The History of Information Technology and Ethics

Five Revolutions from Writing to the Web

Brendan Shea, PhD
Rochester Community and Technical College
PHIL 1150: Computing and AI Ethics

Before We Begin: Who Is Complaining, and About What?

Someone, somewhere, about some new technology

"This invention will produce **forgetfulness** in the minds of those who learn to use it, because they will not practice their memory.
You offer your pupils the **appearance of wisdom**, not true wisdom, for they will read many things without instruction and will therefore *seem* to know many things, when they are for the most part ignorant."

Commit before we go on

What technology is being attacked here? Who is speaking, and **what year**? Write down your guess — no consulting your phone.

The Answer: Socrates, About Writing, c. 370 BCE

Plato, *Phaedrus* 275a–b. Socrates relays King Thamus's verdict on the god Theuth, who has just invented **writing** and is proud of it.

Why start a course on AI ethics here

Every charge we now level at phones, social media, and chatbots — that they rot memory, counterfeit understanding, and substitute the **appearance** of knowing for the real thing — was leveled first at the alphabet, and then at printing, the telegraph, radio, and television.

That is not a reason to dismiss the charge. Sometimes the critics were right. The point is that we have **2,400 years of data** on how this argument goes, and we would be foolish not to look at it.

Central Questions

- What are the five major IT revolutions, and what ethical patterns do they share?
- Why does every revolutionary technology promise liberation yet enable new forms of control?
- How have optimists and pessimists responded to each revolution—and who was right?
- How do economic and political interests shape the impact of technology?
- What historical lessons should we carry into our analysis of AI, IP, and surveillance?

Discussion

Can you think of a recent technology that promised freedom but has been used for control?

Lecture Outline

Introduction: Information Technology and Ethics

Revolution 1: Writing

Revolution 2: The Printing Press

Revolution 3: Distance Communication

Revolution 4: Mass Media

Revolution 5: The World Wide Web

Conclusion: Patterns and Lessons

Why Start with History?

This course moves from **history** → **ethical frameworks** → **contemporary issues**. Understanding IT history matters because:

- **Patterns repeat**: The "concerns" about social media echo Orwell's and Arendt's warnings about TV
- **Power matters**: Technology serves whoever controls it—this lesson runs through every revolution
- **Speed of change**: Digital tech disrupted IP law, surveillance systems, and labor—understanding this helps us think critically about AI

Key Insight

When debates about technology seem new, they're often ancient questions in modern dress.

Discussion

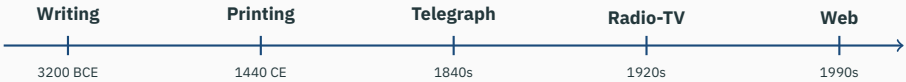
Looking ahead to our study of virtues, free speech, IP, and AI—what historical lessons might apply?

What is Information Technology?

Definition: Technologies for **creating**, **storing**, **transmitting**, and **processing** information.

Key Insight

Information technology is **ancient**—not just computers!



What is Normative Ethics?

Definition: The branch of philosophy concerned with how we **ought** to act.

Three Branches of Ethics

- **Descriptive Ethics:** What people *do* believe about right and wrong
- **Normative Ethics:** What people *should* believe about right and wrong
- **Metaethics:** The nature of morality itself (e.g., Are moral facts real?)

Key Insight

Ethics is also **ancient**—as old as philosophy itself!

The Five IT Revolutions

Roadmap for Today's Lecture

We will examine five major information technology revolutions, each with its own debates, promises, and unforeseen consequences.

#	Revolution	Approximate Date	Key Thinkers
1	Writing	~3200 BCE	Socrates, Plato
2	Printing Press	~1440 CE	Luther, Erasmus
3	Distance Communication	~1840s	Mill, Marx
4	Mass Media	~1920s	Orwell, Arendt
5	The Web	~1990s	Current debates

Central Theme

Each revolution promised liberation—and each enabled new forms of control.

