

April 27-29, 2026 | Phoenix, AZ

Information Supply Chains: The Hidden Links Behind Every Decision

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**Data & information
have their own
“supply chains”**



Disruption

Corruption

Counterfeiting

Bottlenecks

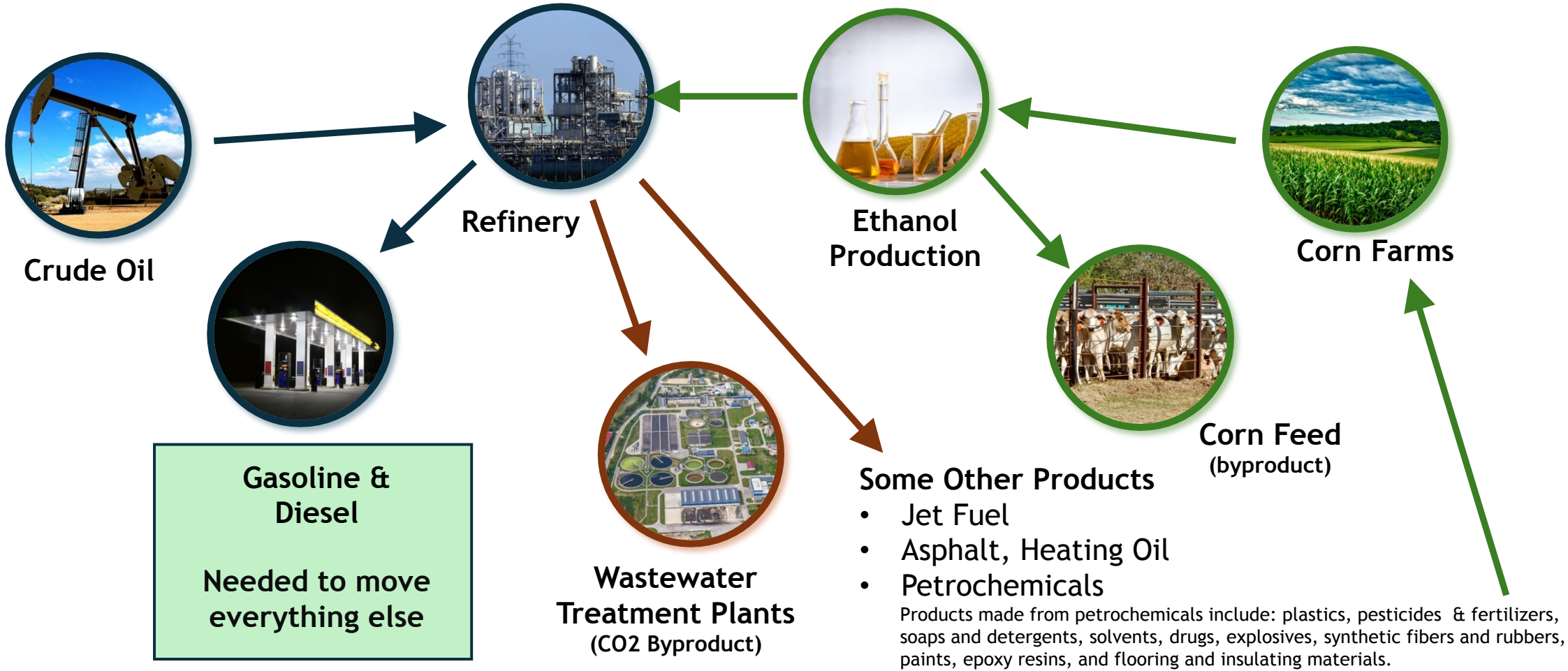
How We Think About Supply Chains



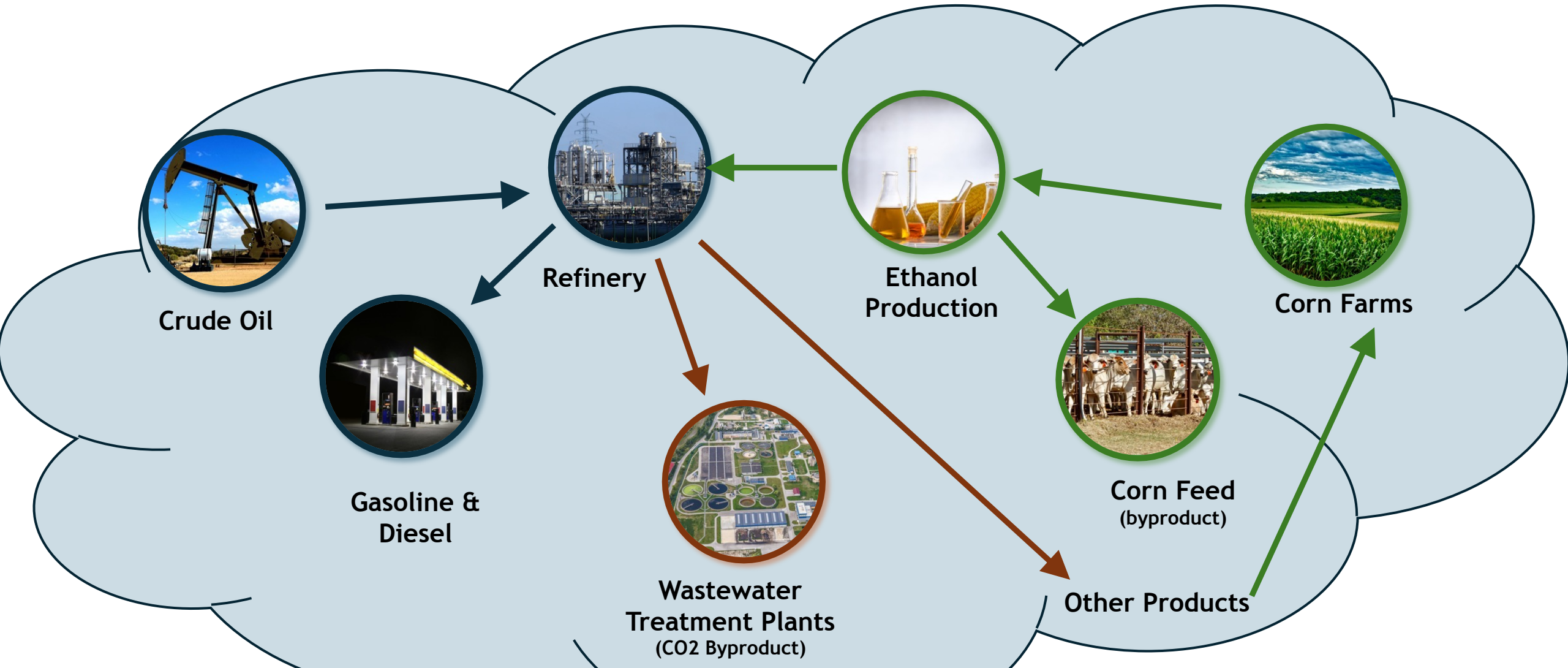


