In 2035...

Evidence: Signals to Support this Scenario

- Signal Title/Link
- Signal Title/Link

Decline / Collapse

Decline/Collapse is a scenario archetype where the world has changed and your company has not.

 **BlackBerry**



NOKIA

The Collapse Story connects signals that suggest:

- Your imminent demise (e.g. Shut down firm; Merger)
- An End of Growth (A Burning Platform)
- Stagnation is challenging **your culture**

When you create the Decline/Collapse story be sure to describe both external conditions (outside-in changes) and internal actions (inside-out changes).

You might also emphasize inactions or decisions not made. The story may describe innovative efforts that failed and did not succeed as you attempted to transform the organization.

Decline Collapse: Template

Draft Name of Decline/Collapse Scenario

The Decline-Collapse Story

- In 2021...
- In 2022
- In 2023...
- In 2024...
- In 2025...
- In 2029...
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- In 2035...

Evidence: Signals to Support this Scenario

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Resource: Team Conversations

When the **Four Futures** are written, you should engage colleagues in answering strategic questions:

- What signals or trends have you seen that might support the future described in each scenario?
- What are the internal implications for our partners and teams?
What might our customers (citizens) do differently to thrive in this future?
- Where might the story go from here? Write a few extensions **from** this future.
- What indicators or milestones might we monitor that represent a tipping point of this future?

Examples: Four Futures

Four Futures of Food

global food outlook alternative scenarios briefing



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ALTERNATIVE FUTURES SCENARIOS

Growth, constraint, collapse, and transformation are four distinct but plausible directions of change identified by Jim Dator, director of the Hawaii Research Center of Futures Studies, in his work on alternative futures scenarios.



GROWTH: current trends and conditions, both good and bad, continue to grow as they have in the past.



CONSTRAINT: society, either led by governments or grassroots efforts, takes austerity measures to constrain the behavior of groups of people or individuals.



COLLAPSE: change in which major social systems are strained beyond the breaking point, causing system collapse and social disarray.



TRANSFORMATION: fundamental transformation of a society or system that signals a break from previous systems.

While linear growth represents one potential shape of the future, we can learn from recent history that constraint, collapse, and transformation are other ways of thinking about how change can occur. For example, China averted an infrastructure breakdown by **constraining** population growth with its one-child policy. Western housing and financial markets **collapsed**, surprising those who assumed past trends would continue. And the Internet and, more recently, social media, **transformed** the way the world communicates information—leaving traditional media outlets scrambling to adapt.

We can also find examples of these four directions of change in the global food web's history:



Source: Flickr user Paco Calvino

GROWTH: In the early 1970s, the United States Department of Agriculture adopted policies that encouraged farmers to produce as much food as their land could bear. This reversed decades of government caps on production. The ensuing growth in the availability of commodity crops like corn helped bring down the prices of animal feed, and ushered in a boom in meat consumption. Throughout the world, obesity has increased dramatically, while the number of people who go hungry recently passed the ominous milestone of one billion globally.



Source: Library of Congress

CONSTRAINT: The chaos and violence of World War II brought with it widespread interruptions to food supplies as part of coordinated efforts to use hunger for military advantage. To manage this challenge, countries including the United Kingdom and United States imposed rationing systems to keep food prices in check, ensure equitable distribution of food supplies, and mitigate the threat of widespread starvation.



Source: State Library of New South Wales

COLLAPSE: The Dust Bowl of the 1930s resulted in a collapse in food supplies. After years of wet—and productive—weather, plains states and provinces in the United States and Canada were hit with a severe drought. This, along with problematic farming practices, saw fertile soil give way to dust, which displaced millions of people and led to widespread poverty and hunger. Today, fisheries worldwide are facing various degrees of collapse.



Source: Flickr user Vanessa Stewart

TRANSFORMATION: In the past few decades, refrigeration has paved the way for stable food storage, ready-to-eat meals, and massive global trade in perishable fruits, vegetables, and meats. In turn, this new technology has fundamentally reshaped our relationships with food, and with each other. Family members can individually heat up their own dinners; meals can even be eaten alone in cars. Refrigeration has also enabled a globalization of taste. For example, sushi can be bought all over the world—even in places thousands of miles from a source of fresh fish.

Alternative futures scenarios based on these directions of change—growth, constraint, collapse, and transformation—provide a useful framework for considering the future of the global food web and how finding, buying, and consuming food might evolve in the next decade.

GROWTH

WELL-BEING IS PRODUCTIVITY
and more choice increases experiential well-being



SCENARIO DYNAMICS

- Economic growth occurs in localized booms and busts.
- GDP and economic growth paradigms remain dominant.
- Global consumption increases.
- Rich-poor gap grows.
- Innovations in science, finance, and markets are afoot.