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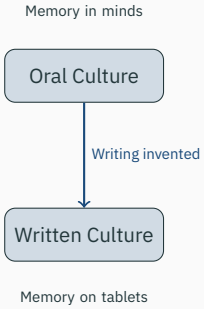
Revolution 1: A Brief History of Writing

Key Developments

- **Cuneiform** in Mesopotamia (~3200 BCE)
- **Egyptian hieroglyphics** (~3100 BCE)
- **Phoenician alphabet** (~1050 BCE)
- **Greek alphabet** (~800 BCE)

Writing as Memory Technology

Writing **externalizes** information—storing it outside the human mind for the first time.



Transition from oral to written culture

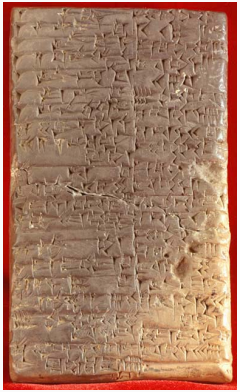
Cuneiform: The World's First Writing System

Key Facts

- Developed in **Mesopotamia** (modern Iraq), c. 3200 BCE
- Originally used for **bookkeeping**—tracking grain, cattle, and trade
- Impressed into **wet clay tablets** using a reed stylus
- Later adapted for laws, literature, and religion

Legacy

The oldest surviving literary work—the *Epic of Gilgamesh*—was recorded on cuneiform tablets around 2100 BCE.



Cuneiform tablet, c. 2041–2040 BCE. Kirkor Minassian collection, Library of Congress. Public domain.

Who Were Socrates and Plato?

Socrates (c. 470–399 BCE)

- Athenian philosopher; wrote **nothing**
- Taught through **dialogue** and questioning
- The "**Socratic method**": Learn by examining your own beliefs
- Executed for "corrupting the youth"
- We know him only through others' writings

Plato (c. 428–348 BCE)

- Socrates's most famous student
- Founded the **Academy** in Athens
- Wrote **dialogues** featuring Socrates
- Key works: *Republic*, *Phaedrus*, *Apology*
- Preserved Socrates's ideas *in writing*

The Central Irony

Socrates distrusted writing—but we only know this **because Plato wrote it down**. Would Socrates have approved of Plato's project?

Socrates and Plato's Worries About Writing

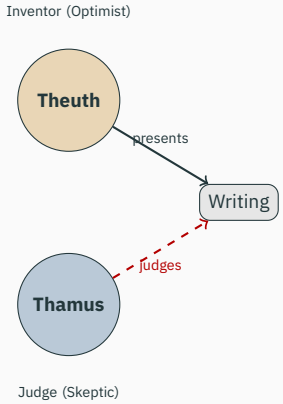
The Irony

Socrates never wrote anything down—yet we know his views through **Plato's** written dialogues. The myth itself is almost certainly **Plato's own invention**, not an Egyptian tradition he inherited: he wrote a story against writing, and it survives because he wrote it.

Plato's *Phaedrus* (c. 370 BCE)

Socrates tells the **myth of Theuth and Thamus**:

- **Theuth**: Egyptian god who invents writing
- **Thamus**: King who must judge the invention
- Theuth claims writing will make people "wiser"



The myth of Theuth and Thamus

Quote: Plato's *Phaedrus* on Writing

Plato, *Phaedrus*, 275a-b (Fowler trans.)

Context: King Thamus responds to Theuth's claim that writing will improve memory and wisdom:

*"For this invention will produce **forgetfulness** in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them.*

*You have invented an elixir not of **memory**, but of **reminding**; and you offer your pupils the **appearance of wisdom**, not true wisdom, for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant and hard to get along with, since they are not wise, but only **appear** wise."*

Key Distinctions

Memory (internal) vs. **Reminding** (external) | **True wisdom** vs. **Appearance of wisdom**

Socrates's Argument Against Writing

Argument in Standard Form

1. True knowledge requires **active engagement**, dialogue, and the ability to respond to questions.
2. Writing **cannot respond** to questions or adapt to its audience.
3. Writing therefore creates the **appearance of wisdom** without its reality.

∴ Writing is **inferior** to living discourse for producing genuine understanding.

Discussion

Is this argument **sound**—what might Socrates be missing? (The paradox: we only know his case against writing *because Plato wrote it down*.)

