

The Case for **Outdated** Technology



4D Experience
UNIVERSITY OF DENVER



Outdated or Obsolete Technology

refers to **hardware, software, or processes** that are outdated, no longer supported, or have been largely replaced by newer, more efficient alternatives.

While it may still be *functional*, obsolete technology often becomes a **legacy system** that suffers from compatibility issues, security vulnerabilities, and higher maintenance costs compared to modern systems.

Examples include floppy disks, pagers, CRT monitors, and analog phones. At the same time, some vintage tech like *vinyl records* and *polaroid cameras* have seen a **resurgence** in popularity.





Why it Matters

Exploring analog or outdated technologies offers college students a powerful way to engage all four dimensions of the **DU 4D Experience**. This guided reflection helps you:

- **Deepen Intellect** by developing a more nuanced understanding of how technology evolves and how analog tools shape your sense of creativity, focus, and learning.
- **Discover Character** as you practice patience, intentionality, and responsibility by repairing, reusing, or thoughtfully choosing your tools rather than defaulting to constant digital upgrades.
- **Develop Well-Being** by creating space for analog practices and slower, tactile, low-pressure experiences that reduce digital fatigue and ground you in presence.
- **Design Careers & Lives of Purpose** by reflecting on sustainability, community impact, and the kind of relationship with technology you want to carry into your lives beyond campus.

Together, the 4D lens helps students see analog tools not as outdated relics, but as **meaningful pathways** for thriving in their personal and professional lives, in college and beyond.

The Evolution of Technology



Technology has come a long way over the years, transforming the world we live in and shaping our **past, present, and future**. From the invention of the wheel to the creation of smartphones, the evolution of technology has been nothing short of remarkable.

The Invention of the Printing Press

- In the 15th century, Johannes Gutenberg's printing press transformed how knowledge spread. Before its invention, books were handwritten and scarce. Printing made books affordable and accessible, boosting *education, literacy, and the exchange of ideas* across Europe and the world.

The Industrial Revolution

- Beginning in the 18th century, the Industrial Revolution introduced machines like the steam engine, spinning jenny, and power loom, replacing manual labor and *revolutionizing* production. It made goods cheaper and more widely available, ushering in an era of *rapid industrialization and urban growth*.

The Telephone

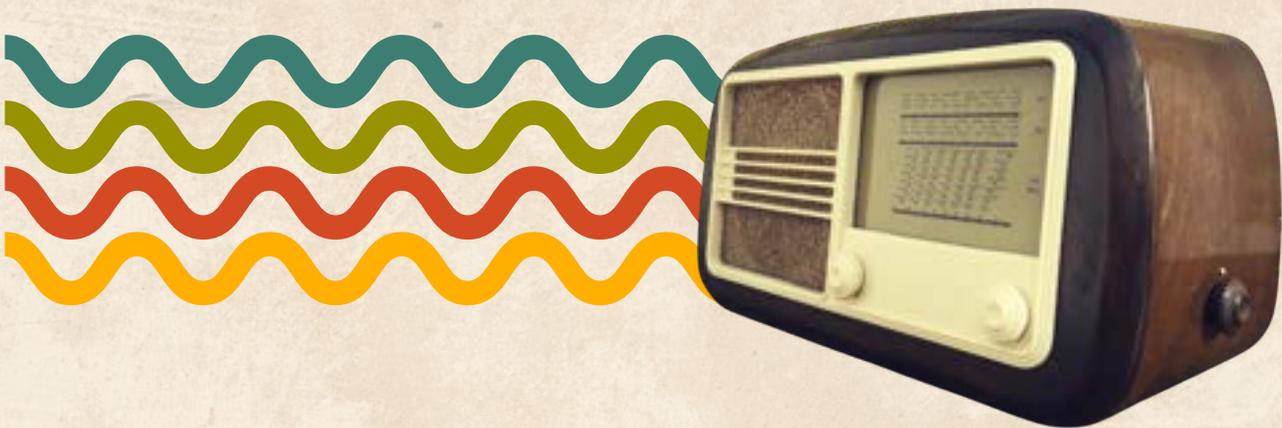
- In 1876, Alexander Graham Bell's telephone changed communication forever. For the first time, people could speak instantly across distances—far faster than letters or telegraphs. This invention connected communities and laid the groundwork for *mobile and digital communication*.

