**Non-Commercial, Open Source, and Federated Social Platforms as Effective Community Alternatives**

*Comparing the design philosophies and aggregative behavior of commercial and non-commercial, federated Social Media services.*

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While user-maintained Bulletin Board Systems (BBSs) like Usenet and Fidonet established Open Web forums in the 1980s, a proprietary parallel called CompuServe migrated from its original implementation as a “business-oriented mainframe computer communication solution(Shah)” to the public domain 7

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This essay seeks to examine the breadth of donor-funded, open source, federated social networks as technical alternatives to commercial online environments like Facebook and Twitter as measured by their users’ overall satisfaction with them as means of social interactivity over time. Following recent debates and confusion regarding the ethics in the practices of the organizations which built them and the extent of their complicity in the radical cultural consequences of digital communication surrounding the United States’ Presidential Election in 2016, it proposes that greater rhetorical and legislative attention be invested in the tangible, documented design decisions across their products’ history as the most crucial, relevant, and effective means of understanding the whole context, within which it will define open source software development and federated networking in contrast to the guarded industry establishment which the dominant services have transitioned from disrupting by design to entirely exemplifying thus far in the century. After examining conspicuous alterations and inexplicably silent feature additions and subtractions across the whole of social network development, as well as their eventual result’s reflections on the conscious satisfaction of individual Social Media users, it will conclude by profiling a select few communities thriving on donation-funded, collaboratively-maintained, and/or decentralized platforms as superior foundations upon which citizens of the web might rebuild their own traumatized and fragmented networks when they are ready to begin again.

# **Introduction**

If we accept Electronic Mail as the absolute genesis of what we call “Social Media,” the term becomes inextricably linked with the history of the World Wide Web as a whole(Edosomwan et al.). The technical protocol we know as Email is by nature “decentralized,” “distributed,” *and* “federated” as the terms are used in this essay because it is technically unbeholden to any single transmission or client service – commercial or not – and it allows users to participate with any server installation they choose, up to and including personal email servers installed in one’s home(Lee). In this essay, “decentralized social networks,” “distributed social platforms,” and “federated social networking” fall together under the category of “open web technologies,” which are by definition non-proprietary. This essay proceeds under the notable assumption that The Web as a whole “was, at its core and in its design, a democratizing technology,” and that its potential to be more “open” will remain limitless as long as its [fundamental structure is at all recognizable as The Web(Bell et al.). In fact, using the adjectives “decentralized” and “distributed” in front of any web-native technologies could be considered oxymoronic, as The Web’s existence as an entity comprised of many interconnecting interconnections without any requisite central spaces or governing bodies remains technically unmolested, despite the encroaching would-be for-profit adjudicators Google and Facebook. (While the abrupt and total disappearance of either or both company’s total online proprietorship would be a massive event, the remainder of The Web would continue to function.)

Email is undoubtedly a form of social *networking*, though it was the addition of Bulletin Board Systems (BBS) – a parallel technology – that manifested what many scholars have offered as the first published media for the sake of socializing online. Four key pillars of Social Media services in their current form were arrived upon within an editorial issue(Obar and Wildman):

1. The software powering Social Media services are definitive “Web 2.0” properties, as platforms “for creating and publishing content, and also [places] where content can be ‘continuously modified by all users in a participatory and collaborative fashion.’”

2. Social Media services are primarily driven by \*User\*-Generated Content.

3. Social Media services include a directorial functionality which enables users to create “profiles” to represent themselves.

4. Social Media services “facilitate the development of social networks” by the interconnection of user profiles as units.

In 1996, Poet, Grateful Dead ghostwriter, and co-founder of the Electronic Frontier Foundation John Perry Barlow published a manifesto entitled \*A Declaration of the Independence of Cyberspace\*(John Barlow) which proves an insightful abstract into the most romanticized, principled, and abstractly ideological thought of that period surrounding The Web’s future.

Cyberspace consists of transactions, relationships, and thought itself, arrayed like a standing wave in the web of our communications. Ours is a world that is both everywhere and nowhere, but it is not where bodies live. We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity.