Social Consequences of Writing

👍 Benefits

- **Law codes** (Hammurabi, Torah)
- **Historical records** and memory
- **Literature** and poetry
- **Religious texts** preserved
- **Scholarship** across generations
- **Contracts** and commerce

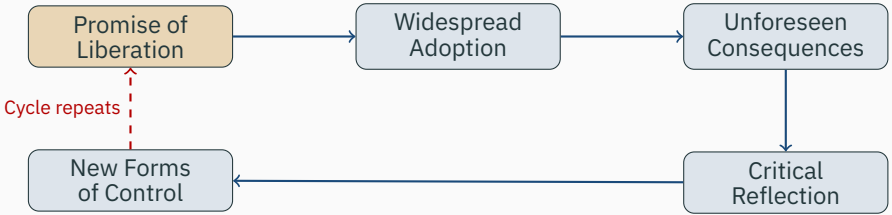
👎 Harms

- **Imperial administration** and control
- **Social stratification**: literate elite vs. illiterate masses
- **Loss of oral traditions**
- **Bureaucratic power** over individuals
- **Propaganda** becomes possible

Key Insight

The same technology that enables law and literature also enables empire and control.

The Pattern Emerges



Recurring Themes

- New IT **promises liberation** and democratization
- Critics warn of **unintended consequences**
- **Both** turn out to be partially right
- The technology **serves whoever controls it**

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Revolution 2: A Brief History of Printing

Key Developments

- **Chinese woodblock printing** (9th century CE)
- **Gutenberg's movable type** (~1440, Mainz, Germany)
- **Rapid spread** across Europe: Venice, Paris, London
- **Economics**: Cost of a book drops dramatically

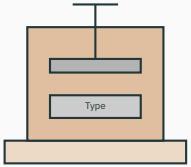
Scale of Change

Before printing: A single book might cost as much as a **house**.
After printing: Books become affordable to the middle class.

Johannes Gutenberg and the Printing Press

Johannes Gutenberg (c. 1400–1468)

- German goldsmith and inventor
- Developed **movable type** (∼1440)
- Key innovations: metal alloy type, oil-based ink, wooden press adapted from wine presses
- **Gutenberg Bible** (1455): First major book printed in Europe
- Died in relative obscurity



Printing Press

The Impact

By 1500: ∼20 million books printed in Europe (vs. a few thousand manuscripts before)

The Gutenberg Bible (1455)

The First Major Printed Book

- Approximately 180 copies printed; about 49 survive
- Two folio volumes, 1,282 pages in total
- Quality rivaled the finest hand-copied manuscripts
- Each copy cost roughly **30 florins**—about 3 years' wages for a clerk

Why It Matters

The Bible was the era's ultimate test case: could machine printing match the quality and authority of hand-copying?



Gutenberg Bible (Lenox Copy), New York Public Library. Photo: Kevin Eng. CC BY-SA 2.0.

Luther vs. Erasmus: Revolution vs. Reform

Martin Luther (1483–1546)

- Used the press to spread **radical reformation**
- 95 Theses (1517) spread across Germany in **weeks**
- German Bible becomes a **bestseller**
- Saw printing as **providential**

Erasmus of Rotterdam (1466–1536)

- Advocated **gradual reform** through scholarship
- Worried about **unlearned masses** reading complex texts



Key Question

Same technology, different visions—who gets to decide how it's used?

Quote: Martin Luther on Printing

Martin Luther on the Printing Press

Context: Luther was among the first to grasp printing's power: his 95 Theses (1517) spread across Germany in weeks, and his German Bible became a bestseller. For Luther, this was providential.

*"The art of book printing is the **last and greatest gift** because it is through this that the question of the true religion will become known to the **entire world**—to the very ends of the earth and in all languages—in accordance with God's will. It is the **inextinguishable flame** of the world."*

—attributed to Martin Luther, via Otto Clemen

A note on sources: this famous quote circulates widely but cannot be traced to Luther's own writings—it reaches us secondhand. (Sound familiar? We only know Socrates through Plato, too.)

The Tension

Luther sees printing as **divinely ordained** for spreading truth. But the same press spreads what Luther would call **error**—and Luther's own late polemic "On the Jews and Their Lies" was later cited by Nazis to justify anti-Semitic policies.

