

Wicked Problems in Design Thinking

Richard Buchanan's Article

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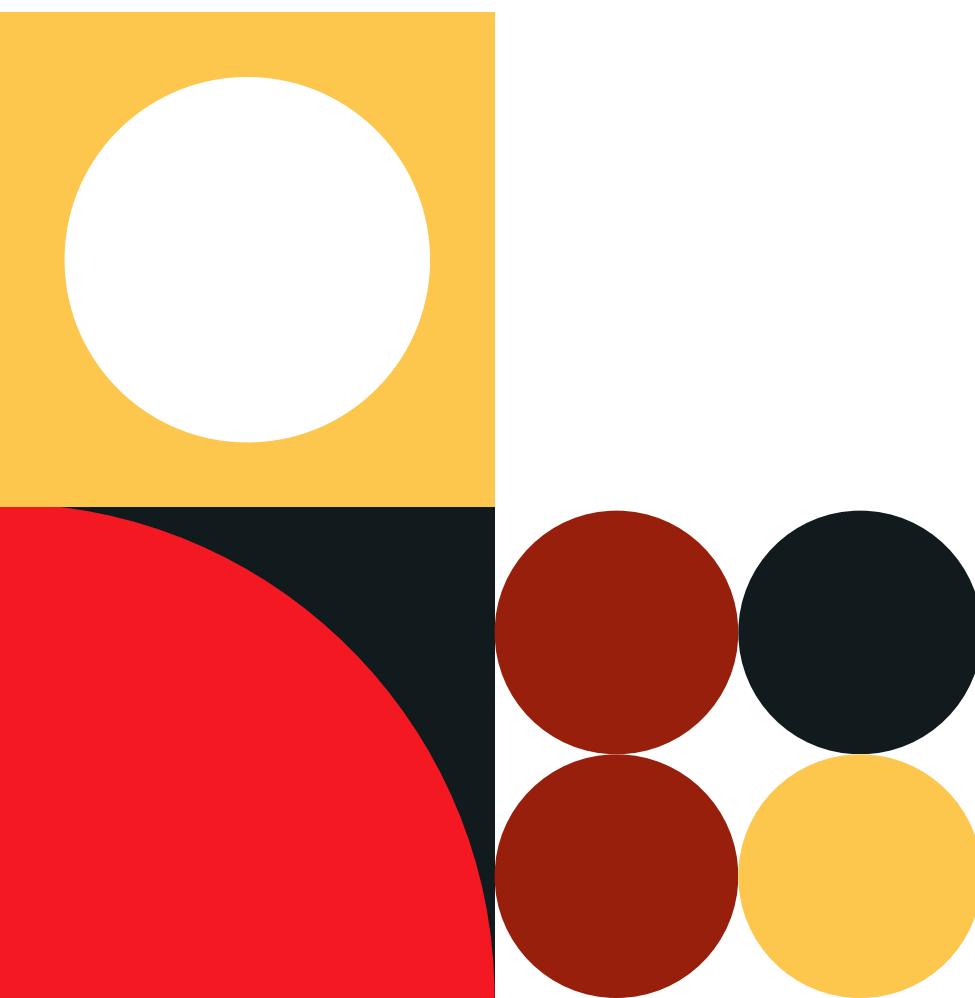
Buchanan & Design Thinking

Richard Buchanan (1992) → expanded design thinking as a liberal art for a tech-saturated society

