Metaverse (Re)Visions

Back to the Future of the Internet

Sonia Fizek

> This is a completely different kind of future […]
> that is profoundly undemocratic.
> This is a direct assault on human autonomy and
> on human agency.
> Shoshana Zuboff[1]

INTRODUCTION: BEYOND THE SEEN AND THE FELT

In his media historical *tour de force* under the title "Vegas, Disney, and the Metaverse," Gundolf S. Freyermuth diagnoses the Metaverse through the lens of *aesthetic anticipation*, that is, "the idea that the not-yet-experienced can be anticipated" in the preceding media forms long before the "not-yet-experienced" is able to flourish on a larger techno-cultural scale.[2] In the immersive experiences of theme parks and Las Vegas historically achieved by analog means, Freyermuth sees the seeds of today's virtual realities. This time, simulated not by mechanically and industrially produced audiovisual effects (scenography, neon light shows, motion picture) but by digitized and virtualized representations of reality. It is in those

---

1   Zuboff, Shoshana: "Shoshana Zuboff on Surveillance Capitalism," July 29, 2019, *EconTalk. Conversations for the Curious*, podcast, 01:07:00, https://www.econtalk.or g/shoshana-zuboff-on-surveillance-capitalism/

2   Freyermuth, Gundolf S.: "Vegas, Disney, and the Metaverse. On the Material Anticipation of Virtual Worlds and Virtual Play in the Second Half of the 20th Century," in: Beil, Benjamin et al. (eds.), *Playful Materialities. The Stuff That Games Are Made Of*, Bielefeld: transcript Verlag 2022, pp. 17-97, here p. 20.

constructed fantasy worlds that we are invited to lose the distinction between what is real and what is represented or simulated. The real is virtualized, the virtual becomes real.

Freyermuth's accurate hypothesis of *aesthetic anticipation* may be complemented with the following observation—that today's virtualization of the everyday is not only to be found in the past media, but that it also remediates media of the past.[3] Virtual reality oscillates in the dialectic between the future (the "not-yet-experienced") and the past (the already-experienced). Allow me to support this claim with a short example. The Internet, as we still know it, remediates predominantly print and, more recently, audiovisual media. This happens on many levels. We browse through text-based websites and web pages. We look for information via search engines that display mainly text results. We write electronic letters. We consume images and videos, modalities that we know from books, newspapers, television, and film (think of such platforms as YouTube, Instagram, or TikTok). The Metaverse, on the other hand, would incorporate experiential audiovisual media of the late 20th and early 21st century, such as video games and online virtual worlds.[4] Often, the Metaverse is conceptualized as a 3D-rendered version of the Internet.

But what propels this anticipatory remediation fantasy? By getting acquainted with the latest ideas of such corporations as Meta Platforms, one may gain the impression that the Metaverse is all about the human senses and embodied experiences. However, this emphasis on the visual and sensed experience conceals aspects that are far more tangible. The underpinning logic of the Metaverse rests on developing, owning, and controlling the new natural-virtual habitat for the digital human. For what is really at stake is not of aesthetic dimension. It is not the affective side either that is going to revolutionize the way we play, work, and live. Upon closer inspection, the Metaverse is not a technology of the senses. At its core lie the material infrastructures that propel the metaphorical data clouds and the ownership of those. Data centers are physical spaces where the virtual Disneylands sit. Interestingly, we are all encouraged to build the Metaverse together but not to own

---

3   This process of remediating older forms has been addressed by many media scholars, including Jay David Bolter and Richard Grusin in their by now classical book *Remediation* (Cf. Bolter, Jay David, Grusin, Richard: *Remediation. Understanding New Media*, Cambridge, MA: MIT Press 2002).

4   SECOND LIFE introduced by Linden Lab in 2003 is a good starting point in trying to imagine how the Metaverse or Metaverses would operate and intertwine with our everyday.

it collectively.[5] In other words, the focus on the embodied multi-sensorial virtual habitat conceals the material and the socio-economic conditions under which the new simulacrum of the 21st century is being developed.