The Erasmian Counterargument

Argument in Standard Form

1. Rapid, uncontrolled spread of ideas leads to **misunderstanding and conflict**.
2. Complex theological and philosophical texts require **learned interpretation**.
3. The printing press enables **unlearned masses** to access such texts without guidance.

∴ Printing requires **responsible gatekeeping** and scholarly mediation.

Discussion

Both Luther and Erasmus have a point. Who gets to be the **gatekeeper**, who decides—and is there a middle ground?

Social Consequences of Printing: The Good

👍 Benefits of the Printing Revolution

- **Scientific Revolution**: Sharing of data, replication of experiments, cumulative knowledge
- **Mass literacy campaigns**: Reading becomes a widespread skill
- **Vernacular literature**: National languages emerge (Dante, Shakespeare, Luther's German)
- **Religious diversity**: Individual conscience, Protestant Reformation
- **Philosophical treatises** widely available (Enlightenment becomes possible)
- **Standardization**: Spelling, grammar, shared reference texts

The Promise Fulfilled

Printing *did* democratize knowledge and enable new forms of intellectual community.

Social Consequences of Printing: The Bad

👎 Dark Side of the Printing Revolution

- ***Malleus Maleficarum*** (1487): The witch-hunting manual becomes a bestseller
- **Anti-Semitic pamphlets**: Pogroms spread with printed propaganda (e.g., Luther's later writings)
- **Religious wars**: Thirty Years' War (1618–1648) kills ∼8 million
- **Propaganda and polarization**: Pamphleteering as political warfare
- **State power consolidated**: Printed laws, surveillance records, bureaucracy

Discussion

Does the printing press bear **responsibility** for the witch trials—or is it just a tool? (The same press enabled the Scientific Revolution *and* mass propaganda.)

The Pattern Repeats

	Writing	Printing
Promise	Preserve knowledge	Democratize knowledge
Optimist	Theuth	Luther
Pessimist	Thamus/Socrates	Erasmus
Benefits	Law, literature, scholarship	Science, literacy, Enlightenment
Harms	Empire, bureaucracy	Religious war, propaganda
Key Question	Who controls access?	Who controls the press?

Emerging Insight

The technology **amplifies human intentions**—both good and bad. The question is always: **Who controls it, and for what ends?**

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Revolution 3: The Technologies of the Long 19th Century

Key Innovations

- **Telegraph** (1840s)—"The Victorian Internet"
- **Telephone** (1876)—Voice across distance
- **Undersea cables**—Connecting continents
- **Postal systems and railroads**—Physical distribution at scale
- **Photography and recorded sound**—New forms of documentation

The Optimistic 19th Century

Many believed these technologies would **unite humanity** and **end war** through better communication.

The Telegraph: “The Victorian Internet”

How It Worked

- **Morse code**: Letters as electrical pulses (dots and dashes)
- Messages sent through **copper wires**
- Required **trained operators** at each end

Key Milestones

- **1858**: First transatlantic cable (failed after weeks)
- **1866**: Permanent transatlantic connection
- **1870s**: Global network connects continents

The Hype

“The telegraph will unite all nations… Wars will cease to exist… The reign of peace will begin.”

—Common 19th-century predictions

Sound Familiar?

Compare to claims about the internet “democratizing” information and “connecting” the world.

Samuel F.B. Morse: Artist Turned Inventor

Samuel Morse (1791–1872)

- Began his career as a **portrait painter**—not an engineer
- Inspired to build the telegraph after his wife died while he was away on commission
- Developed **Morse code** in the 1830s: letters as electrical dots and dashes
- First message (1844): "*What hath God wrought!*"
- Became one of the wealthiest men in America



Samuel F.B. Morse, 1840. Archives of American Art, Smithsonian Institution. Public domain.

Who Were Mill and Marx?