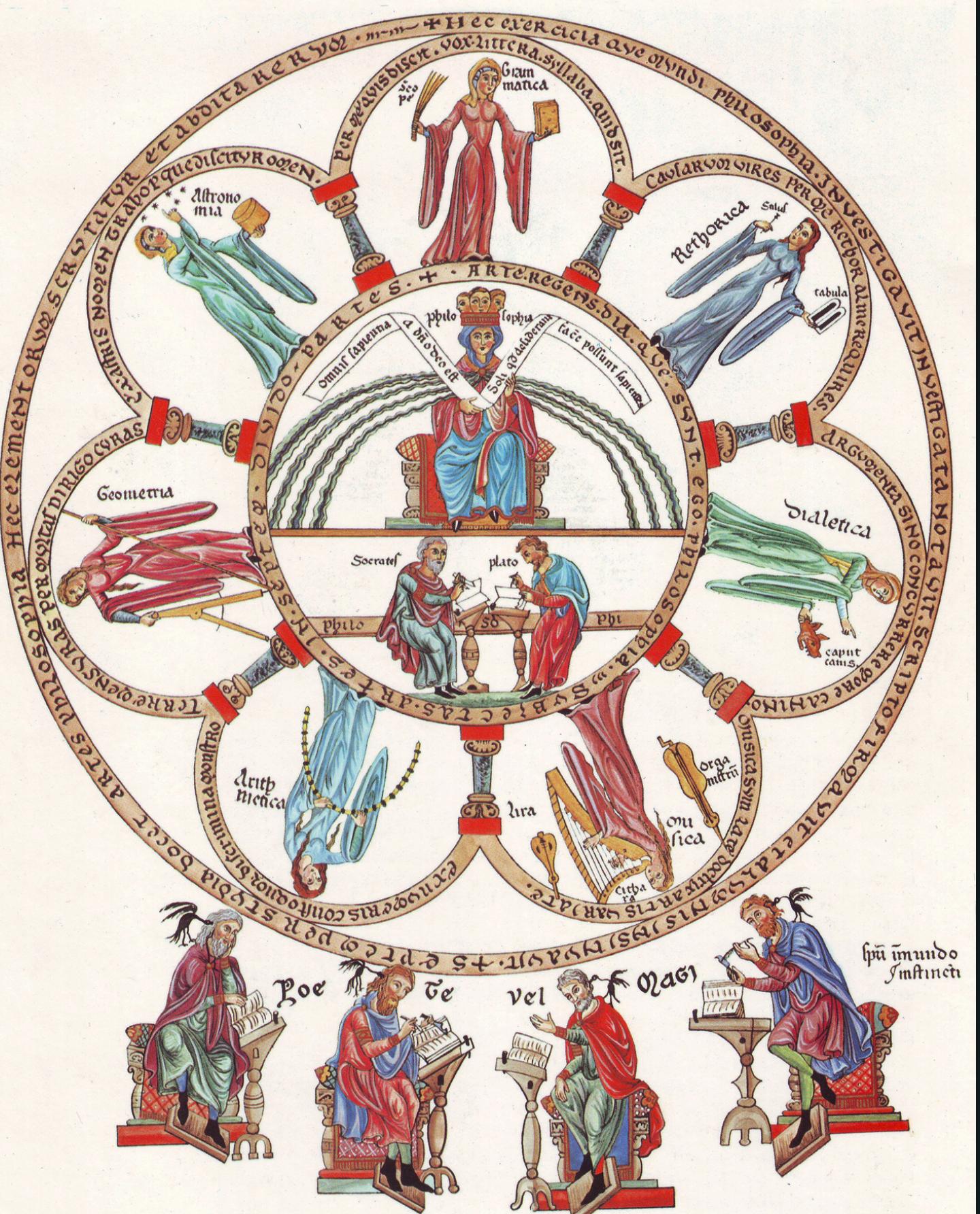
Defined design as a “new liberal art” suited for the complexity of technological society and cultivating judgement about how technologies shape human life.

Liberal arts = once core to human education → now reimagined through design.

Purpose: to integrate knowledge, creativity, and technology into problem-solving.