KEY VALUES

- Financial and material expansion
- Personal responsibility
- Productivity
- Material comfort
- Opportunity and liberty

CONSTRAINT

WELL-BEING IS COMMUNITY
and taking care of others increases personal well-being



SCENARIO DYNAMICS

- Economic indicators remain weak and experimentation with local currencies rises.
- Priorities shift from economic growth to maintaining stability and comfort.
- Sustainability paradigms dominate market and policy activity.
- Policies, limits, and quotas reinforce restraint and optimization.
- Games and participatory monitoring connect actions to environmental effects.

KEY VALUES

- Environmental awareness
- Personal, household, and community restraint
- Stability and aversion to change
- Prevention and optimization
- Making difficult trade-offs

COLLAPSE

WELL-BEING IS SECURITY
and escape from real and perceived threats



SCENARIO DYNAMICS

- Local and regional collapses begin to interconnect and cascade
- Social, environmental, and financial resources dwindle.
- Public and private bankruptcies drive economic dislocation.
- Low-transparency monitoring maintains security.
- Hoarding, shadow economies, and luxury markets take hold.

KEY VALUES

- Safety and risk avoidance
- Family integrity
- Opportunism
- Keeping up appearances
- Competition for resources

TRANSFORMATION

WELL-BEING IS ECOLOGICAL
and collaboration builds capacities for holistic well-being



SCENARIO DYNAMICS

- Social production transforms traditional organizations.
- Participation shapes economic activity.
- Governance, manufacturing, and services follow small-scale, distributed models.
- Bio-based innovation and ecological management paradigms gain visibility.
- Open work networks and crowd-sourced unbundled tasks.

KEY VALUES

- Holistic perspectives
- Local resilience
- Reciprocity and openness
- Sincerity and accountability
- Sustainability and resource renewal

The economy continues to struggle and businesses reposition themselves in an increasingly crowded well-being marketplace. The expansion of well-being and the challenges of aging and chronic illness spur people to see health as a core component of every choice. Health becomes increasingly valued but also increasingly hard to attain.

Health remains primarily a personal responsibility— one beyond the capabilities of people on shaky financial ground. While wealth and technology expand the well-being options for a growing upper-middle class in global economies such as China,

Brazil, and India, changes to diet and lifestyle also lead to increases in obesity and chronic illness. Growing disparities in wealth mean that the poorest have even less access to basic health inputs.

The marketplace further complicates simple decisions, adding new information literacies to everyday life. With so many technology-laden, connected experiences—from cars to food to clothing—orientating around health and well-being, consumers gravitate toward products that provide immediate benefits, even if those products do little to improve (and may even harm) health in the long run.

In a world where resource constraints—in domains such as energy and potable water—place practical limits on everyday life, new practices to optimize well-being increasingly focus on maintaining stability and stretching scarce resources. As sharing of resources and knowledge grows, the community leaps to the forefront of well-being.

Restraint and frugality are grudgingly accepted as virtues. Recognizing limits contributes to a shift in values surrounding longevity, as palliative care is seen as increasingly central to medicine. Creativity, happiness, and personally optimized well-being become major priorities for people and governments.

Environmental objections to the pharmaceutical and hospital industries lead people to avoid them whenever possible, and food becomes the favored pathway to health and well-being.

High unemployment persists, engendering small-scale experiments that redefine the meaning and nature of work. Communities explore ways to exchange value through local currencies and networks of social production. People who cannot afford the medical care they need start skipping routine care and simple interventions, in effect making cancers and other diseases far more deadly.

While natural and human disasters devastate many regions, the resources that produce good health—from housing security to access to nutritious foods to social cohesion—are decimated everywhere. Many cities, states, nations, and private enterprises fail into bankruptcy. Many more industries—including health care—consolidate, reducing people's choices; large surviving organizations are not responsive to radically diverse needs in different localities. Trust in institutions is at an all-time low, with corruption, stockpiling, and counterfeiting becoming ubiquitous.

In the face of widespread scarcity and hoarding, violence and organized crime increase. People retreat into securing basic needs and safety for themselves and their families, and look for well-being in very temporary peace of mind. Social pressure and people's desire to escape from harsh realities become vital pillars of formal and informal economies. Luxury markets persist as the gap between rich and poor grows wider, and those who can afford it use private supply networks to obtain luxury foods and medical necessities. Regional disparities spur migration and medical tourism—though well-off communities seek to exclude outsiders.