John Stuart Mill (1806–1873)

- British philosopher and economist
- Child prodigy; educated by his father
- Member of Parliament (1865–68)
- Champion of **individual liberty**
- Early advocate for **women's rights**
- Key work: *On Liberty* (1859)

Karl Marx (1818–1883)

- German philosopher and economist
- Exiled from Germany, France, Belgium
- Lived in poverty in **London**
- Studied in British Museum library
- Founded **communist theory**
- Key works: *Communist Manifesto*, *Das Kapital*

Why Their Debate Matters

Mill and Marx offer fundamentally different analyses of **technology and power** that still shape debates today: Is technology neutral, or does it serve whoever owns it?

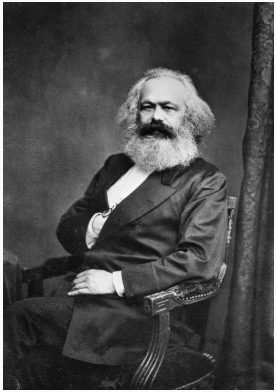
Karl Marx: Technology, Power, and Ownership

The Marxist Critique

- Technology is **not neutral**: it reinforces existing power structures
- Press and telegraph served **bourgeois** commercial interests
- Whoever **owns** the means of communication controls discourse
- “The ruling ideas of each age have been the ideas of its ruling class”

Discussion

Who owns today’s media—and does that shape the message?



Karl Marx (1818–1883). Public domain.

Mill vs. Marx: Liberal vs. Radical Visions

John Stuart Mill (1806–1873)

- Technology enables **individual liberty**
- “Marketplace of ideas”
- Truth wins through **free competition**
- Technology is a **neutral tool**

Karl Marx (1818–1883)

- Technology **serves owners**
- “Ruling ideas = ideas of rulers”
- Liberation requires **changing ownership**
- Technology is **shaped by power**

Same technology, different analyses

Mill: Technology is neutral ⟷ **Marx**: Technology reflects power

Quote: John Stuart Mill, *On Liberty* (1859)

“ John Stuart Mill, *On Liberty*, Chapter 2 (mill1859liberty)

Context: Mill argues for absolute freedom of expression, claiming that silencing any opinion—even a false one—harms everyone.

*“If all mankind minus one were of one opinion, and only one person were of the contrary opinion, mankind would be **no more justified in silencing that one person**, than he, if he had the power, would be justified in silencing mankind.*

*But the **peculiar evil** of silencing the expression of an opinion is, that it is robbing the human race; posterity as well as the existing generation; those who dissent from the opinion, still more than those who hold it. If the opinion is right, they are deprived of the opportunity of exchanging error for truth: if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth, produced by its **collision with error**.”*

The Assumption

Mill assumes a “marketplace of ideas” where truth wins out. What conditions must hold for this to work?

Marx's Counterargument

Argument in Standard Form

1. Those who **control the means of communication** control the dominant ideas in society.
2. Under capitalism, the **ruling class** controls the means of communication.
3. Therefore, "free" communication under capitalism primarily **serves ruling-class interests**.

∴ Genuine free communication requires **revolutionary change** in the ownership of communication technologies.

Discussion

Is Marx right that whoever **owns the technology** controls the message—or can you think of counterexamples?

Social Consequences of Distance Communication

Benefits

- Coordination of **reform and labor movements**
- **Investigative journalism**
- **Scientific collaboration** across borders
- **Family connection** across vast distances
- Commercial efficiency

Harms

- **Colonialism** and imperial coordination
- **Surveillance networks**
- Market manipulation and **speculation**
- Sensationalist **“yellow journalism”**
- **Cultural imperialism**

The Pattern Continues

The telegraph and telephone that connected families also coordinated empires.

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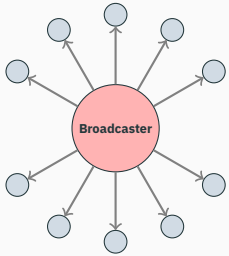
Revolution 5: The World Wide Web

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Revolution 4: The Rise of Radio and Television

Key Developments

- **Radio broadcasting** emerges in 1920s
- **Television** becomes dominant in 1950s
- **Structural shift**: Passive consumption, one-to-many broadcast model
- **Limited spectrum**: Corporate and state control



One speaks, millions listen passively

Who Were Orwell and Arendt?