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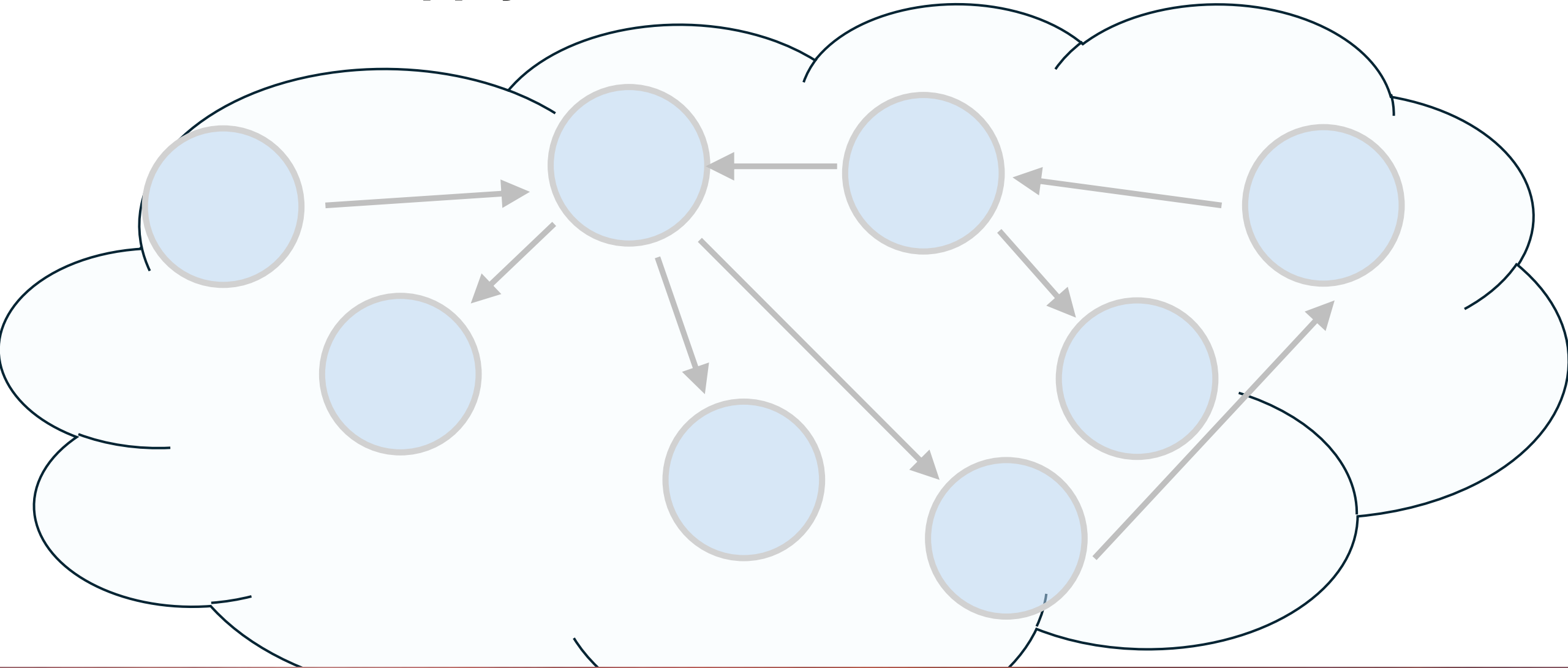
Supply Chains are Intertwined Systems



Within a Cloud of Social, Economic, Regulatory, ... Pressures



Information Supply Chain



“More major intelligence failures have been caused by failures of analysis than by failures of intelligence collection.”

