

Virtual and Space Communities as Utopias

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Abstract

This essay explores the evolving relationship between technological development and utopian ideals, focusing on the emergence of virtual and space-based communities as modern manifestations of utopian thought. Historically, utopian experiments have sought to improve the human condition by reforming society, often in isolated terrestrial settings. Today, digital technologies, virtual reality, and the Metaverse offer new platforms for building intentional communities without geographic constraints. These virtual spaces replicate many features of traditional utopias – shared values, creative freedom, and a sense of togetherness – while raising new concerns around identity, surveillance, and infrastructure. However, purely digital utopias remain incomplete due to human physical needs, pointing toward hybrid communities that integrate both real-world and virtual dimensions. The essay also addresses space colonization as a future-oriented utopian vision. Drawing on examples such as Biosphere 2, L5 space cities, and the International Space Station, it examines the challenges and motivations behind space settlement – from ecological crisis mitigation to techno-capitalist ambition. Ultimately, the article argues that hybrid and space-based communities represent a continuation of humanity's age-old utopian impulse – now reimagined through the lens of advanced technology. Whether these visions are realized will depend not only on innovation but also on ethical governance and human adaptability in both digital and physical spheres.

Keywords: Technological Utopianism, Virtual Utopias, Metaverse, Hybrid Utopian Communities, Space Colonization.

Introduction

This article is an essay that discusses the connection between technological development and utopias, and whether utopian communities could exist in the future in virtual form on earth or in outer space. The division of labor and interaction between humans and machines is one

key topic. In technological utopias, we dream of achieving utopian kind of perfect life and improved quality of life through science and technology. Humans themselves could be modified so that diseases no longer exist and people could live indefinitely. Humanity, technology, and nature would reach a state of perfect balance, where wars and crime no longer occur. New inventions are often first expected to be utopian, but at the time of their realization, related dystopian fears also emerge.

Utopia and its antithesis, dystopia, are often associated with technological concepts. Many advances in technology were once considered utopian – something impossible to achieve – but become reality over time. This includes almost all major inventions in technology and medicine since industrialization. The list is long: printing press, nuclear power, rockets, satellites, plastic, genetic engineering, heart transplants, airplanes, television, computers, mobile phones, the internet, social media, vaccines, antibiotics, organ transplants, and artificial intelligence. Some were hoped for; others couldn't even be imagined in advance (Cowles & Scribner, 2009).

Digitization in Everyday Life

The information society since 1980s was first thought to change completely everything in the world, but the later stock market crash in technology stocks brought people back to earth. Today, similar expectations are tied to the virtual world mainly to development of artificial intelligence (AI). The worst predictions about the digital world did not come true, but life did not return to the old ways but evolved into something shaped by irreversible digital services. In *Tiimi* magazine in 1996, I wrote how the new digital technology “perhaps complicates life at first, but soon becomes easy to use, and its advantages are so obvious that life becomes difficult for those left behind.” A similar process likely applies to newer technologies like AI as well. New technological tools are quickly becoming an integral part of everyday life, as shown by the rise of artificial intelligence. Despite its pros and cons, the biggest social change it brings is that the service society has largely shifted to a self-service society – unless robotics and automation later return us to traditional services. The COVID-19 pandemic accelerated digitalization. Remote work and online shopping became widespread. These new working models may become

permanent, and office buildings may start to empty. Developments in artificial intelligence and virtual functionality gained momentum. (Castells, 1989; van den Boomen, 1998; Peltoniemi, 1996; Rheingold, 1993).

Technoutopias – Sustainable Technology and Climate Change

Since the Club of Rome's report, sustainable technologies have been developed with the hope of also addressing climate change. Both small and large players have turned their focus to solving climate problems. Even eco- and intentional communities have begun adopting previously skeptical technologies. Space colonization has started to attract interest – from billionaires aspiring to be pioneers, and from those who see it as necessary life insurance for humanity should Earth become uninhabitable (Meadows *et al.*, 1972; Wahlström, 2021; Eskelinen & Lakkala, 2024; Hahamovitch, 2021; Peltoniemi, 2023).

Virtual Reality and the Metaverse

Historically, people have escaped into partial virtual realities through dreams, meditation, substances, literature, and theater. Today, virtual reality offers a far broader and more immersive escape. Computers now create artificial environments for all the senses. The rise of virtual games and media has raised concerns about immersion and addiction. Facebook is likely the world's largest virtual community – though perhaps not yet utopian. Virtual reality remains mostly game-centered for now, but many of us are also part of other online communities. Some loosely, others so deeply that it resembles living in a bubble (Benedikt, 1991; Aronowitz, 1996).