From our retrospective, the bravado in Barlow’s declarations addressed specifically to “Governments of the Industrial World” presents an important contrast on which to reflect. Current events surrounding regulation of the tech industry reflect a general desire for \*more\* government intervention from both mainstream political parties in the United States. As I write, an appearance by the CEOs of Twitter and Facebook in front of a Senate Judiciary Committee has just concluded, during which both fielded questions from senators of both mainstream parties, largely regarding “censorship” on their platforms performed by the companies themselves. It is beyond the scope of this essay to address the particulars of this issue, so we are going to continue under the assumption that privately-owned social platforms have the constitutional right to censor, manipulate, or otherwise editorialize User-Generated Content (UGC) as­ they see fit, but it will outline specific advantages in regards to “The Censorship Issue” offered by current Federated Social platforms. The reality of Barlow’s fears in 2020: even if the United States government had intentions to regulate speech on The Web, it has consistently demonstrated an inability to comprehend the meaning of such action, much less an ability to enforce legislation within the realm of online speech.

This essay cites heavily from meta-media publications like the *Columbia Journalism Review* and Harvard’s *Nieman Lab*, as well as from several individual articles oriented around the subject of social media’s impact on the way news is consumed, skewing its bias toward the media industry in many ways. I pursued this direction in order to make what I believe to be an original suggestion: Federated Social Platforms are ideal solutions to this issue, too, largely because of their widespread omission of any non-linear (algorithmic) content prioritization in timelines. Much like Twitter’s original design, content on services like Mastodon and Diaspora appears in a purely-chronological “Timeline,” which – if still present – is now a highly-obscured option(Romano) in mainstream proprietary networks. Inevitably, it discusses recent efforts by Facebook, Twitter, and other platforms (which I will occasionally refer to as "Big Social") to reform aggregative processes within their functions as news-sharing services as it cites the research critics have referenced in response.

# **Origins**

# While user-maintained Bulletin Board Systems (BBSs) like Usenet and Fidonet established Open Web forums in the 1980s, a proprietary parallel called CompuServe migrated from its original implementation as a “business-oriented mainframe computer communication solution(Shah)” to the public domain. As of Fall 1994, CompuServe charged $8.95 per month ($15.94, adjusted for inflation) for “[unlimited use of its standard services(Lewis),” which included “news, sports, weather, travel, reference libraries, stock quotes, games and limited electronic mail,” and between $4.80 and $22.80 per \*hour\* ($8.55 to $40.61, adjusted for inflation) for use of its “’extended’ services,” including a variety of discussion forums established by topic. In the 1990s, it would be joined by competing internet service providers Prodigy and America Online, the latter of which originating the first “member profiles” for users, forming the third pillar of *Telecommunications Policy*’s Social Media requisites.

Inheriting the environment pioneered by these original titans were the first college-oriented networking sites like Classmates.com, myYearbook.com, and SixDegrees.com. The former introduced the concept of user discovery by way of grassroots associations and has managed to survive (in some form) to this day. SixDegrees was notable as “one of the very first [Social Networks] to allow its users to create profiles, invite friends, organize groups, and surf other user profiles.” Following social development of the original services goliaths and these insular collegiate networks, another microcosm sprouted up within this first generation of ethnic-oriented networks such as AsianAvenue.com and BlackPlanet.com, which both continue operation to date.

Works Cited

Almeida, Tiago A, et al. “Text normalization and semantic indexing to enhance instant messaging and SMS spam filtering.” *Knowledge-Based Systems*, vol. 108, 2016, pp. 25–32.

Barabas, Chelsea, et al. “Defending Internet freedom through decentralization: back to the future.” *The Center for Civic Media & The Digital Currency Initiative MIT Media Lab*, 2017.

Barlow, John. “A Declaration of the Independence of Cyberspace.” *Electronic Frontier Foundation*, Electronic Frontier Foundation, 8 Feb. 1996, https://www.eff.org/cyberspace-independence.

Barlow, JP. “The debate over Internet Governance: A snapshot in the year 2000.” *Harvard, MA. URL: http://cyber. law. harvard. edu/is99/governance/barlow. html [Last Accessed 2010-03-10]*, 2000.

Bell, Emily J, et al. *The platform press: How Silicon Valley reengineered journalism*. 2017.

Ben, Ben-David, Anat. “Counter-archiving Facebook.” *European Journal of Communication*, vol. 35, no. 3, 2020, pp. 249–64.

Besan, Besan\ccon, Lonni, et al. “Open up: a survey on open and non-anonymized peer reviewing.” *Research Integrity and Peer Review*, vol. 5, no. 1, 2020, pp. 1–11.

Boshrooyeh, Sanaz Taheri, et al. “Integrita: Protecting View-Consistency in Online Social Network with Federated Servers.” *Cryptology ePrint Archive*, 2019.