- Richards J. Heuer, Jr., author of Psychology of Intelligence Analysis

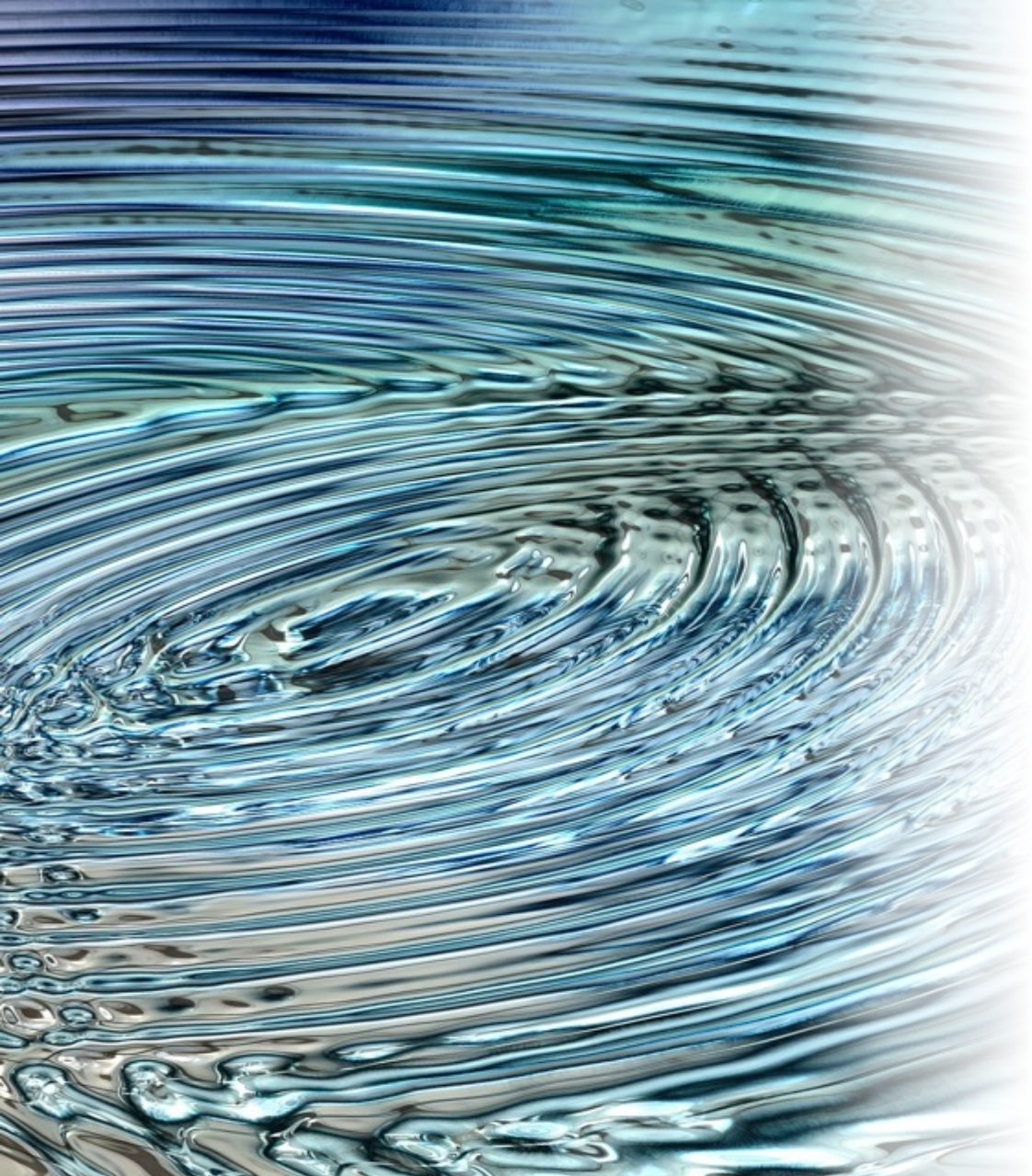
“Bias is a leading factor resulting in errors in intelligence analysis.”

- Rebeka Melber, in Errors in Intelligence Analysis (masters thesis)



Hidden Influencers & Assumptions

What lies beneath the visible



Different Definitions

(or how experts interpret things)

Water Systems
Down

0

Boil Water
Notices

7

Source: California OES Business Operations
Center October 2017 Wildfires Brief 10/13/17

Question & Answer

Orientation Mismatch

Are the fuel distribution challenges from Hurricane Sandy similar to what we will face post earthquake? *(thinking about the infrastructure: refinery to consumer)*

Yes – there would be similar fuel distribution challenges. *(referring to the last mile distribution: end terminal to gas station)*



A landscape photograph featuring a single, vibrant red tree on a grassy hill. A path leads from the foreground into a valley, with a bright light source creating a lens flare effect in the distance. The sky is hazy and yellowish.