We are in the midst of the so-called information age, and its currency is data, not feelings. More importantly, data does not float in the air but is literally grounded in earthly matter. And the new landlords of the information age are information technology companies that own the cloud infrastructure and the not-so-virtual land on which virtual realities reside. This contribution will, therefore, explore aspects of the material and economic foundations upon which the visions of the new virtual rest. As Ben Tarnoff emphasizes in an interview with *Digi Labour:*

"The Internet is deeply material creation. It's composed of fiber optic cables, data centers, computers—things you can touch, things that had to be contrasted out of parts, with those parts themselves having been made from materials that were dug out of the earth."[6]

My techno-cultural diagnosis of the Metaverse is inspired predominantly by the work on Internet privatization (Ben Tarnoff), surveillance capitalism (Shoshana Zuboff), and technofeudalism (Yanis Varoufakis). The above concepts are the bedrock for proposed Metaverse (re)visions, which I see as necessary points of departure in order to rethink our present and future online presence. If those are not considered, the Metaverse remains a monopolized and capitalized upon online ecosystem, which requires ever more powerful computation and exorbitantly increasing storage space for processing heavy three-dimensional virtual websites owned and rented out by a handful of big tech corporations.

The text is divided into two parts. It begins with a sketch of the corporate visions of the Metaverse. In the second part, I will focus on the revisions, at the base of which lies a critique of profit-driven corporatization of the digital space.

---

5   In the video presentation "The Metaverse and How We'll Build It Together," Mark Zuckerberg presents his vision of the Metaverse as a space that will be built collectively by allowing digital artists to develop their content, experiences and 3D assets and place them within the virtual world as well as sell them via the Metaverse (Zuckerberg, Marc: "The Metaverse and How We'll Build It Together Connect 2021." *Meta*. October 28, 2021, YouTube video, 01:17:26, here 00:44:54, https://www.youtube.com/watch?v=U vufun6xer8).

6   Cf. Tarnoff, Ben: "Deprivatizing internet: interview with Ben Tarnoff." *DigiLabour*, University of Toronto, August 22, 2022, https://digilabour.com.br/en/deprivatizing-the-internet-interview-with-ben-tarnoff

CORPORATE VISIONS

Embodied and Spatial Internet

In an over-one-hour-long keynote talk, "The Metaverse and How We'll Build It Together," Mark Zuckerberg rolls out his manifesto for our digital futures. The stakes must be high. Not often are we able to see corporate video material of this length screaming for our dispersed attention, with the CEO of one of the biggest digital platforms worldwide entertaining us as the narrating figure.

In the US legal jargon of the digital tech industry, what we are exposed to in Zuckerberg's video are the so-called "forward-looking statements," that is predictions and projections related to future business. We could think of them as speculative fiction or worldbuilding, concepts more akin to the realities of writers and academics. Interestingly, corporations, such as Meta, are not to be held accountable by the public for their visions. In the opening screen of the video, we can read the following disclaimer:

> "Any forward-looking statements made in this presentation are based on our beliefs and assumptions as of the date of the presentation and we undertake no obligation to revise or publicly release the results of any revision to the forward-looking statements."[7]

In the 1990s US, such disclaimers became a standard precautionary measure designed to provide companies with a 'safe harbor' so that they could inform their investors about future plans, at the same time mitigating the risk of being sued should the predictions fail. I will not delve deeper into the legal underpinnings; however, this frame is crucial in order to open an informed discussion on the Metaverse (re)visions. Although the video may seem like a manifesto tailored to the digital masses worldwide, it is more accurate to see it as speculative material for potential investors so that the latter could make a more informed bet on the upcoming digital businesses.