Bravo, Giangiacomo, et al. “The effect of publishing peer review reports on referee behavior in five scholarly journals.” *Nature communications*, vol. 10, no. 1, 2019, pp. 1–8.

Breslin, John G, et al. *The social semantic web*. Springer Science & Business Media, 2009.

Bucher, Taina, and Anne Helmond. *The affordances of social media platforms*. 2017.

Bull, Andy. *Multimedia journalism: A practical guide*. 2015.

Calvo, Dafne. “Free software meets Facebook: Placing digital platforms’ usage by free culture communities.” *new media & society*, vol. 24, no. 5, 2022, pp. 1076–96.

Camacho, David, et al. “The four dimensions of social network analysis: An overview of research methods, applications, and software tools.” *Information Fusion*, vol. 63, 2020, pp. 88–120.

Cayzer, Steve. “Semantic blogging and decentralized knowledge management.” *Communications of the ACM*, vol. 47, no. 12, 2004, pp. 47–52.

Chen, Mingqing, et al. “Federated learning of out-of-vocabulary words.” *arXiv preprint arXiv:1903.10635*, 2019.

Chen, Victoria Y, and Paromita Pain. “News on Facebook: How Facebook and newspapers build mutual brand loyalty through audience engagement.” *Journalism & Mass Communication Quarterly*, vol. 98, no. 2, 2021, pp. 366–86.

Chen, Yan, et al. “Decentralized governance of digital platforms.” *Journal of Management*, vol. 47, no. 5, 2021, pp. 1305–37.

Cool, Jennifer Catharine. *Communities of innovation: Cyborganic and the birth of networked social media*. Citeseer, 2008.

Cortegiani, Andrea, et al. “Predatory open-access publishing in anesthesiology.” *Anesthesia & Analgesia*, vol. 128, no. 1, 2019, pp. 182–87.

Couldry, Nick, and Ulises A Mejias. “Data colonialism: Rethinking big data’s relation to the contemporary subject.” *Television & New Media*, vol. 20, no. 4, 2019, pp. 336–49.

Deuze, Mark, and Tamara Witschge. “Beyond journalism: Theorizing the transformation of journalism.” *Journalism*, vol. 19, no. 2, 2018, pp. 165–81.

Dias, Nicholas, et al. “Emphasizing publishers does not effectively reduce susceptibility to misinformation on social media.” *Harvard Kennedy School Misinformation Review*, vol. 1, no. 1, 2020.

Donovan, Joan, and Brian Friedberg. “Source Hacking.” *Data & Society*, 2019.

Edosomwan, Simeon, et al. “The history of social media and its impact on business.” *Journal of Applied Management and entrepreneurship*, vol. 16, no. 3, 2011, pp. 79–79.

Gawer, Annabelle. “Digital platforms’ boundaries: The interplay of firm scope, platform sides, and digital interfaces.” *Long Range Planning*, vol. 54, no. 5, 2021, pp. 102045–45.

Geradin, Damien, and Dimitrios Katsifis. *Google’s (Forgotten) Monopoly--Ad Technology Services on the Open Web*. 2019.

Gerwing, Travis G, et al. “Quantifying professionalism in peer review.” *Research Integrity and Peer Review*, vol. 5, no. 1, 2020, pp. 1–8.

Good, Katie Day. “From scrapbook to Facebook: A history of personal media assemblage and archives.” *New media & society*, vol. 15, no. 4, 2013, pp. 557–73.

Goyanes, Manuel, and Marton Demeter. “Beyond positive or negative: Understanding the phenomenology, typologies and impact of incidental news exposure on citizens’ daily lives.” *new media & society*, vol. 24, no. 3, 2022, pp. 760–77.

He, Chaoyang, et al. “Central server free federated learning over single-sided trust social networks.” *arXiv preprint arXiv:1910.04956*, 2019.

Helmond, Anne, et al. “Facebook’s evolution: Development of a platform-as-infrastructure.” *Internet Histories*, vol. 3, no. 2, 2019, pp. 123–46.

Heravi, Bahareh Rahmanzadeh, and Jarred McGinnis. “Introducing social semantic journalism.” *The Journal of Media Innovations*, vol. 2, no. 1, 2015, pp. 131–40.

Jensen, Jesper. “A systematic literature review of the use of Semantic Web technologies in formal education.” *British Journal of Educational Technology*, vol. 50, no. 2, 2019, pp. 505–17.