George Orwell (1903–1950)

- Born Eric Arthur Blair in India
- British novelist, essayist, journalist
- Fought in **Spanish Civil War** (1936)
- Witnessed **Stalinist purges** firsthand
- Works: *Animal Farm*, *1984*
- Died of tuberculosis at 46

Hannah Arendt (1906–1975)

- German-Jewish philosopher
- **Fled Nazi Germany** (1933)
- Stateless refugee for 18 years
- Covered **Eichmann trial** (1961)
- Works: *Origins of Totalitarianism*, *Eichmann in Jerusalem*
- Coined "**banality of evil**"

Why Their Perspective Matters

Both Orwell and Arendt personally witnessed the rise of totalitarianism, and saw many of their (highly intelligent!) contemporaries fall under its sway. One key question for both concerned the *why* and *how* of this phenomenon. Mass media played a central role.

George Orwell's Warning

George Orwell (1903–1950)

- ***1984*** (1949): Dystopian novel about totalitarian media control
- The **telescreen**: Watches you while you watch it
- **Propaganda slogans**: "War is Peace, Freedom is Slavery, Ignorance is Strength"
- **Doublethink**: Holding two contradictory beliefs simultaneously

Orwell's Central Concern

A state **monopoly on information** makes **reality itself malleable**. If the Party controls all records, truth becomes whatever the Party says it is.

Historical Context

Orwell wrote *1984* in 1948, having witnessed the rise of Nazi Germany and Stalinist Russia—both masters of propaganda.

Quote: George Orwell, *1984*

“ George Orwell, *Nineteen Eighty-Four*, Book 1, Chapter 7 (orwell_1984)

Context: Winston Smith works at the Ministry of Truth, rewriting historical records. Here he reflects on the Party’s ultimate demand—not just obedience, but the surrender of one’s own perceptions.

*“The Party told you to **reject the evidence of your eyes and ears**. It was their final, most essential command. His heart sank as he thought of the enormous power arrayed against him, the ease with which any Party intellectual would overthrow him in debate, the subtle arguments which he would not be able to understand, much less answer.*

*And yet he was in the right! They were wrong and he was right. **The obvious, the silly, and the true had got to be defended. Truisms are true, hold on to that!**”*

The Ultimate Goal

Not just to make you believe lies, but to **destroy your capacity to distinguish truth from falsehood**.

Hannah Arendt on Mass Society

Hannah Arendt (1906–1975)

- ***The Origins of Totalitarianism*** (1951)
- The precondition wasn't **ideology** but **loneliness**
- Breakdown of social bonds leaves individuals vulnerable

Hannah Arendt, *The Origins of Totalitarianism*, Ch. 13 (arendt_origins)

*"What prepares men for totalitarian domination is the fact that **loneliness**, once a borderline experience suffered in marginal conditions like old age, has become an **everyday experience** of the ever-growing masses of our century."*

The Insight

Mass media doesn't just spread propaganda—it creates the **atomized individuals** who crave belonging enough to join movements promising meaning.

Arendt's Analysis of Propaganda

Argument in Standard Form

1. Mass society produces **atomized individuals** who feel superfluous.
2. The lonely **crave coherent explanations** that give life meaning.
3. Mass media delivers such explanations **to millions at once**.
4. Totalitarian movements **exploit this** with all-encompassing ideologies.

∴ Mass media plus mass loneliness creates conditions **favorable to totalitarianism**.

Discussion

Does social media make us **more or less lonely** than broadcast media did?

Social Consequences of Mass Media

👍 Benefits

- **Mass education**
- **Shared cultural experiences**
- Exposure to **diversity**
- **Rapid news dissemination**
- **Public health campaigns**
- Civil rights coverage

👎 Harms

- **Propaganda effectiveness**
- "Manufacturing consent"
- **Advertising and consumerism**
- **Political manipulation**
- Homogenization of culture
- **Passivity**: "The Lonely Crowd"

The Paradox

The same broadcast that showed the Civil Rights Movement to the nation also enabled unprecedented propaganda.

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Revolution 5: Web 1.0—The Read-Only Web (1990s)

Key Developments

- **Tim Berners-Lee** invents the World Wide Web (1989–1991)
- **Static pages**, hyperlinks, information retrieval
- Early **utopian visions**: Free information, democratization, disintermediation
- "**Information wants to be free**"—Stewart Brand

The Promise

The early web was hailed as the **great equalizer**—anyone could publish, anyone could access.