All narratives are influenced by their source material

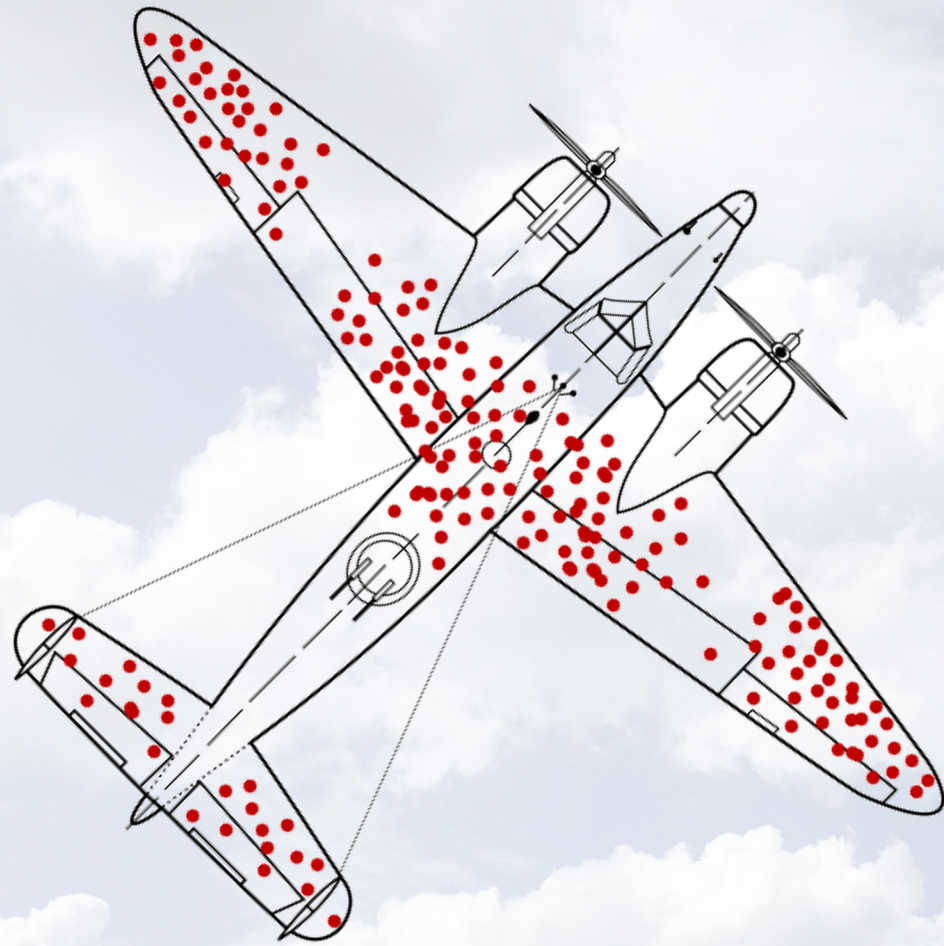
“Mudslides could occur along with debris flows, especially in areas impacted by wildfires like the Creek and the Ferguson Fires in California, which has large burn areas”

October 2021 Bomb Cyclone Intel Report from 3rd Party
Under Considerations for Resilience Practitioners