The Metaverse was heralded as the next evolution of the internet – blurring the line between physical and digital worlds. It aimed to replicate the physical world virtually to enable deeper social interaction. In 2022, Spain's expat Olive Magazine published an article titled "Digi Daft" about the "Uttopion" company which was selling virtual real estate in the Metaverse. With thousands of pre-orders priced from 2,000 to 20,000 euros, each plot included a virtual house. Users could meet friends via avatars, run virtual businesses, and create unique experiences

for customers. The Olive Magazine headline reflected public skepticism. As is often the case, the first media stories about the Metaverse were filled with hype. Facebook CEO Mark Zuckerberg believed strongly that the Metaverse would replace the mobile internet and even renamed his company Meta, investing tens of billions in development. Only a few years later, the hype started to fade. In 2022, Tekniikan Maaailma magazine already expressed caution, and by 2025 Helsingin Sanomat newspaper described the Metaverse as a “billion-dollar screw-up” (Parfitt, 2022; Heiskanen, 2022; Westrén-Doll, 2025).

Old Terrestrial vs. New Virtual Utopian Communities

Traditional utopian communities and virtual ones share many similar elements. Historically, such communities often formed around a charismatic leader and sought to reform religion, governance, politics, family structures, and education. All these can also be reimaged in virtual communities, although leadership and power may be more fluid and decentralized online. Also virtual communities might range from being strictly moderated to fully democratic or even anarchist. In principle, freedom of expression could be greater than in real-life communities, but in hierarchical online groups it can also be more restricted. Issues of identity – such as diet, medicine, or sexuality – may play a smaller role virtually but still remain relevant. Many traditional utopian communities aimed to isolate themselves physically or socially. They lived by their own rules as long as they didn’t conflict excessively with broader society. Some even chose remote geographical locations for this purpose. Today, it may be even easier to build an isolated bubble in a virtual setting.

Many traditional utopian communities aimed to create new models for society – and to inspire the rest of the world. In virtual environments, missionary work might even be easier due to access to broad communication networks and digital tools. Messaging can be based on facts – or on manipulation, mass psychology, and even cyberattacks, mimicking both the best and worst tendencies of social media. Even if a virtual utopia is only a “semi-community,” individuals can still meaningfully participate – developing themselves, shaping the group, or influencing real-world societies. For some, cyberspace offers a better world that doesn’t require strict personal commitment.

Regardless of location, any community depends on shared values, commitment, and a sense of togetherness. Internal cohesion and spiritual fulfillment must be maintained. There's also a need to manage new member recruitment and pass on traditions. It's no surprise that many people see virtual communities as utopias in themselves. In theory, they are open to everyone – independent of time, place, language, or identity. But this is an idealized image: access to information is often restricted by paywalls, privacy is compromised, and participation relies on energy-intensive infrastructure. Nonetheless, people participate in various online communities – some loosely, others so intensively that they inhabit a parallel digital existence.

In many respects, a virtual utopian community resembles traditional or intentional (eco) communities. People might transfer as much of their daily lives as possible into the virtual realm, striving to live according to shared values – secular or spiritual – in pursuit of a better world. As in physical communities, virtual ones may provide space for creativity and expression – perhaps even more than their terrestrial counterparts. Yet limitless freedom can also mean vulnerability to surveillance, data harvesting, and addiction. When that happens, the virtual utopia may begin to resemble a dystopia – something not unfamiliar from historical utopian experiments. (Kanter, 1972; Peltoniemi, 2024, Kamińska, 2020; van den Boomen, 1998).

Is Hybrid Virtual Utopian Community Possible?

There is one fundamental reason why a virtual utopian community cannot be a complete image of its terrestrial community. People cannot live entirely in a virtual utopia because humans need food, physical security, health care, etc. So virtual utopian communities must be hybrid – “semi-utopias” that extend further than traditional models but are incomplete. In theory, hybrid virtual utopian communities could exist. Whether they will emerge in practice remains uncertain. If metaverses become more common, such communities may appear quickly – there is likely a pool of idealistic, tech-savvy individuals ready to join.

Artificial intelligence would help to model hybrid communities with existing info from old utopian experiments and the new intentional communities. In the hybrid versions, members would live in their terrestrial

community or in their homes on Earth, while their digital twins interact in virtual worlds where members are represented by avatars and where everything that is happening on Earth is reflected to the virtual utopian community. Hybrid models naturally raise many questions: Would members feel stronger or weaker commitment and togetherness? Would communication be easier? What about the cost and maintenance of the required digital infrastructure? Would this simply be another isolated bubble?