People are increasingly creating well-being in a systematic way—from the molecular to the planetary scale. They organize themselves in fundamentally new ways to create resilience in local communities—and connect to global processes. Well-being is about being aligned at all scales with a world in the process of healing itself.

Some individuals and institutions struggle to maintain the status quo. While governments, NGOs, and corporations increasingly strive to assign accurate values to personal and environmental contributions, others still work to extort costs and tightly control assets. Monetary incentives to

test symptoms of illness in perpetuity are under fire as patients shift to delivering appropriate and accountable care. A growing number focus onroot causes, offering personalized windows into—and services for tinkering with—individuals' epigenetic processes.

Self-care and formal medicine focus on teaching skills to help people interpret personal data and navigate their environments, while city environments and food systems are rebuilt to provide optimal well-being. Localized models of micro-employment and on-site service provision ensure a high-participation economy.

bodies			networks			environments			bodies			networks			environments																				
<p>Expanding Markets Well-being markets grow as people purchase products and services based on their touted health benefits.</p> <p>Creative Comforts People pay more attention to material contributions to physical and mental health, seeing comfort and tangible near-term benefits as cornerstones of well-being.</p> <p>Producing the Self Well-being consumption becomes the means of gaining a competitive edge and refining an ever more augmented and productive body and self-image.</p>			<p>Widespread Inequality Well-being inequality increases, and while the more affluent use their networks to expand their global options, everyone else navigates a landscape of expanded risk.</p> <p>New Authorities Abundant, confusing choices drive people to rely on new well-being authorities—with or without formal qualifications—to vet efficacy claims.</p> <p>Commercialized Networks More networks are organized around commercial services and long-term sustainability for innovation in financing, services, and product marketing.</p>			<p>Stressful Choices The health decision-making environment, full of complexity and contradictions, is a major source of stress in everyday life.</p> <p>Green Health Economy Green values inform people's understanding of well-being and result in price increases for organic and other sustainably produced goods.</p> <p>Diverging Growth Strategies Increasing numbers of communities pursue local well-being resources and long-term sustainability in pursuit of short-term growth.</p>			<p>Changing Behaviors Widespread behavior change efforts focus on reducing energy, water, and medical resource use.</p> <p>Optimized Healthspans People accept the limits of medicine, living with trade-offs in managing chronic conditions and fundamentally shifting their attitudes toward end-of-life and palliative care.</p> <p>Transition Anxieties The difficulty of accepting losses leads to increased levels of anxiety, depression, and other mental health challenges.</p>			<p>Participatory Well-being Well-being shifts from a largely individual to a largely communal pursuit as people cultivate social connections and are mindful of their impact on the commons.</p> <p>Social Priorities People rely more on sharing and commons-based actions, and less on market standard offerings, to stretch well-being resources and reduce spending.</p> <p>Sharing for Care Both medical care delivery and scientific research production are increasingly based on sharing resources, personal data, and health experience.</p>			<p>Risk and Resource Transparency Participatory mapping reveals environmental risks and underutilized resources, and mitigates resource-based health challenges.</p> <p>Local Resilience Environmental constraints and the quest for local resilience drive localization of food and manufacturing supply chains as well as an expansion of good-Smartian training initiatives.</p> <p>Mandatory Green Health The medical industry is forced to adopt greener practices, from super-efficient building retrofits to avoiding single-use plastics and other resource-intensive products.</p>			<p>Troum of Uncertainty Constant uncertainty and a lack of steady access to basic resources leaves biological imprints of stress and anxiety on large numbers of people.</p> <p>Safety First People adopt self-quarantining strategies and manage their health by avoiding unstable food and health products.</p> <p>Mobile Information Dependence on—and cost of access to—digital health records accelerates as natural disasters destroy paper records.</p>			<p>Tight-knit Networks People are more reliant on close circles of friends and family, and trust becomes a highly valued resource, in part because denial and deceit are widespread.</p> <p>DIY Medicine Do-it-yourself medicine websites stand in for overwhelmed hospitals, and folk medicine propagates as people form ad hoc networks to share health knowledge.</p> <p>Mobile Health Access Mobile health and wellness services—run of personal devices, kiosks, and retrofitting vehicles—are increasingly common in neighborhoods of all economic classes.</p>			<p>Ecological Disruptions Extreme weather and natural disasters force people to migrate and increase the threats of infectious disease, leading to vicious immigration detailed perspectives of social and ecological imbalances.</p> <p>Well-being Enclaves Class of well-being, areas still rich in financial or health resources, seek to protect their benefits from the less fortunate.</p> <p>Tough Choices Communities are forced to choose between spending on long-term health or on security and emergency recovery, as hospitals decide whether or not to maintain public safety-net programs.</p>			<p>High-resolution Bodies The majority of people have at least some access to high-resolution views of their genetics, epigenetics, and chronobiologies, giving them detailed perspectives of their personal risks and assets.</p> <p>Integrated Care Systemic understandings of how bodies fit into surroundings spur a move from biomedical definitions of health to more holistic, integrated visions of care.</p> <p>Biological Generosity Formal professionals and informally educated gurus emerge to help people make sense of the high-resolution details of their bodies.</p>			<p>Contagion Health Most people are aware of the effect of friends, neighbors, and acquaintances on well-being, and some individuals and communities become case studies of social and ecological imbalances.</p> <p>Sharing as Caring People protect themselves from stressful events and information anxiety by sharing their well-being observations with larger support and research communities.</p> <p>Networked Medicine Recognizing the assets already in the environment, facilities of all kinds—but especially medical facilities—start integrating and humily, including beneficial microbes, rather than pursuing sterile environments.</p>			<p>Resource Footprints People are more attuned to the idea that everything has an effect on large and small scales, and attempt to preserve and renew local watersheds, soils, and food varieties.</p> <p>Ecological Design Ecological thinking becomes central to engineering and design, and rooms, buildings, and even whole cities are rethought to keep temperature and humidity at beneficial levels.</p> <p>Living Assets Recognizing the assets already in the environment, facilities of all kinds—but especially medical facilities—start integrating and humily, including beneficial microbes, rather than pursuing sterile environments.</p>		