Analysis Flaws

Recognizing biases and knowing the fundamentals



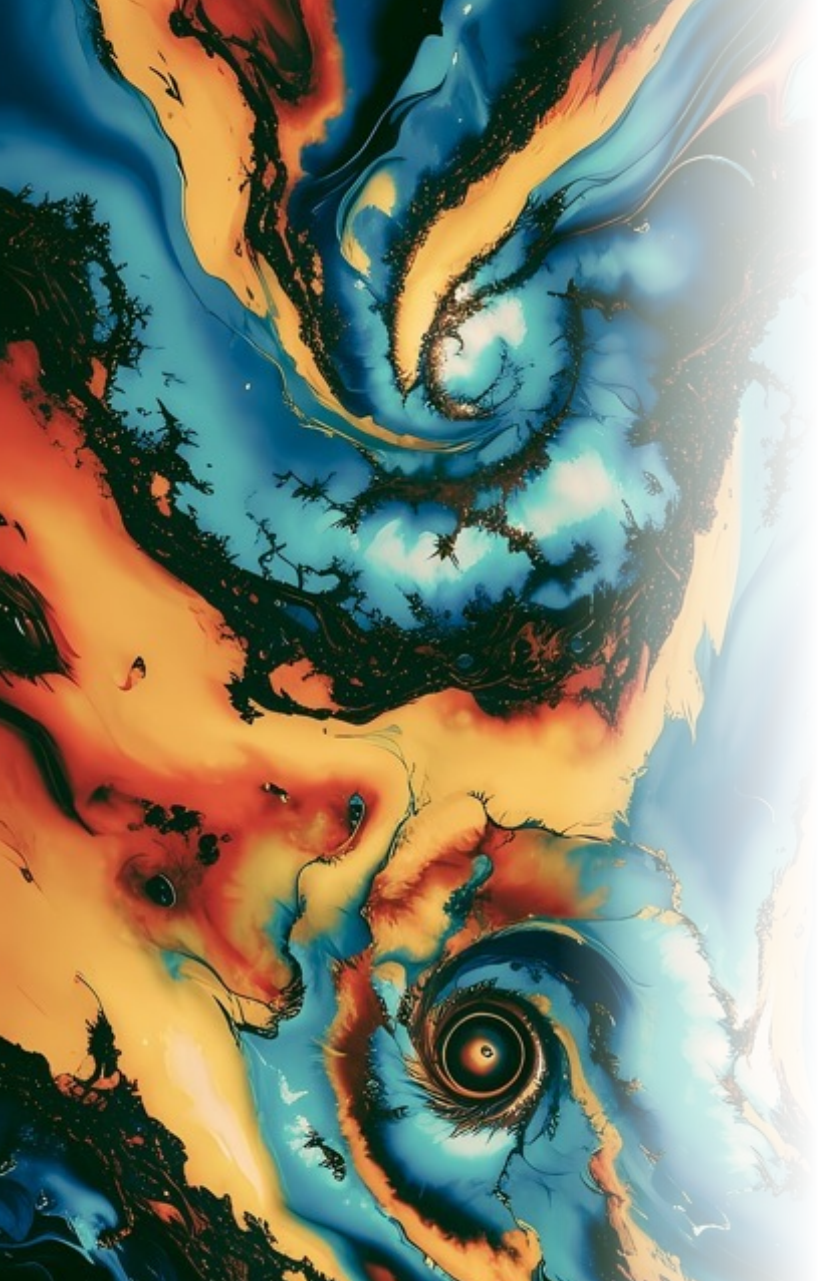
Hardening Planes in WWII

Survivorship Bias

Not Knowing the Basics

In California National Weather Service forecasters will determine when weather conditions are critical, based on the following criteria: ...





Correlation Does Not Imply Causation

Our Definitions Can Create Blind Spots

Example: Biological hazard – a biological agent or biologically active substance—excluding toxic chemical substances that are considered solely as chemical weapons agents, regardless of origin (e.g., naturally occurring or bioengineered)—that represents an actual or potential danger to humans, animals, plants, or the environment.

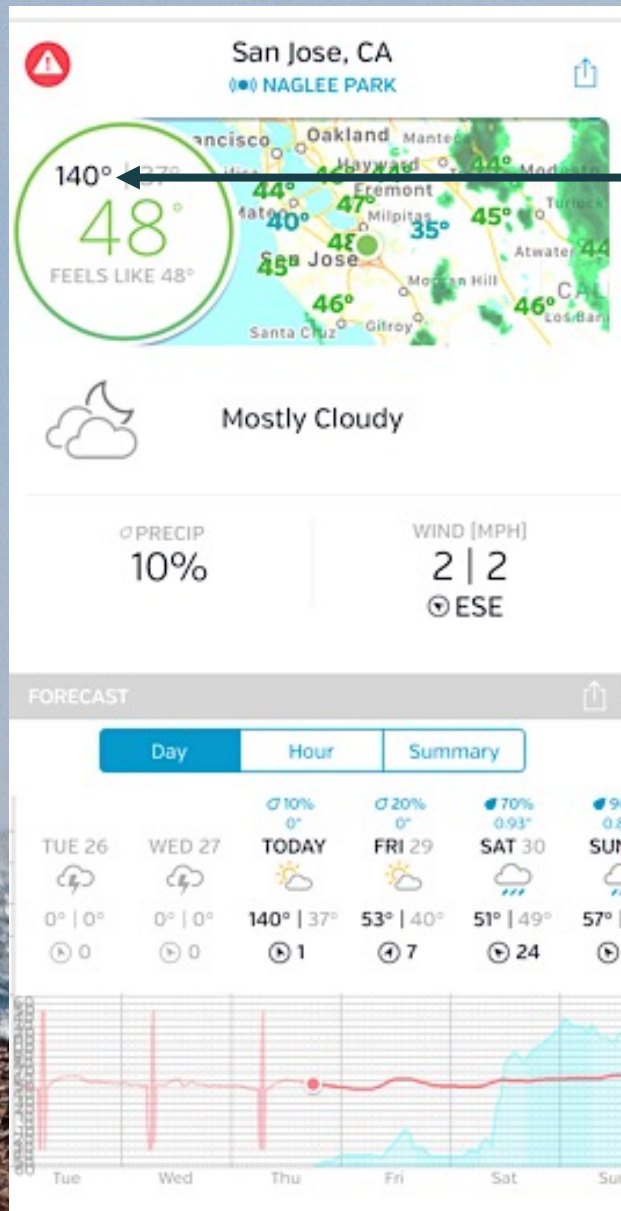
Source: National Biodefense Strategy and Implementation Plan, 2022