The Internet

- Emerging in the late 20th century, the internet transformed how people *learn, connect, and share* information. It broke down geographical barriers, created global networks, and became *essential to modern life*—from research and entertainment to social connection and commerce.

Artificial Intelligence

- Today, Artificial Intelligence (AI) is *reshaping society* by enabling machines to perform human-like tasks such as speech recognition, problem-solving, and decision-making. From virtual assistants to self-driving cars, AI continues to redefine how we *live, work, and interact* with technology.



- **What other technological advancements shaped society?**
 - What older technology did it displace? What was society's reaction at the time and how has it changed today?

The Benefits of Outdated Technology



Preserving and reusing outdated technology isn't just nostalgic—it's **sustainable**. The world generated an estimated 62 million metric tons of e-waste in 2022, and that number is projected to reach 82 million tons by 2030. Yet, less than 25% of global e-waste is formally collected and recycled (United Nations Institute for Training and Research, 2024).

Old devices contain *valuable* materials like gold, copper, and rare earth metals—resources that could be reused instead of mined.

Recycling just 1 million laptops saves the same energy used by over 3,500 U.S. homes in a year, and reusing a single smartphone for an extra year can cut its carbon footprint by 31% (EPA, 2025).

Repairing, refurbishing, and extending the life of old tech reduces waste, energy use, and the environmental toll of constant production (Seif et al., 2023).

The benefits of analog and obsolete tech extend beyond sustainability—they also support **mental health** and connection. Studies show that nostalgia increases happiness, optimism, and social connectedness, while decreasing loneliness and anxiety (Sedikides et al., 2020).

Engaging with analog devices (e.g. film cameras, vinyl records, typewriters) activates **nostalgic reflection**. It encourages people to slow down, be present, and savor the process rather than rushing for instant results. A study found that nostalgic reflection boosted self-esteem and life satisfaction, helping people feel more grounded and connected to their communities (You & Zhong, 2022).

For students, rediscovering older technologies can be both creative and restorative. Writing letters, keeping analog journals, hosting retro tech nights, or repairing old gadgets aren't acts of resistance to modernity—they're forms of **intentional living**. These practices remind us that progress doesn't always mean faster or newer. Sometimes, it means deeper, slower, and more sustainable. Preserving analog tech helps balance our digital lives, grounding us in creativity, sustainability, and shared human experience.



What is the oldest piece of technology still in your possession?

- How and when did you acquire it? Does it hold any special meaning for you today? How would you feel if you lost it?



Billie Eilish

Analog Role Models

- Billie Eilish is a vocal advocate for **environmental sustainability**, partnering with organizations like Reverb to make her tours low-waste, reduce carbon emissions, and eliminate single-use plastics. She regularly encourages young people to make conscious choices—repairing, reusing, and consuming less—emphasizing that sustainability is both a *personal practice* and a *collective responsibility*.
- Billie Eilish also champions **analog methods** as part of her artistic identity and her broader sustainability ethos. She regularly shoots tour diaries and behind-the-scenes moments on disposable film cameras, many of which appear in her documentary *The World's a Little Blurry* and in photo releases curated by her mother, Maggie Baird. Billie and her Finneas have also recorded early demo work using older, minimalist gear, embracing the limitations of small home-studio setups that force creativity over production polish.
- Through the **4D lens**, Billie deepens **Intellect** by exploring how analog formats can shape modern storytelling and emotional tone. She demonstrates **Character** in her intentionality and artistic integrity in an industry often driven by digital perfection. She cultivates **Well-being** by choosing tools that help her slow down, disconnect, and create in environments that feel more grounded and personal. And she pursues **Purpose** by aligning her artistic choices with her climate advocacy. Her analog habits have become a meaningful extension of her message and signature minimalist sound—less noise, more intention.