Could we soon see groups of digital utopians living dual lives – one physical, one virtual – rather than fully relocating to intentional communities? After the failure of Zuckerberg's Metaverse, interest in building fully virtual utopian communities may seem diminished. However, other forms of virtual communities are still growing. The Metaverse might have been a prototype – too commercial, too early. Perhaps newer AI tools will support the development of Metaverse 2.0, offering a more meaningful model for smaller or ideologically motivated utopian groups.

Whether this remains a utopian dream or becomes reality is yet to be seen. According to a ChatGPT search in June 2025, there are no widely known, fully functioning utopian or ecovillage community having a “virtual twin” or metaverse extension. There have been some pilot projects and small experiments, but high costs and complex technologies remain obstacles. Some intentional communities even resist digital technologies entirely. “But the trend is clearly growing,” ChatGPT estimates. (Peltoniemi, 2023).

Space Communities as Utopias

One concrete part of future technological utopias relates to outer space. Earth will eventually become uninhabitable – due to natural or human-made disasters, or simply over time. Although this may seem distant, overpopulation and ecological crises already make space colonization more relevant (Karhu, 2016; Wahlström, 2021; Valtaoja, 2019).

Science fiction is full of utopias and dystopias. Space utopias often serve as abstract expressions of hope, as seen in the long tradition of science fiction. In Finland, space utopias were a popular form of youth literature starting in the 1930s. One that remains vivid in my own memory from school days is *Messenger of Sirius*, by Osmo Ilmari Lampinen. Space

utopias also appear in art and design. At the 2004 Venice Architecture Biennale, one project (Allobio-utopia) combined information technology with biotechnology. Another, Global Cassus, imagined humans living inside a transformed Earth. Similarly, the Koreshan Unity in Florida, believed that people already live on the inner surface of the Earth, a belief they tried to prove with trigonometric measurements (Wynne & Knetsch, 2016).

Biosphere 2

NASA and others have searched for habitable exoplanets using telescopes like TESS, Kepler, and James Webb. While many candidates have been identified, they are too distant given current space travel technology. Still, they serve as theoretical sites for future utopian communities.

Meanwhile, research has focused on how to survive in closed environments such as the Moon or Mars. One famous experiment was Biosphere 2, built in Oracle, Arizona, from 1991-1993. Funded by billionaire Edward Bass, the \$200 million facility was a closed ecosystem with food production, waste recycling, and energy from natural gas. However, the first two missions faced major problems – including food shortages and oxygen imbalance. The second mission was interrupted due to a management conflict. Other smaller experiments continue, such as Biosphere 3 in Krasnoyarsk, Russia, and ESA-MELiSSA in Barcelona, Spain. (Nikkanen, 2019).

Space City Plans

Many space utopias focus on colonizing celestial bodies. One of the first scientifically grounded concepts was the “L5 Community” – a massive, solar-powered habitat for 10,000 people at a Lagrange point where gravitational forces are balanced. The idea was developed by Princeton professor Gerald O’Neill, who was inspired by the Club of Rome’s warnings about Earth’s future. In 1975, Carolyn Meinel and Keith Henson co-founded the L5 Society to promote the vision. The L5 community was seen as a sustainable city in space, free from pollution and urban problems – inhabited by independent pioneers, like in American frontier my-

thology (Crang, 2000; Meadows et al., 1972).

Space Stations

To date, the only continuously inhabited place beyond Earth is the International Space Station (ISS), orbiting at approximately 400 km. A joint effort by the U.S., Russia, Japan, Canada, and ESA, the ISS has been occupied since 2000 and is funded at least until 2030. Future cooperation with Russia is uncertain due to the war in Ukraine. Many of the benefits – like satellite communication and GPS – became apparent only after implementation. In 2020, Elon Musk's SpaceX sent astronauts to the ISS, marking the U.S.'s first manned orbital launch since 2011. Musk's Starship rockets are being developed for Moon and Mars travel, potentially carrying 100 people at a time. Musk envisions a permanent Martian colony, even if it means a one-way trip. Amazon's Jeff Bezos also pursues space settlements through Blue Origin, aiming for orbital habitats and commercial space travel (Hahamovitch, 2021).

Conclusions

In exploring the interplay of technology, virtual reality, and the age-old human quest for utopia, it becomes evident that our aspirations for utopian communities have not vanished – they have instead shifted into new realms. Technological progress continues to serve as both an enabler and a challenge, offering tools to address existential threats like climate change, while also raising concerns about over-dependence, surveillance, and social isolation.