Let us delve into a few of the foundational statements presented in the video. A brief rhetorical analysis of Zuckerberg's statements in "The Metaverse and How We'll Build It Together" may leave us under the impression that the Metaverse is the most human-oriented technology ever envisioned. The majority of technocrats, including Zuckerberg, see the Internet of the future as an embodied space. A space of this kind is no longer just observed on a 2D surface. It is felt, preferably with all the human senses. In the first four minutes of the keynote, the term "feel" is

---

7   M. Zuckerberg: "The Metaverse and How We'll Build It Together," here 00:06.

used eight times and "experience" nine times. These are just some of the visions we are lured with: "we will be able to feel present like we're right there with people" (1:54), "we will be able to express ourselves in new, joyful, completely immersive ways" (2:00), "and that is going to unlock a lot of amazing new experiences" (2:05), "a shared sense of space" (2:32), and "the deep feeling of presence" (3:03).

Virtual Worlds with Real Behavioral Data

This embodied vision of how we will be able to interact with the digital virtual content is the driving metaphor. But let us not forget. The aim of companies such as Meta Platforms is not to make us feel better but to capitalize on our feelings. At the core of the Internet, as well as its embodied vision, are not human feelings but monetization strategies and profit. Virtual worlds are thought of as places where we would allegedly rent virtual land as well as buy and sell digital assets and non-fungible tokens. At the heart of user experience, then, is consumption of virtual lands and goods. In the background, however, a very different and much more potent marketplace operates; one not for the masses of users but for a selection of companies and investors. In this market, it is not the digital assets but human futures that are for sale. As Shoshana Zuboff explains in her latest book, *The Age of Surveillance Capitalism* (2019), digital capitalism operates based on the so-called prediction products, that is, algorithms designed to predict human behavior. In order to do this on a massive scale, big tech companies need to have access to mass quantities of data about users—something that has defined the economies of scale since the early 2000s when Google discovered its main source of revenue—selling user data to advertisers. Zuboff defines surveillance capitalism as a system that "…unilaterally claims human experience as free raw material for translation into behavioural data."[8] While using most free commercial services (such as social media platforms), we allow the companies to track and use our data. Some of this data, as Zuboff explains, is used to improve services; the rest is analyzed and turned into "prediction products" designed to anticipate our behaviors and preferences. It is those products that are sold to advertisers. According to Zuboff, surveillance capitalists "nudge, coax, tune, and herd behavior toward profitable outcomes."[9]

---

8 Zuboff, Shoshana: *The Age of Surveillance Capitalism. The Fight for a Human Future at the New Frontier of Power*, New York, NY: Public Affairs 2019, p. 7.

9 S. Zuboff: *The Age of Surveillance Capitalism*, p. 8.

Corporate visions of the Metaverse in the age of surveillance capitalism represent what Oliver Zöllner refers to as "fantasies of centralization and power," in which all possible online activities happen under one monitored and monopolized roof.[10] Imagine that everything we do in our daily lives is mediated through one platform. Our entire experience, whether private social exchanges, workdays, sleep rhythms, fitness activities, or purchase histories, all take place in a unified digital space and may be tracked, recorded, and analyzed. This is not necessarily a science fiction film. It is already a reality for most Internet and mobile device users. The experience, however, is still relatively distributed across a variety of platforms and providers.

The Chinese micro-blogging platforms Sina Weibo and WeChat are illustrative examples of how an online experience concentrated under one platform may look like. They are not single applications but ecosystems that provide their users with almost all online-related functionalities—connecting with people, messaging, reading news, tracking fitness levels, buying goods, even booking a doctor's appointment. Both platforms operate according to the apps-within-an-app model, integrating as many functionalities within one system as possible. Leaving those ecosystems is not necessary, so all online experiences are mediated via their ever more expanding boundaries. To a large degree, corporate visions of the Metaverse resemble a 3D version of Sina Weibo or WeChat. And even if we migrate from one corporate Metaverse to another, taking our virtualized "identities" with us (visual representations such as avatar skins or assets) may only enable companies to more effectively track our activities, preferences, and behaviors.

Metaverses as Feudal Fiefdoms?