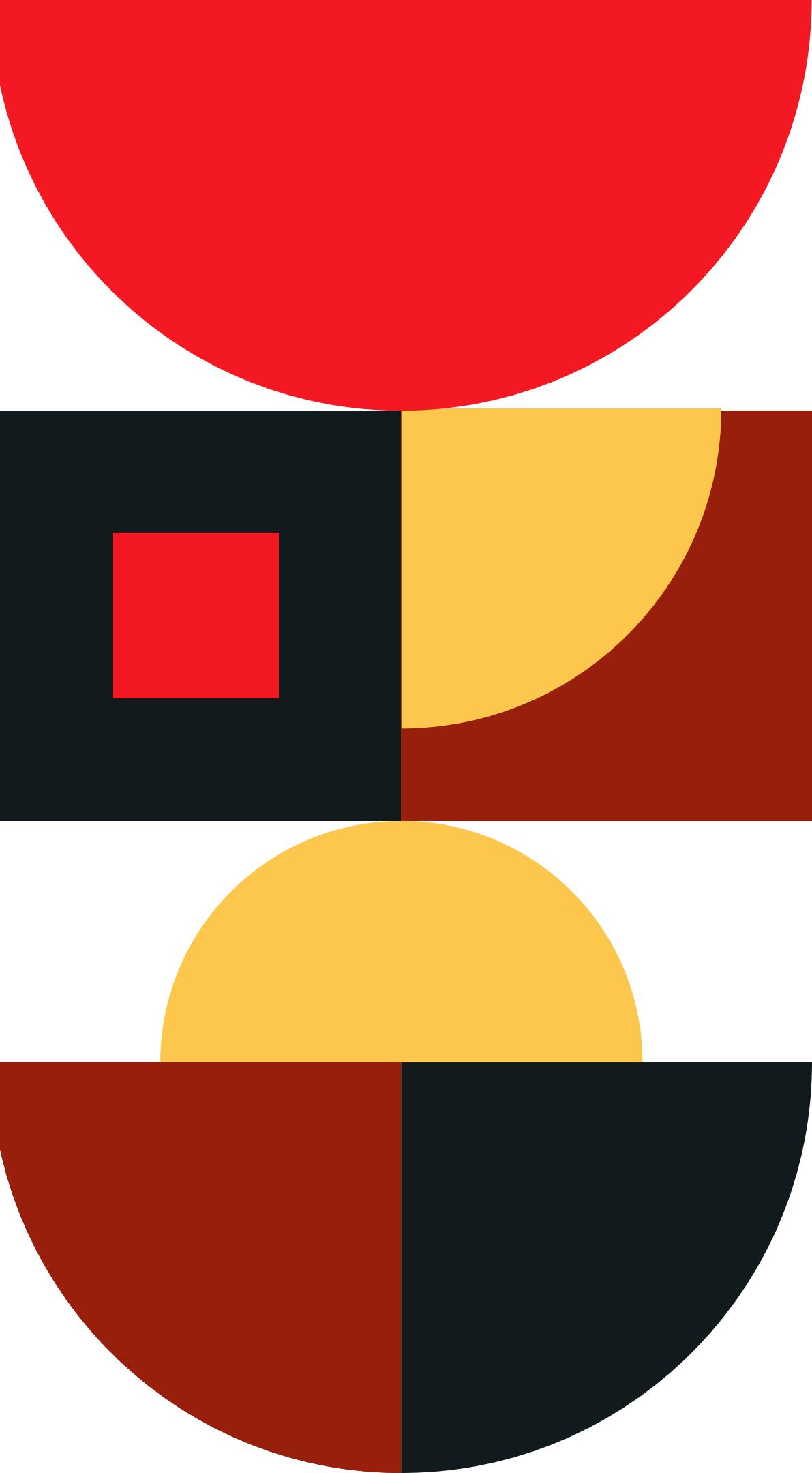
What does “New Liberal Art” mean?



- Design isn't just a trade or a profession. It's a fundamental way of thinking and a discipline of inquiry.
- The old liberal arts (like history, philosophy, and the sciences) have become so specialized that they've lost their connection to everyday problems.
- Design thinking fills this gap. It's an integrative discipline that combines knowledge from the arts and sciences to solve real-world problems.
- Focus: design as a way to connect disciplines (engineering, business, art, social sciences).

Four Areas of Design

- **Symbols and Communication:** This includes graphic design, but has expanded to the communication of ideas and arguments through a new synthesis of words and images.
- **Material Objects:** It goes beyond product form to explore the psychological, social, and cultural relationships between objects and people.
- **Activities and Services:** This area focuses on organizing and optimizing human experiences and the flow of actions.
- **Complex Systems and Environments:** This involves architecture, urban planning, and broader ecological thinking, unifying diverse elements into a cohesive whole.

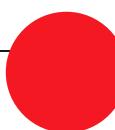


Why does it matter today?



HELPS NAVIGATE
TECHNOLOGICAL
COMPLEXITY

(AI, social media, global systems).



ENCOURAGES
COLLABORATION ACROSS
SECTORS

(gov, industry, communities)



OUTCOME: DESIGN AS A
CULTURAL PRACTICE, NOT
JUST A TECHNICAL SKILL.