Bad Bunny

Analog Role Models

- Bad Bunny has become a powerful example of how young artists can use **analog technology** to stay grounded and intentional in a hyper-digital world. From album artwork shot on film to behind-the-scenes footage captured on camcorders, he intentionally uses older technologies to cultivate a more intimate and human creative process.
- He's frequently seen shooting on 35mm film cameras, including point-and-shoot Canons and disposable Kodak cameras, and he's shared entire behind-the-scenes photo sets captured on film for albums like *Un Verano Sin Ti*. In the "Andrea" and "Si Veo a Tu Mamá" visuals, he **intentionally** incorporates VHS and cassette textures, grainy film overlays, and analog color palettes to evoke nostalgia and emotional authenticity.
- Through the *4D lens*, Bad Bunny deepens **Intellect** by using analog textures and retro Caribbean aesthetics to tell powerful stories about colonization, capitalism, migration, and displacement. His choices reflect **Character**, from breaking gender norms in fashion and refusing to sing in English, to playing free concerts and marching in the streets of his home country, Puerto Rico. He cultivates **Well-Being** by creating pockets of slowness, privacy, and grounding on the island away a demanding public career. And he pursues **Purpose** by using analog tools to honor memory, culture, and authenticity. At every step, he models artistic humility, cultural pride, values alignment, and resistance to the flashy, hyper-edited norms of contemporary celebrity life.



Environment & Sustainability



- **Reducing e-waste:** Reusing or repairing old devices (like iPods, record players, film cameras) prevents them from ending up in landfills where they leach toxins.
- **Circular economy mindset:** Learning to fix, repurpose, or upcycle outdated tech reduces demand for new manufacturing, which saves energy and resources.
- **Longevity lessons:** Analog devices often last longer than disposable modern gadgets e.g. typewriter vs. a cheap keyboard. Preserving them models sustainable consumption.

- How often do you **replace** or upgrade your technology, and what usually drives that choice—necessity, desire, or social pressure?
- What **environmental** costs do you think are hidden behind your phone or laptop's production and disposal?
- Have you ever **repaired** or repurposed a device instead of replacing it? What did you learn from that process?
- In what ways can you encourage students to **reduce** e-waste or extend the life of their devices?

Learning & Creativity



- **Slower, deeper engagement:** Writing on a typewriter, shooting film, or listening to vinyl encourages patience and focus compared to instant digital tools.
- **Creative constraints:** Older technologies often impose limits (only 36 photos on a film roll, one track at a time on vinyl). Those constraints can spark creativity and intentionality.
- **Understanding evolution of tech:** Preserving older tech lets us see how innovations emerged and compare trade-offs—useful for design, engineering, or media students.

- How does working with **analog** tools (e.g. writing by hand, shooting on film) change your focus, creativity, or sense of time?
- What kinds of “creative constraints” can help you be more **innovative** in your next project rather than less?
- Have you ever **created** something truly special (e.g. a piece of art, a research paper, an event you planned) by *limiting* your options?
- How might engaging with **older** technologies help you understand the design and evolution of newer ones?



Human Connection & Joy



- **Analog communication:** A handwritten letter, mixtape, or polaroid feels more personal, intimate, and intentional than a text or email.
- **Tactile nostalgia:** The weight of a rotary phone, the warmth of film photography, or the ritual of flipping a record provides sensory joy in ways digital often doesn't.
- **Slowing down:** Using analog tech creates rituals—waiting for film to develop, flipping a cassette—that build anticipation and savoring the moment.