Virtual spaces – from early online forums to today's emerging metaverses – illustrate how digital environments can replicate many elements of utopian ideals: open access to information, borderless communication, and creative freedom. Yet they also expose the limits of a purely digital existence, since no virtual community can fully satisfy our physical and social needs. In this sense, virtual utopian communities would rather be semi-utopias as they extend human connection and experimentation beyond the constraints of geography but cannot wholly replace embodied life. At the same time, the idea of settling space remains an ultimate

technological utopia. Projects like Biosphere 2, space stations, and visions of Martian colonies highlight how humanity continues would test the boundaries of survival in closed, self-sufficient systems. These experiments remind us that whether on Earth, in orbit, or in cyberspace, the dream of a 'better world' demands a balance between imagination and practical limits.

Ultimately, the rise of possible hybrid utopian communities – blending terrestrial living with immersive digital or even extraterrestrial extensions – suggests that our utopian experiments will grow more diverse, fluid, and interwoven with technology. Whether these ventures succeed will depend not only on innovation but also on our collective capacity for trust, resilience, and ethical governance in both virtual and physical domains.

References

- Aronowitz, S. (Ed.) (1996). *Technoscience and Cyberculture*. Routledge.
- Benedikt, M. (Ed.) (1991). *Cyberspace: First Steps*. Sage.
- Castells, M. (1989). *The Informational City: Economic Restructuring and the Urban-regional Process*. Blackwell.
- Crang, M. (2000). Public Space, Urban Space and Electronic Space: Would the Real City Please Stand Up? *Urban Studies*, 37(2), 301-317.
- Cowles, J., & Scribner, D. (2009). The Internet as Utopia: Reality, Virtuality, and Politics. *University of Wisconsin Oshkosh*, IV, 81-89.
- Eskelinen, T., & Lakkala, K. (2024). Analyzing the Climate Movement Through Its Utopias. *Sociological Research Online*, 1-18.
- Hahamovitch, R. (2021, October 25-27). Future without Limits, Colonialism without Guilt: The L5 Society and Dreams of Utopian Space Capitalism. Paper at the International Conference on *Intentional Communities: Real Utopias in History*, Universidad Autónoma de Madrid, Spain.
- Heiskanen, M. (2022). Nyt tuli kiire metaversumiin [Now It's a Tush to the Metaverse]. *Tekniikan Maailma*, (5/2022), 81-84.
- Kamińska, M. (2020). The Virtual Community: Utopia, Reality or Myth? In J. D. Smirnova & R. R. Fazleeva (Eds.), *Teaching the Concept of Techno-utopia as a Unity of Utopian and Dystopic Discourses*. *Revista Conrado*, 16(77), 150-153.
- Karhu, M. (2016). *Utopia- ja dystopiakirjallisuuden klassikkoteokset paikkateoreettisessa tarkastelussa*. ["Classic Works of Utopian and Dystopian Literature in a Place-theoretical Examination"]. Vaasan yliopisto.
- Meadows, D. H., Meadows, D. L., & Randers, J. (1972). *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. Chelsea Green Publishing.
- Nikkanen, H. (2019, July 28). Marsin tarhurit [The Gardeners of Mars]. *Long Play*. <https://www.longplay.fi/pitkat/marsin-tarhurit>
- Peltoniemi, T. (2009). Tietoyhteiskunta ja päihdetyö [Information Society and Substance Prevention Work]. In T. Peltoniemi, *Terassilta tiputukseen* ["From Terrace to Detox"] (pp. 163-177). A-klinikkasäätiö RS56.
- Peltoniemi, T. (2023, October 18-20). Virtuality and Utopian Communities. Paper at *Electricdreams – Between Fiction and Society II*, IULM University, Milan.
- Peltoniemi, T. (2024). *Paratiiseja rakentamassa – Suomalaisten utopia-yhteisöjen historiaa* ["History of Finnish Utopian Communities"], Helsinki, SKS.
- Rheingold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier*. <http://www.rheingold.com/vc/book/>
- Valtaoja (2019). *Avaruudesta* ["About Space"]. Ursan julkaisu 164.
- van den Boomen, M. (1998, July 8). Utopia in Cyberspace: Virtual Communities and Social Reality. Paper presented at *ICSA Conference "Utopian Communities and Sustainability"*. <http://nettime.khm.de/nettime.w3archive/199808/msg00000.html>

- Wahlström, M. (2021). *Koneet, joilla pelastamme planeetan – Älyteknologialla ilmastonmuutosta vastaan* [“Machines with which We Save the Planet: Smart Technology against Climate Change”]. Gaudeamus.
- Westrén-Doll, J. (2025, July 13). Mark Zuckerbergin toinen tuleminen [“Mark Zuckerberg’s Second Coming”]. *Helsingin Sanomat, Visio*.