PROVIDES A FRAMEWORK
FOR TACKLING WICKED
PROBLEMS

(climate change, fake news, inequality)



FACTS

**FAKE
NEWS**

The Fake News Challenge

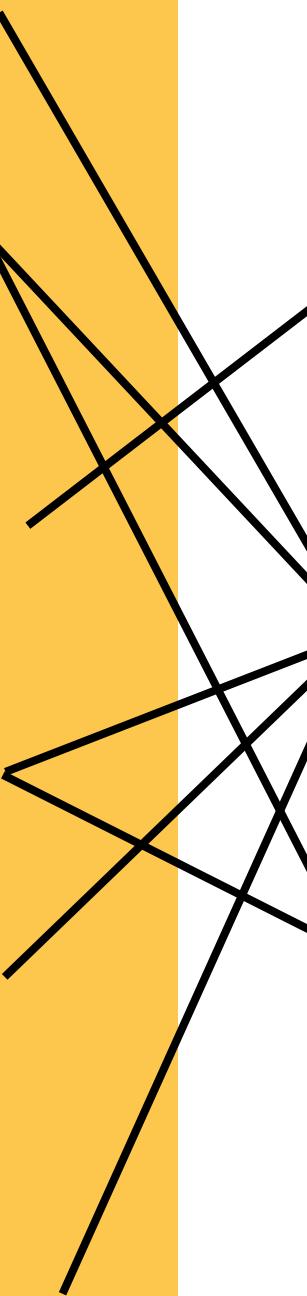
- Misinformation spreads faster than the truth.
- Fuels division, violence, and distrust.
- Platforms optimize for clicks, not accuracy.
- Attention beats accuracy
- Core dilemma: Free speech vs. harm prevention.
- Platforms face new transparency & risk-mitigation duties

Question 1) Due to rapid spreading of fake news and hate speeches during the recent global political turmoil, your team must provide preventive measures for the netizens. (MediaLiteracy)

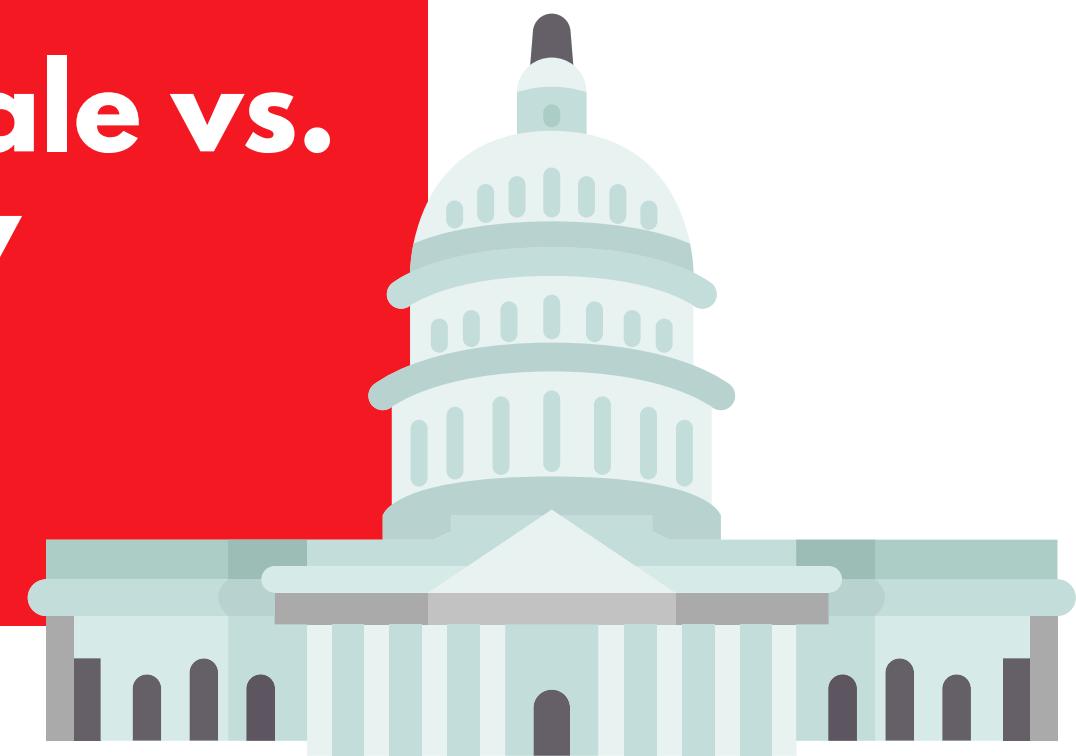
Stakeholders & Conflicts



- **Citizens**
want truth, often share emotional content.
- **Governments**
promote stability, risk overreach.
- **Tech firms**
engagement-driven, face regulation.
- **NGOs**
need credibility, lose to virality.
- **Media**
protect free expression & safety.
- **Educators**
promote literacy, underfunded.