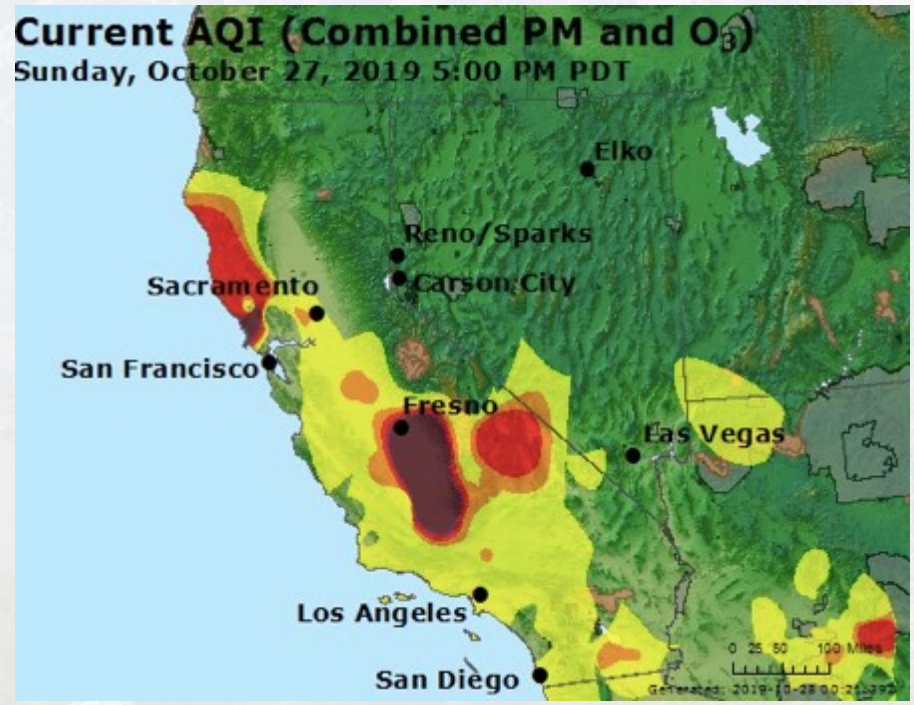
“Tech” Glitches

Learning What Can Trigger False Readings



A hot day in December





Fresno, CA

Current Conditions

Air Quality Index (AQI)
 observed at 17:00 PDT

199 Unhealthy

Health Message: The following groups should avoid all physical outdoors: People with heart or lung disease, Children and older adults. Everyone else should avoid prolonged or heavy exertion.

Note: Values above 500 are considered Beyond the AQI. Follow recommendations for the Hazardous category. Additional information on reducing exposure to extremely high levels of particle pollution is available [here](#).

AQI - Pollutant Details

Ozone	31	Good
Particles (PM10)	199	Unhealthy
Particles (PM2.5)	68	Moderate



Numbers into Context

Understanding their limitations & constraints

Numbers Need Context

77 cell towers offline

Now comes the questions:
What does this mean for capacity?

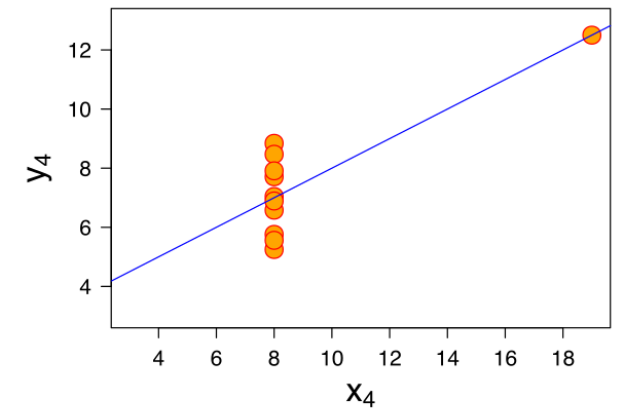
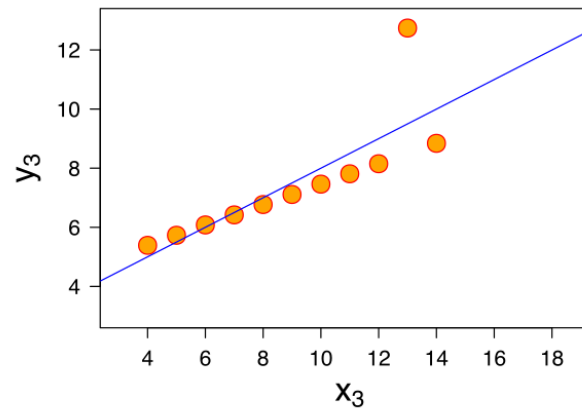
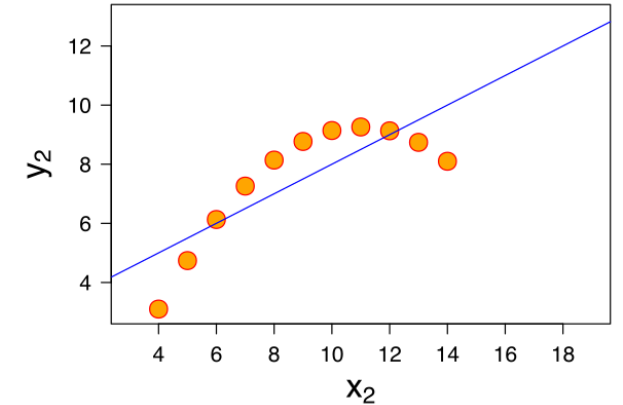
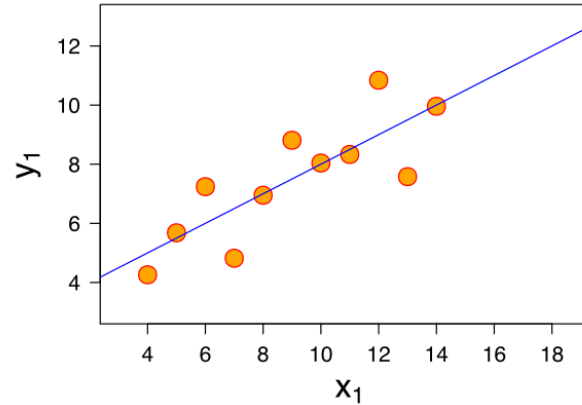
Source: This number is from the Current Situation Report California Fires – Multiple Counties, CA – 11 Oct 17 (Update 02), National Protection and Programs Directorate, Office of Infrastructure Protection



Seeing the Context

Anscombe's Quartet shows that only looking at numbers can mask a lot of variations

These graphs have essentially the same mean of x and y, sample variances of x and y, and correlations, and linear regressions.