Closely monitored corporate Metaverses, monetizing upon each bit of our online activities, may be visions emerging from "surveillance capitalism."[11] Yanis Varoufakis, a leftist economist and politician, sees a completely new economic system on the rise, one that is no longer capitalist at its core. According to Varoufakis, we are finding ourselves in the midst of an epochal shift comparable to the transformation from feudalism to capitalism a few centuries ago. Such a change in trajectory requires a new lens and a new terminology. Capitalism has allegedly outlived itself and mutated into technofeudalism, a concept discussed in depth in his most recent book *Technofeudalism: What Killed Capitalism*. Technofeudalism,

---

10 Zöllner, Oliver: "Wie das Metaverse uns entmenschlicht," *Der Pragmaticus. Auf den Punkt Gebracht*, May 23, 2023. https://www.derpragmaticus.com/r/Metaverse-daten

11 S. Zuboff. *The Age of Surveillance Capitalism*.

also referred to as neo-feudalism, digital feudalism, and information feudalism, is a concept discussed by many economists and theoreticians. The Italian economist Mariana Mazzucato wrote about digital feudalism on the pages of Project Syndicate.[12] Also, Cédric Durand, a French political economist, has written extensively on contemporary transformations of capitalism.[13]

In a technofeudal economic system, information technology companies no longer produce capital but instead charge rents. There are no real products that are being made; instead, value is subtracted from online activities on corporate-owned platforms. It is the "triumph of rent over profit" that makes all the difference, writes Varoufakis.[14] Also, Mazzucato emphasizes rent as the very foundation on which corporate online platforms rest: "Just as landowners in the seventeenth century extracted rents from land-price inflation, and just as robber barons profited from the scarcity of oil, today's platform firms are extracting value through the monopolization of search and e-commerce services."[15] To sum up technofeudalism with the words of Evgeny Morozov, the main assumption shared by the theorists of technofeudalism, is that contemporary digital information and data infrastructure "pushes the digital economy in the direction of the feudal logic of rent and dispossession."[16]

PUBLIC (RE)VISIONS

Back to Collective Ownership

In light of the above, the crucial question remains: why are raw data profits and feudal rents prevailing as the leading values that drive the visions of the future of

---

12 Cf. Mazzucato, Mariana: "Preventing Digital Feudalism," *Project Syndicate. The World's Opinion Page*, October 2, 2019: https://www.project-syndicate.org/commentary/platform-economy-digital-feudalism-by-mariana-mazzucato-2019-10

13 Cf. Durand, Cédric: *Techno-féodalisme*. *Critique de l'économie numérique*, Paris: Zones 2020.

14 Varoufakis, Yanis: *Technofeudalism: What Killed Capitalism*, New York, NY: Vintage Books 2023, p. 90.

15 M. Mazzucato: "Preventing Digital Feudalism."

16 Evgeny Morozov discusses the shortcomings of the technofeudal theoretical framework: Morozov, Evgeny: "Critique of Techno-Feudal Reason," *New Left Review* 133/144 (2022), https://newleftreview.org/issues/ii133/articles/evgeny-morozov-critique-of-techno-feudal-reason

the Internet? More importantly, what would it mean to envision the Metaverse on terms other than monopolized and commercialized platforms whose main goal is to oversee, influence, and monetize human online activity? In the upcoming sections, we will dive into questions of data and material infrastructure ownership.

Popular discourse around the Metaverse emerges at the pivoting moment in the history of digital media. This moment is as foundational as the 1990s when the Internet, after its over 20-year-old publicly funded development, became fully privatized. The early imaginary of the Internet was that of a space of new possibilities and more democratic social exchanges. Every user could allegedly become a producer (prosumer), actively contributing to the rise of "participatory culture" through creative expression and civic engagement.[17] An average person acquired access to potentially infinite sources of knowledge; a process comparable to the print revolution triggered by Johannes Gutenberg's press. In multi-user dungeons and multiplayer online games, we could even imagine new creative ways of expressing ourselves, beyond our own sex, body, or species. Think of the by-now-classic sentence "On the Internet, nobody knows you're a dog," featured in an illustration by cartoonist Peter Steiner in *The New Yorker* magazine in 1993.[18] While the Internet was being envisioned as a space of collective liberation and democratization, at the same time, the legislative ground was prepared to privatize it without any democratic regulations regarding its public use, argues Ben Tarnoff.[19]