- **Profit vs. Ethics**
- **Free speech vs. Regulation**
- **Global scale vs. Local Law**



Solutions: Platforms & Policy



PLATFORM UX CHANGES

“Have you read this before sharing?” prompts.

Labels on flagged/false posts.

Stronger fact-checking partnerships.
Integration with AI solutions



ALGORITHM & TRANSPARENCY

- Reduce amplification of harmful content, monitor PDPA rules, hate speech, extremist views.
- EU DSA → mandatory risk audits for big platforms.



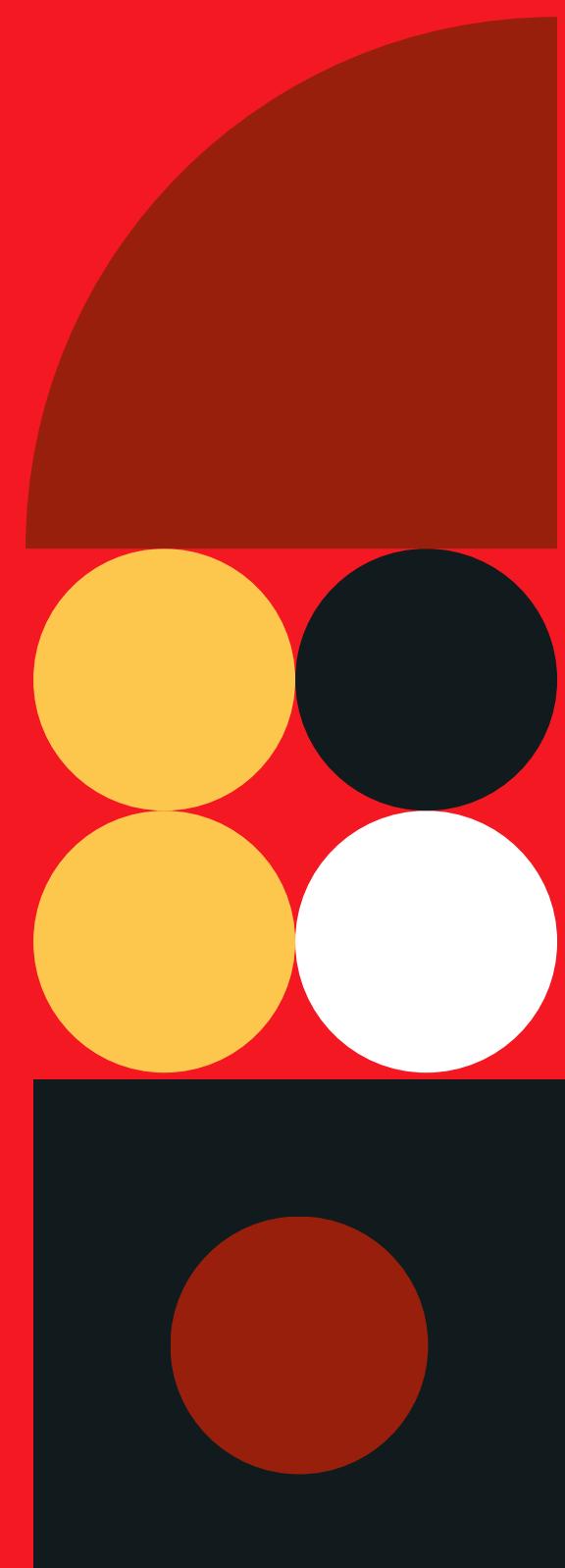
PREBUNKING STRATEGIES

- Google Jigsaw → Targeted ads teaching manipulation prevention. Ethical Recall
- Works like “vaccination” against disinformation.
- Citations available, similar to YouTube



INTERNATIONAL STANDARDS

UNESCO’s Global Media & Information Literacy framework → adaptable in schools worldwide. EDUCATION IS POWER



Solutions: Education & Community

National Media Literacy Education

- Integrate digital/media literacy into school curricula (fact-checking, source evaluation, bias detection).
- Launch public awareness campaigns to reach parents and adults.

Whole of Society Engagement

- Encourage public-private partnerships (gov, NGOs, tech firms) to run literacy workshops.
- Develop community-based peer training so citizens can teach each other how to spot fakes.

Community Counterspeech & Civic Action

- Train volunteers to counter hate speech with respectful, fact-based responses.
- Create safe online communities that promote dialogue and discourage toxic speech.