- What forms of communication feel the most **personal** or meaningful to you, and *why*?
- When was the last time you **slowed** down to *fully* experience something e.g. listening to a record, writing a postcard? How did you feel?
- What small, analog rituals bring you **joy** or grounding in your everyday life? How often do you engage in them?
- How could incorporating more **tactile** or analog experiences improve your relationships and *well-being*?

Cultural & Historical Value



- **Tech as cultural memory:** Old devices tell stories about earlier generations' habits, aesthetics, and values.
- **Preservation of media:** Some content (like VHS tapes, floppy disks, vinyl) isn't available digitally—or the digital files degrade or disappear. Analog preservation ensures access.
- **Critical digital literacy:** Understanding past media helps students question the “inevitability” of today's platforms and think critically about what we gain and lose with each shift.

- What can outdated technologies teach us about the **values** and priorities of earlier generations?
- How might **preserving** or studying old tech help us understand where modern innovation comes from?
- What forms of media or creativity are currently at risk of being **lost** as we move fully digital?
- How can you **personally** help preserve or archive cultural technological artifacts for future generations?

RuPaul's Drag Race

Unconventional Materials



One powerful example of how **creative brilliance** can emerge from limits is found in the unconventional materials challenges on RuPaul's Drag Race, where contestants must design runway looks using items like trash bags, paper, recyclables, or objects from dollar stores.

These challenges highlight how artists can produce stunning, high-fashion work not in spite of restrictions, but because of them—proving that boundaries often spark originality. They also model **sustainability in action**, showing viewers that beauty, innovation, and self-expression don't require constant consumption or new materials. By transforming discarded or everyday objects into *couture*, the queens demonstrate resourcefulness, intentionality, and **resilience**—values that can resonate with students learning to do more with less, think creatively within constraints, and make *environmentally conscious* choices in their own lives.

The unconventional materials challenges on RuPaul's Drag Race have produced some of the show's **most iconic** looks—from Raja's couture paper-bag fantasy to Manila Luzon's jaw-dropping money-dress, from Monét X Change's sponge-covered silhouette to Jaida Essence Hall's stunning locker-room-glam ensemble crafted from random school supplies.

Silo (Apple+)



Silo is an original Apple+ **dystopian drama** series set in a massive underground bunker where the remnants of humanity live under strict rules designed to keep them “safe” from the toxic world outside. No one knows who built the silo or why, and asking questions about its origins is *forbidden*—sometimes fatally so. The show blends *mystery*, *political intrigue*, and *world-building* to explore themes of truth, control, and what people are willing to risk for freedom.

Silo underscores the profound importance of **archiving technology** by showing a society whose entire understanding of its past—and therefore its *identity*—is shaped by what has been preserved, hidden, or deliberately erased. In a world where information is tightly controlled, the few surviving artifacts of pre-silo technology become priceless *cultural touchstones*, offering glimpses into lost truths about humanity’s relationship with the outside world.

The show illustrates how technological archives aren’t just functional tools but repositories of *memory*, *context*, and *collective meaning*. Without them, a culture becomes **vulnerable** to manipulation, mythmaking, and the erasure of its own origins.



Analog Tools

Here's a **curated list** of analog tools that are *practical, affordable, and meaningful* so you can explore sustainability, creativity, mindfulness, and connection through **hands-on** experience.

Writing, Thinking & Learning

- *Notebooks & Journals* – bullet journals, sketchbooks, or composition notebooks for mindful writing.
- *Fountain pens / mechanical pencils* – sustainable, tactile alternatives to disposable pens.
- *Typewriter* – encourages slow, intentional writing and can be used for poetry nights or zine-making.
- *Index cards* – great for flashcards, brainstorming, or analog research organization.
- *Corkboards or pinboards* – visual thinking, goal mapping, or idea boards.

Memory & Creative Expression

- *Film cameras / disposable cameras / Polaroids* – invite patience, surprise, and presence.
- *35mm film rolls* – experiment with photography that you can't instantly edit.
- *Instant cameras* (Fujifilm Instax, Polaroid Now) – combine analog feel with modern ease.
- *Photo albums or scrapbooks* – tangible memory-keeping instead of cloud storage.
- *Art supplies* – watercolor sets, charcoal, or collage kits for low-tech creativity.