Web 2.0—The Participatory Web (2000s)

Key Developments

- **Social media**, user-generated content
- **Platforms**: Facebook, YouTube, Twitter/X, Wikipedia, TikTok
- **Promise**: Everyone becomes a creator, not just a consumer
- **Reality**: The attention economy and algorithmic curation



New Intermediaries

Platform companies become the new **gatekeepers**—and they're driven by advertising revenue.

Web 3.0?—Contested Futures

Competing Visions

- **Semantic web / AI integration**: Machines understand meaning
- **Blockchain and decentralization**: Removing intermediaries (?)
- **Virtual and augmented reality**: Immersive digital worlds
- **Artificial intelligence**: ChatGPT, image generation, and beyond

Utopian Vision

- Digital liberation
- Democratized AI tools
- Decentralized power

Dystopian Vision

- Surveillance capitalism
- Deepfakes and misinformation
- Algorithmic control

Discussion

What would a truly **decentralized** internet look like? Is it even possible?

Current Debates

Debate	Position A	Position B
Free speech vs. moderation	Maximize expression	Prevent harm
Privacy vs. convenience	Protect personal data	Enable services
Platforms as publishers?	Yes, they curate	No, they're neutral
Algorithmic amplification	Personalization helps	Manipulation harms
AI benefits vs. risks	Productivity gains	Job loss, misuse

The Recurring Question

Who decides? And on what basis?

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Patterns Across the Revolutions

Revolution	Technology	Optimist	Pessimist	Core Tension
Writing	Alphabet, scrolls	Theuth	Socrates	Memory vs. Reminding
Printing	Movable type	Luther	Erasmus	Revolution vs. Reform
Distance	Telegraph, phone	Mill	Marx	Free market vs. Ownership
Mass Media	Radio, TV	—	Orwell, Arendt	Information vs. Control
The Web	Internet, platforms	Early utopians	(Us?)	Liberation vs. Surveillance

Recurring Themes

- Each revolution promised **liberation and democratization**
- Each enabled **new forms of control and manipulation**
- The optimists and pessimists were **both partially right**
- The question is always: **Who controls the technology, and for what ends?**

You Be the Judge: The Phone Ban

The vote

Your school board is voting tonight on a **total ban on phones**, bell to bell, K–12. You are the deciding vote. Four consultants have filed briefs — and every one of them has been dead for at least fifty years.

Split into four groups. Argue the ban from your thinker's actual position, in two minutes:

- **Socrates**: the tool counterfeits the capacity it claims to extend
- **Erasmus**: the problem is not the press but the flood of bad print — teach judgment, don't ban
- **Marx**: ask who owns the device and who profits from the attention
- **Arendt**: ask what happens to a public that shares no common world

Then decide

Which brief would **change its own author's mind** if you showed them the last twenty years of evidence?

Key Concepts i

Information technology is any technology for creating, storing, transmitting, or processing information—it is ancient, not uniquely modern.

Theuth (Plato's *Phaedrus*) is the Egyptian god who invented writing and promised it would aid memory; **Socrates** argued it would weaken genuine understanding—the first recorded technology debate.

Luther embraced the printing press as a tool for mass reform; **Erasmus** feared an unfiltered flood of bad ideas. Both turned out to be right.

Mill saw telegraph-era communication as aligned with free markets and progress; **Marx** analyzed how communication infrastructure reflects and reinforces ownership and class power.

Orwell (*Nineteen Eighty-Four*) and **Arendt** (*Origins of Totalitarianism*) warned that mass media could become instruments of propaganda and totalitarian control.

Disintermediation is the removal of gatekeepers promised by every IT revolution; **reintermediation** is the new gatekeepers—platforms, telecoms, states—that reliably replace them.

Key Concepts ii

Artificial scarcity is scarcity created by legal or technical means (copyright, DRM) where the underlying resource is naturally non-rivalrous.

Discussion

Which of these thinkers or concepts will matter most as we move into AI, privacy, and labor?

References i