Whole Foods is opening members-only "wellness clubs" to promote healthy eating and further expand its reach into health and well-being.

source: Whole Foods and PETA

Nissan is redesigning cars to build in health features such as seats that enhance blood flow and an event that releases Vitamin C.

source: Nissan

Fresida is a Chicago restaurant that started accepting bartering goods and services for food.

source: Fresida Chicago

SeaChange Health Insurance Company issues Park Prescriptions, a program of reimbursements for state park memberships.

source: SeaChange Health and Insurance

A coalition of doctors has run paid projects in Haiti with the goal of creating an iPhone app. In hopes of developing an international standard for mobile medical records in disaster situations.

source: WHO and UNICEF

A recent University of Wisconsin study suggests that while stress increases could lead to sickness in obesity and other diseases—its potential risk being distributed disproportionately to the very old and young.

BioCurious.org
A Hackerspace for Health: Experimentation with Health

Join the BioCurious revolution!

BioCurious is a coalition of graduate students and amateur scientists trying to demystify genetics and biohack research.

source: BioCurious via Kickstarter

The Biology and Built Environment Center at the University of Oregon explores the "built environment microclimate" and its interactions with human health and sustainable architecture.

source: Biology and Built Environment Center

Force Field Analysis: Push Pull

Scenario Name

Restraining Forces (Pulling You Away)

Driving Forces (Pushing Toward Scenario)

- 10

- 5

- 1

Force

+1

+5

+10

- 10

- 5

- 1

Force

+1

+5

+10

- 10

- 5

- 1

Force

+1

+5

+10

- 10

- 5

- 1

Force

+1

+5

+10

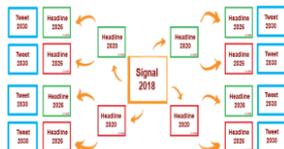
BACC Journey



Kickoff

Sept 18th

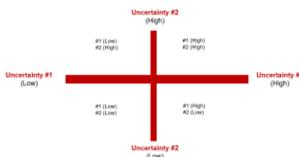
*Foresight 101
Scanning*



Webinar #1

Oct 2nd

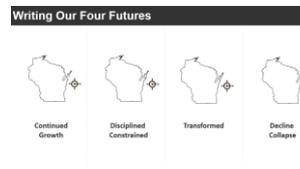
*Futures Wheel
Signals Teams*



Webinar #2

Oct 16th

*Era-transitions
Scenarios*



Webinar #3

Oct 30th

*Four Futures
Leading Change*



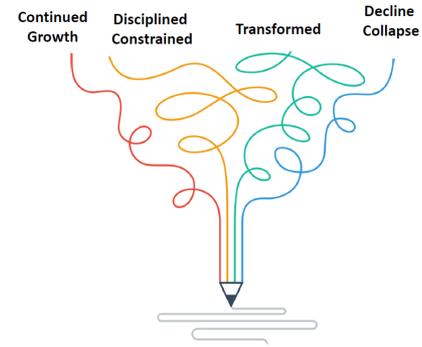
Presentation

Nov 20th

Next Steps



1+1 with Garry
30 minutes
(Era-based Sheet)



Draft Four Futures