Before the Internet entered into the private hands, for decades, it had been developed with the help of public funding under the leadership of the National Science Foundation, a federal agency supporting basic research in the United States. In 1995, the private sector gained control over the entire physical infrastructure. Tarnoff criticizes the shortsighted and unregulated privatization of the Internet infrastructure in the early 1990s. His analysis of Internet ownership exposes the practices of companies that own the lower critical infrastructure (what he calls the "pipes") as well as the infrastructure "up the stack," e.g., data centers and finally search algorithms and social media platforms. Today, the world's

---

17 Cf. Jenkins, Henry et al.: *Confronting the Challenges of Participatory Culture. Media Education for the 21st Century*, Cambridge, MA: MIT Press 2009: https://mitpress.mit.edu/9780262513623/

18 Cf. Steiner, Peter: "On The Internet, Nobody Knows You're A Dog," *The New Yorker*, cartoon, July 1993.

19 Cf. Tarnoff, Ben: *Internet for the People: The Fight for our Digital Future*, London/New York, NY: Verso Books 2022.

cloud infrastructure is shared amongst just a few companies, with Amazon Web Services owning circa 30% of the entire digital space.[20]

The information technology companies grew so big in the past few decades that antitrust lawsuits were filed against such tech giants as Facebook (today's Meta) and Google.[21] The Federal Trade Commission attempts to introduce some power balance by regulating the "big tech," whose online monopolies have developed beyond public control. All of the proposed solutions stay within the capitalist frame: breaking the companies up and introducing anti-monopolist strategies. However, as Ben Tarnoff points out, the problem is not that the markets are too consolidated but that there are markets in the first place. This view is shared by many other authors. The economist Mariana Mazzucato writes:

"Breaking up large companies would not solve the problems of value extraction or abuses of individual rights. There is no reason to assume that many smaller Googles or Facebooks would operate differently or develop new, less exploitative algorithms."[22]

One way to counterbalance our corporatized online realities is to support user-owned infrastructures and deprivatize huge parts of the Internet. Some examples of what Tarnoff calls "practices of democratic control" point to collaboratively owned municipal broadband networks (e.g., Community Broadband Networks Initiative)[23] or cooperatively-run social media platforms (e.g., the non-profit and distributed social networking service Mastodon developed in Jena, Germany). These experiments are just a starting point of how to reimagine the Internet. In other words, in order to build a more democratic Internet, we need to change the way it is owned and organized.

Tarnoff's work on reimagining the privatized Internet is crucial in understanding what is at stake with the mainstream corporate visions of the Metaverse. If the Internet of the future rests on a few giant corporation-owned and curated Metaverses, it has nothing to do with promised creative freedom. The conversation around the Metaverse then should not be propelled by the terms of use but instead

---

20 Richter, Felix: "Amazon Maintains Lead in the Cloud Market," *Statista*, February 5, 2023, https://www.statista.com/chart/18819/worldwide-market-share-of-leading-cloud-infrastructure-service-providers/

21 Cf. Edelman, Gilad: "The Antitrust Case Against Facebook Draws Blood," *Wired*, January 12, 2022: https://www.wired.com/story/facebook-ftc-antitrust-non-price-theory/

22 M. Mazzucato: "Preventing Digital Feudalism."

23 https://communitynets.org

should focus on terms of ownership. In other words, we should not only be building the Metaverse together,[24] but more importantly, we should be owning it collectively. Currently, the public is neither in possession of land critical infrastructure (cables and cloud server farms) nor the means of production (platforms) and its products (raw data). The history of the Internet's privatization is a painful lesson but one that may show the path from which we should be diverging.