Charts created by Francis J. Anscombe, 1973

Confidence Intervals

29% (CI: 7-65%)
21% (CI: 0-89%)

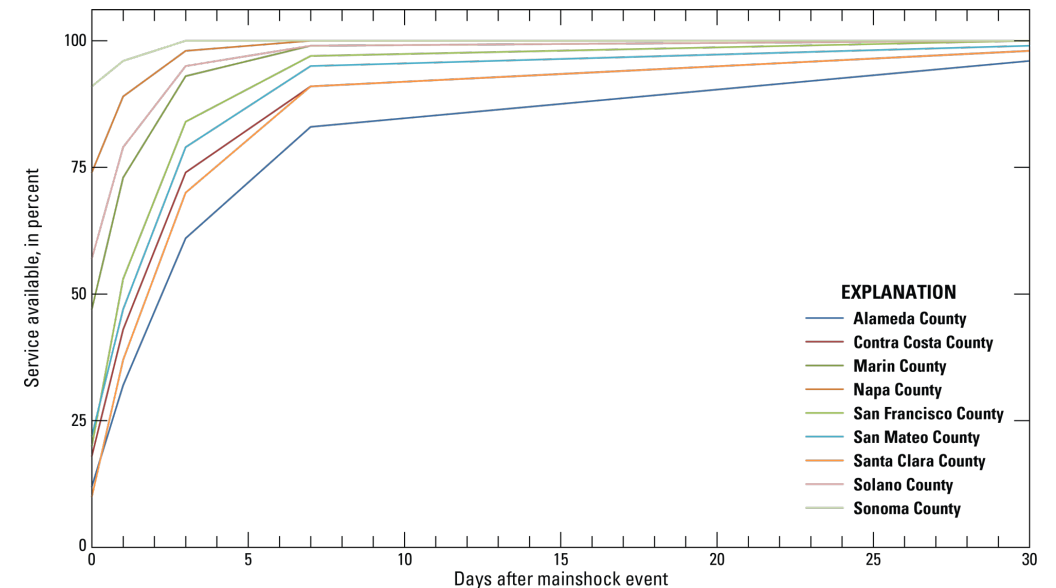
Variant	Region	Trending	Time Periods		
			Weighted Estimates (95% Confidence Interval)		NowCasts (95% Confidence Interval)
			Nov 23 – Dec 20	Dec 21 – Jan 17	Jan 18 – Feb 14
XFG	US		57% (55-60%)	46%* (43-49%)	29% (7 – 65%)
	R9		68% (63-73%)	65% (60-70%)	Not available
NB.1.8.1	US		8%* (6-9%)	7%* (6-9%)	21% (0-89%)
	R9		6% (4-10%)	9%* (7-13%)	Not available
XFG.2.5.1	US		2%* (2-3%)	4%* (3-6%)	16% (8-28%)
	R9		0%* (0-2%)	0%* (0-2%)	Not available

* Estimate is less reliable based on one or more violations of NCHS data presentation standards for proportions

Source: COVID-19 Variant Prevalence as shown on the CDC Data Tracker on March 3, 2026;
excerpt of information shared in the California Resiliency Alliance’s Infectious Disease Brief that day.

Assumptions Behind the Calculations

HayWired Scenario – Power Restoration: Overall in the Bay Area, by the end of the first week 6% of households in the region remain without power, though the numbers are not evenly distributed. By the end of the first month less than 2% of households in the region will still be without power. After three months, 0.1% of households will potentially still be without power.





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HayWired Scenario – Power Restoration: Overall in the Bay Area, by the end of the first week 6% of households in the region remain without power, though the numbers are not evenly distributed. By the end of the first month less than 2% of households in the region will still be without power. After three months, 0.1% of households will potentially still be without power.

In the Footnotes: Electric power restoration estimates from Hazus are calculated at the census-tract level based on the tract's total population and each substation's power outage probability. **Power service outages are assumed to be dependent on the functionality (or lack thereof) of the region's substations.** ... The average for each county is established based on the outage percentages for each substation relative to each substation's service area.



Misty Sources

Seeing when sources and information start disconnecting

Circular Information Loops



“40% of Small Business Fail Post Disaster”

"In general, said David Passey, a spokesman for the Federal Emergency Management Agency, 40% of small businesses severely affected by a natural disaster will not reopen." (Source: Tornado Leaves Quite a Paper Trail in Downtown Fort Worth, LA Times April 2000)

According to David the figure was already years old back then.

“40% of Small Business Fail Post Disaster”

“4 out of 10 firms never reopen after losing their records in fire.”

Nation's Business July 1948

and is being tested out for a score of other industrial uses. For refractory purposes, it may bring a big cost saving in reducing the firing time.