Question 48) Global water scarcity is accelerating. Your environmental consulting firm is tasked with proposing equitable policies for water usage among agriculture, industry, and households. (ResourceManagement)

The World's Water Crisis

Rising Demand vs. Limited Supply: Agriculture (70% of freshwater use), Industry (20%), Households (10%).

Climate Change Impact: Droughts, irregular rainfall, shrinking freshwater sources.

Inequity in Access: Developing regions face shortages; wealthy regions often overconsume.

Urgency: By 2030, global demand may outstrip supply by 40% (UN estimate).

Stakeholders & Conflicts

- **Agriculture**

largest consumers, want cheap water.

- **Industries**

need stable supply, often pollute sources.

- **Households**

basic right to clean water.

- **Governments**

balance development with sustainability.

- **NGOs**

push for conservation, fight overuse.

- **Upstream vs Downstream nations**

- **Food security vs. water conservation**

- **Industry vs Environment**

- **Price and access**

Solutions for Equitable Water Management

AGRICULTURE

- Incentivize drip irrigation & precision farming.
- Support crop-switching to less water-intensive crops.

INDUSTRY

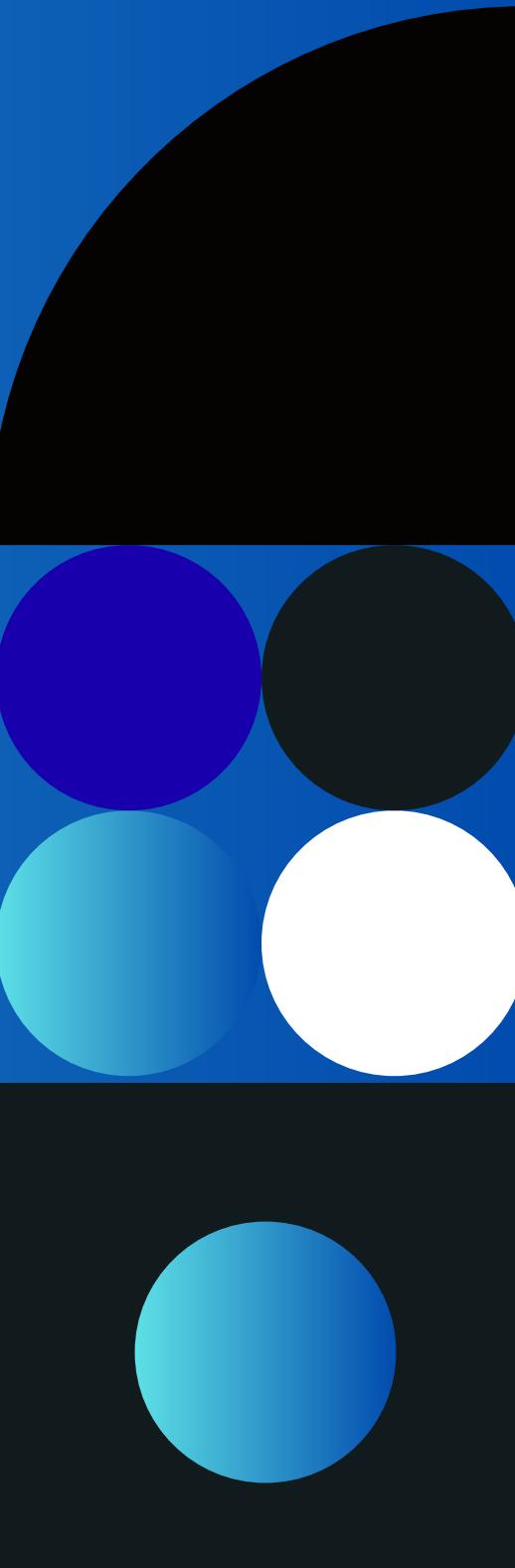
- Enforce water efficiency standards.
- Require wastewater reuse & recycling.

HOUSEHOLDS

- Introduce tiered water pricing to encourage conservation.
- Run public awareness campaigns on sustainable water use.

GLOBAL GOVERNANCE

- Strengthen transboundary river treaties (Mekong, Nile, etc.).
- Encourage regional cooperation for shared resources.



Innovations

INVEST IN DESALINATION

- Use solar or wind energy to make seawater drinkable; reduces dependence on rivers and groundwater, especially for coastal and arid regions.

SMART IRRIGATION & IOT MONITORING

- Sensors track soil moisture and weather patterns; deliver just the right amount of water, minimizing waste and boosting crop yields.



Thank you