We are building the Internet collectively each day, populating it with images, fan-based artworks, digital assets in game engine stores, video games, and digital applications. Some of those assets are directly on sale via such platforms as Apple Store, Steam, Google Store; others are sold without consent in the form of user data given away in exchange for a free use of platforms such as Facebook, Instagram, and Google's ecosystem, amongst many others. Today is the moment to learn from the history of the Internet, to rethink how it is owned and what role its users play in its profit making. Instead, the popular imaginary of the Metaverse is yet again propelled by the same corporate visions that have made the Internet a space not only of creativity and human connection but also the bedrock for political radicalization and labor exploitation.

What's Next?

The simulated worlds of fantasy and commerce of the mid-20th century may have anticipated the immersive experiences of today's online games, VR experiences, and soon the Metaverse. However, neither theme parks nor Las Vegas managed to intrude into our everyday activities and monitor our behaviors to predict future commercial choices. These were still worlds with clearly demarcated lines. Once the visitors left Disneyland's gated premises, their activities and customer preferences in the "real" world were out of sight. The vision of the Metaverse then only partially derives from the immersive worlds of the past. Digitality makes a huge difference, one that makes up for a very different material and economic basis for the aesthetic experience of virtuality. The Metaverse, as envisioned by Meta and other companies, will be predominantly a surveilled digital space capitalizing on all human activity, just like Meta's existing social media platforms and messaging services (e.g., Facebook, Instagram, Threads, WhatsApp), the largest shopping

---

24 "Because at the end of the day, it is really the creators and developers who are going to build the metaverse and make this real," ensures Zuckerberg in the Metaverse introductory video. M. Zuckerberg: "The Metaverse and How We'll Build It Together," here 15:54.

and entertainment streaming platform Amazon, or all-encompassing Google's services. In this context, the idea of integrating all possible aspects of our everyday lives into a 3D web experience is as fascinating as it is alarming.

One of the least discussed material aspects behind the visions of the Metaverse is its sheer computing power that is required in order to run this possible world and the amount of data that will be produced to "populate" it with content. I tend to think of the corporate Metaverse visions as dreams of possible worlds powered by privatized Internet in times of climate ignorance. In the report on the ecological dimension of the Internet, Greenpeace dubs data centers as "the factories of the digital age."[25] The Internet is "catering to the world's insatiable appetite for messages, photos, and streaming video,"[26] And this appetite is only growing with time. It is estimated that until 2003, as a global community, we had accumulated 5 exabytes (1 exabyte = 1 billion gigabytes) of digital content. Today, this amount is consumed every few days. In 2019, we reached 10,457 exabytes.[27] In 2024, this figure is exponentially higher. It is not difficult to imagine how much more data the Metaverse would require and generate. Even without the Metaverse, companies such as Google use more electricity than entire countries.[28]

But the future of the *homo digitus* does not need to be one spent in corporate envisioned and controlled Metaverses destroying the natural environment. The imaginary momentum does not need to collapse under the swarm of technocratic ideas on the new Metaverse economic markets for the users and the "dark markets" for the investors. It is now that we should be asking the right questions. In what kind of online universe do we want to live, and on whose terms? How much data do we really need to consume? The three perspectives sketched in this text (privatization of the Internet, surveillance capitalism, technofeudalism) hopefully provided inspiration in the process of reimagining the conditions under which we may live online.

Without a new collective class consciousness, the chances to stand up to corporate visions are miniscule. Perhaps, we should understand our position as

---

25 Cook, Gary et al.: *Clicking Clean: Who is Winning the Race to Build a Green Internet?*, D.C., WA: Greenpeace 2017, p. 17, https://www.greenpeace.de/publikationen/2017011 0_greenpeace_clicking_clean.pdf

26 Ibid, p. 5.

27 Ibid, p. 17.

28 Bryce, Robert: "How Google Powers Its Monopoly with Enough Electricity For Entire Countries," Forbes, October 21, 2020: https://www.forbes.com/sites/robertbryce/2020/ 10/21/googles-dominance-is-fueled-by-zambia-size-amounts-of-electricity/?sh=2c2d6 b2668c9

"cloud-serfs" vis-à-vis "cloudists" to see the necessity to reshape the Internet infrastructure and start building up social networks and virtual worlds that are not owned by corporations but by users.[29]

In the meantime, developers of the world, unite! Refuse to build brave new Meta Horizon Worlds.