Communication & Connection

- *Stationery & envelopes* – for writing letters to friends, family, or even your future self.
- *Postcards* – easy, meaningful way to share moments while traveling or studying abroad.
- *Mixtapes / burned CDs / playlists on physical media* – revive the art of curated music sharing.
- *Cork message boards / whiteboards* – analog alternatives to group chats for dorms or clubs.
- *Analog planners or calendars* – tactile way to organize life without screen fatigue.
- *Landlines or basic phones* – no connection to the internet.

Music, Media & Play

- *Vinyl record player* – ritualistic listening experience, often found secondhand.
- *Cassette players / MP3 / iPod / Walkmans* – portable nostalgia and intentional listening.
- *VHS, DVDs, Blu-ray* – hard copies of favorite movies, TV shows.
- *CD players / boomboxes* – rediscover the joy of album artwork and listening to full albums.
- *Retro gaming consoles (Game Boy, SNES, etc.)* – simple fun with no online pressure.
- *FM radios* – spontaneous, local, and low-tech discovery.



Mindfulness & Daily Living

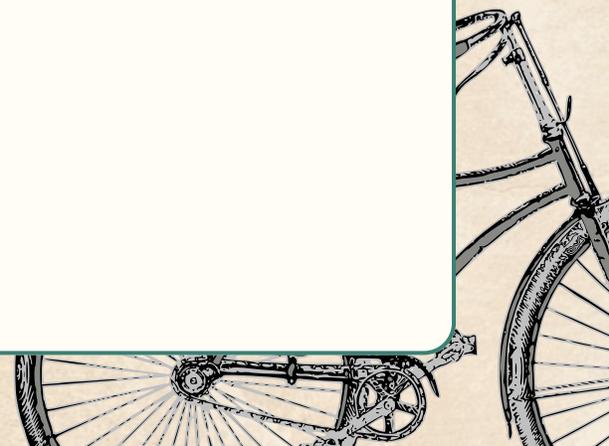
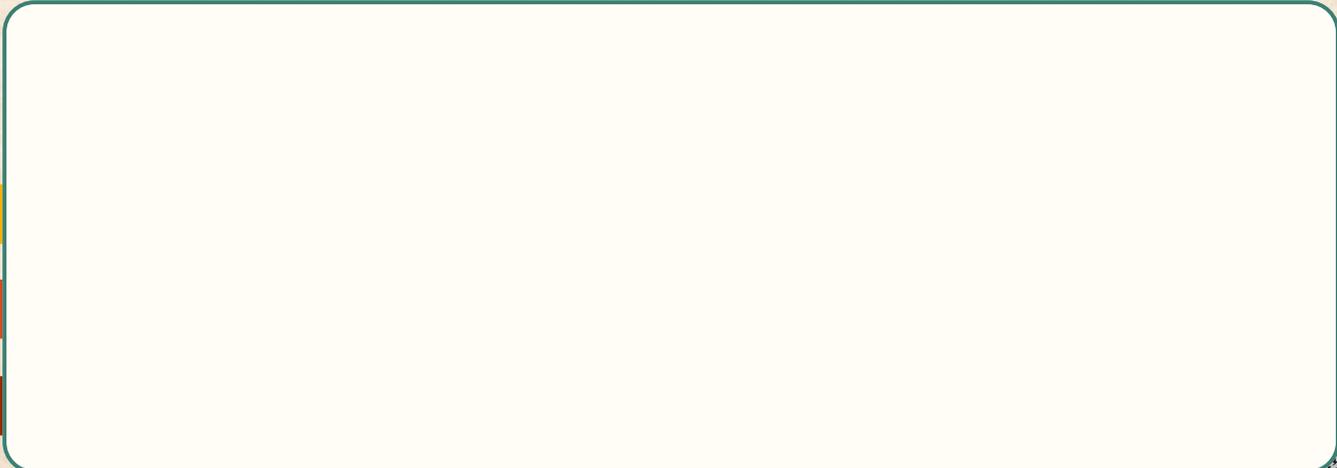
- *Analog clocks / wristwatches* – reduce phone-checking habits.
- *Paper maps / atlases* – for travel or geography learning without GPS dependence.
- *Hourglasses / sand timers* – tools for meditation, Pomodoro-style studying, or time grounding.
- *Mechanical kitchen timer* – tactile way to manage study breaks or cooking sessions.
- *Board games / card decks / puzzles* – encourage presence, patience, and social play.
- *Bicycles / scooters / walking* – self powered transportation.