“Wet” water is a natural for fire fighting, and the Government is said to be interested in its possibilities for use in forest protection. Undergrowth may be soaked on top and fire still lurk beneath. “Wet” water speeds the moisture to where it is required.

Industrial design

INDUSTRIAL design as a profession is fairly new. It had its big jump in the years from 1935 to 1937, according to a joint study made by the American Management Association and the Society of Industrial Designers.

Since this was about the time the supermarkets in the food field began to expand rapidly, there is doubtless a connection.

It can be argued, certainly, that when the packaged product must exert appeal without the honeyed words of a good sales clerk, the design cannot be left to chance. For that matter, the new automobile must also get passing marks in a glamour test.

Both staff and consultant designers are employed in trade and industry.

Consumer companies use more of both, 54 per cent, than do industrial concerns, according to the results of the association survey.

Business expectancy

LIFE expectancy governs insurance and business life expectancy some time may become an essential in credit-rating.

The new census figures will shed more light on the subject but in 1939 the average lifetime of all retail stores was 12 years. About one half of the 1,770,355 stores had been in business nine or more years and one-quarter for at least 17 years.

General stores with food apparently have the greatest longevity. The average was 21 years. Liquor stores had the shortest life, if a merrier one, with four years.

Atomic accidents

WHAT could easily be the most dangerous job in the world—working in an atomic power plant—has a remarkable safety record. William E. Hollis, safety engineer at the Los Alamos Scientific Laboratory in New Mexico, told an in-

YOUR Business Future?

A little pile of ashes, a few charred papers—all that remains of a bright future.



These were the records a company must have to do business.

4 out of 10 firms never reopen after losing their records in fire.

You must protect your records—and ordinary files won't save them in a real fire. Only a modern safe offers dependable protection—and unless your safe carries the label of the independent Underwriters' Laboratories, Inc., you simply cannot rely on it!

The Mosler "A" label safe—tested for at least 4-hour fire protection—is the finest protection your records can have. Yet these safes actually cost far less than you'd expect.

Don't wait until fire strikes—write today for the address of your local Mosler dealer and the free booklet "What You Should Know About Safes." Please address Dep't 37.

The Mosler Safe Co.
Established 1848



All the conveniences of a fire with the protection of a safe in Mosler insulated Record Containers.



Mosler "A" Label Safe with burglary resistance chart for dual protection against fire and burglary.

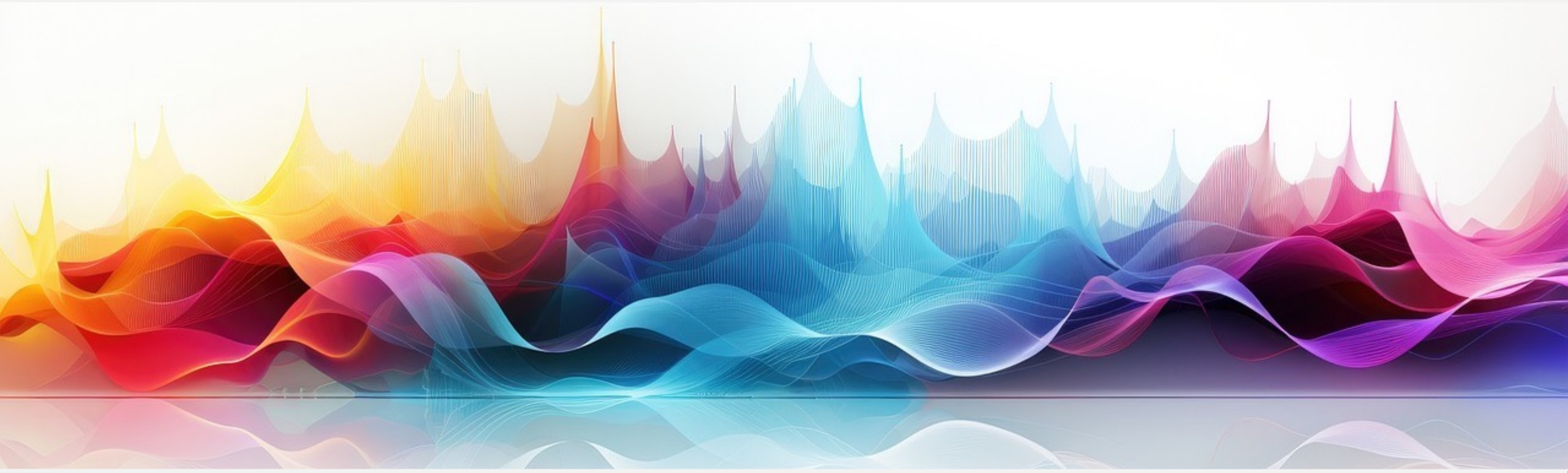
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NATION'S BUSINESS for July, 1948



Artificial Intelligence

Thinking about the future implications



**False Narratives
& Deep Fakes**



**Synthetic
Data**



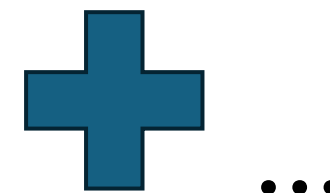
**Disconnected
Data**



Iterative Change



Noise





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“Information flows across space and time in unpredictable ways, creating new structures and forms as the situation requires.”

~ Reuben McDaniel, Jr.
Professor Emeritus