LITERATURE

Bolter, Jay David, Grusin, Richard: *Remediation. Understanding New Media*, Cambridge, MA: MIT Press 2002.

Bryce, Robert: "How Google Powers Its Monopoly with Enough Electricity for Entire Countries," *Forbes*, October 21, 2020: https://www.forbes.com/sites/robertbryce/2020/10/21/googles-dominance-is-fueled-by-zambia-size-amounts-of-electricity/?sh=2c2d6b2668c9

Cook, Gary et al.: *Clicking Clean: Who is Winning the Race to Build a Green Internet?,* D.C., WA: Greenpeace 2017, https://www.greenpeace.de/publikationen/20170110_greenpeace_clicking_clean.pdf

Durand, Cédric: *Techno-féodalisme. Critique de l'économie numérique*, Paris: Zones 2020.

Edelman, Gilad: "The Antitrust Case Against Facebook Draws Blood," *Wired*, January 12, 2022, https://www.wired.com/story/facebook-ftc-antitrust-non-price-theory/

Freyermuth, Gundolf S.: "Vegas, Disney, and the Metaverse. On the Material Anticipation of Virtual Worlds and Virtual Play in the Second Half of the 20th Century," In: Beil, Benjamin et al. (eds.), *Playful Materialities. The Stuff That Games Are Made Of*, Bielefeld: Transcript Verlag 2022, pp. 17-97.

Jenkins, Henry et al.: *Confronting the Challenges of Participatory Culture. Media Education for the 21st Century*, Cambridge, MA: MIT Press 2009, https://mitpress.mit.edu/9780262513623/

Mazzucato, Mariana: "Preventing Digital Feudalism," *Project Syndicate. The World's Opinion Page*, October 2, 2019, https://www.project-syndicate.org/commentary/platform-economy-digital-feudalism-by-mariana-mazzucato-2019-10

Morozov, Evgeny: "Critique of Techno-Feudal Reason," *New Left Review* 2022 133/134, https://newleftreview.org/issues/ii133/articles/evgeny-morozov-critique-of-techno-feudal-reason

---

29 Y. Varoufakis: *Technofeudalism: What Killed Capitalism.*

Richter, Felix: "Amazon Maintains Lead in the Cloud Market," *Statista*, February 5, 2023, https://www.statista.com/chart/18819/worldwide-market-share-of-leading-cloud-infrastructure-service-providers/

Tarnoff, Ben: *Internet for the People: The Fight for our Digital Future*, London, New York, NY: Verso Books 2022.

Tarnoff, Ben: "Deprivitizing internet: interview with Ben Tarnoff," *DigiLabour*, August 26, 2022, https://digilabour.com.br/en/deprivatizing-the-internet-interview-with-ben-tarnoff

Varoufakis, Yanis: *Technofeudalism: What Killed Capitalism*, New York, NY: Vintage Books 2023.

Zöllner, Oliver: „Wie das Metaverse uns entmenschlicht," *Der Pragmaticus. Auf den Punkt gebracht*, May 23, 2023, https://www.derpragmaticus.com/r/Metaverse-daten

Zuboff, Shoshana: *The Age of Surveillance Capitalism. The Fight for a Human Future at the New Frontier of Power*, New York, NY: Public Affairs 2019.

Zuboff, Shoshana: "Shoshana Zuboff on Surveillance Capitalism," July 29, 2019, *EconTalk. Conversations for the Curious*, podcast, https://www.econtalk.org/shoshana-zuboff-on-surveillance-capitalism/

Zuckerberg, Marc: "The Metaverse and How We'll Build It Together Connect 2021." *Meta*. October 28, 2021, YouTube video, 01:17:26, https://www.youtube.com/watch?v=Uvufun6xer8