Repair & Upcycling Tools

- *Basic repair kits* – small screwdrivers, pliers, soldering tools for fixing gadgets.
- *Toolbox for DIY refurbishing* – great for sustainability or engineering students.
- *Secondhand electronics* (old iPods, film cameras, vintage recorders) – to learn repair or reuse skills.
- *Recycled materials* – for creative reuse projects, zines, or art.

What analog tools are you curious about trying/bringing back?

- How can you acquire them sustainably in your local community?
- How will you build in *regular* analog time into your schedule?
- Who can you share these experiences with to multiply your joy?



Campus Life Going Analog



- Exploring analog tools and practices isn't just about nostalgia—it's about **rethinking how we live and learn**.
 - For college students, incorporating *slower, hands-on* technologies can offer balance amid constant digital noise, foster creativity, and build sustainable habits.
 - These questions invite you to consider how analog choices might reshape your daily routines, relationships, and sense of purpose.
- What's one **digital habit** you could replace with an *analog alternative* this week? How might that change your focus/mood?
 - How could embracing analog tools make your **study environment** feel calmer or more *intentional*?
 - What role might "**slowness**" play in your personal growth, creativity, or relationships on campus?
 - How can reviving or repairing old tech foster **community** e.g. through clubs, workshops, or shared projects?

- How could your campus community use retro or analog tech to spark creativity, sustainability, or **connection**?
- How can analog experiences help **balance** the pressure of constant online visibility?
- What would “**digital minimalism**” mean for you—not as rejection of tech, but as conscious use?
- What would a **healthier**, more intentional relationship with technology look like for you?



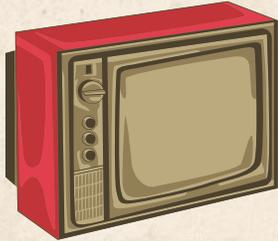


My Technology Inventory

Let's create a log of all the **personal devices** you currently own (e.g. smartphone, game console, TV). What is their functionality and your plans to upgrade them? Consider potential financial and ecological impacts, as well as viable analog alternatives.

Device	Functionality	Plans to Upgrade	Financial/ Ecological impacts	Analog Alternatives
<i>E.g. iPhone SE</i>	<i>Slowing down</i>	<i>1-2 years; repurchase</i>	<i>Under \$300; Certified refurbished</i>	<i>Basic phone; Digital camera; Renewed tablet</i>

Additional Resources



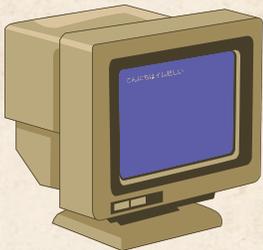
Technology Over Time

Scroll through a timeline from 1900 to 2020 to explore technological innovations in the home, how they were developed and adapted, and how they changed the way people live (PBS Learning Media).



RETROSPEKT

Since 2008, Retrospekt has ethically sourced, carefully curated, and expertly restored vintage electronics e.g. cameras, cassette players, gaming consoles, for resale at affordable prices.



Low-tech Magazine

Founded in 2007 and running on solar power since 2018, Low-tech Magazine underscores the potential of past and often forgotten technologies and how they can inform sustainable energy practices.



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