Jerrentrup, Maja Tabea. “Chronology in Social Media: Linear Media and Non-linear Postings.” *Global Media Journal*, vol. 18, no. 34, 2020, pp. 1–8.

Jordan, Katy. “From social networks to publishing platforms: A review of the history and scholarship of academic social network sites.” *Frontiers in Digital Humanities*, vol. 6, 2019, pp. 5–5.

Ju, Alice, et al. “Will social media save newspapers? Examining the effectiveness of Facebook and Twitter as news platforms.” *Journalism practice*, vol. 8, no. 1, 2014, pp. 1–17.

Kleis, Kleis Nielsen, Rasmus, and Sarah Anne Ganter. “Dealing with digital intermediaries: A case study of the relations between publishers and platforms.” *New media & society*, vol. 20, no. 4, 2018, pp. 1600–17.

Kou, Gang, et al. “Evaluation of feature selection methods for text classification with small datasets using multiple criteria decision-making methods.” *Applied Soft Computing*, vol. 86, 2020, pp. 105836–36.

Kwet, Michael. “Fixing social media: toward a democratic digital commons.” *Markets, Globalization & Development Review*, vol. 5, no. 1, 2020.

Lee, Micah. “Avoid Surveillance With Helm, a Home Server Anyone Can Use to Keep Emails Truly Private.” *The Intercept*, 29 Apr. 2019, https://theintercept.com/2019/04/30/helm-email-server.

Lewis, Jane, and Anne West. “‘Friending’: London-based undergraduates’ experience of Facebook.” *New Media & Society*, vol. 11, no. 7, 2009, pp. 1209–29.

Lewis, Peter H. “PERSONAL COMPUTERS; The Compuserve Edge: Delicate Data Balance.” *The New York Times*, 28 Nov. 1994, https://www.nytimes.com/1994/11/29/science/personal-computers-the-compuserve-edge-delicate-data-balance.html.

Lovisetto, Gary, and Etienne Riviere. *A foundation for extensible and decentralized social networks*. Accessed 15 Aug. 2022.

Lu, Yanqin, and Jae Kook Lee. “Determinants of cross-cutting discussion on Facebook: Political interest, news consumption, and strong-tie heterogeneity.” *New Media & Society*, vol. 23, no. 1, 2021, pp. 175–92.

Magaudda, Paolo, and Tiziana Piccioni. “Practice Theory and Media Infrastructures:" Infrastructural Disclosures" in Smartphone Use.” *Sociologica*, vol. 13, no. 3, 2019, pp. 45–58.

McInroy, Lauren B, and Oliver WJ Beer. “Wands up! Internet-mediated social advocacy organizations and youth-oriented connective action.” *New Media & Society*, vol. 24, no. 3, 2022, pp. 724–40.

Naskali, Juhani. “Examination of Hard-Coded Censorship in Open Source Mastodon Clients.” *ETHICOMP 2020*, 2020, pp. 333–33.

Niemeyer, Katharina, and Emily Keightley. “The commodification of time and memory: Online communities and the dynamics of commercially produced nostalgia.” *New Media & Society*, vol. 22, no. 9, 2020, pp. 1639–62.

Nitschke, Paula, et al. “Political organizations’ use of websites and Facebook.” *New Media & Society*, vol. 18, no. 5, 2016, pp. 744–64.

Obar, Jonathan A, and Steven S Wildman. “Social media definition and the governance challenge-an introduction to the special issue.” *Obar, JA and Wildman, S.(2015). Social media definition and the governance challenge: An introduction to the special issue. Telecommunications policy*, vol. 39, no. 9, 2015, pp. 745–50.

Partin, William Clyde. “Bit by (Twitch) bit:“platform capture” and the evolution of digital platforms.” *Social media+ society*, vol. 6, no. 3, 2020, pp. 2056305120933981–81.

Petersen, Alexander M. “Megajournal mismanagement: Manuscript decision bias and anomalous editor activity at PLOS ONE.” *Journal of Informetrics*, vol. 13, no. 4, 2019, pp. 100974–74.

Poell, Thomas, et al. “Platformisation.” *Internet Policy Review*, vol. 8, no. 4, 2019, pp. 1–13.

Primack, Brian A, et al. “Use of multiple social media platforms and symptoms of depression and anxiety: A nationally-representative study among US young adults.” *Computers in human behavior*, vol. 69, 2017, pp. 1–9.

Rashidian, Nushin, et al. *Platforms and publishers: The end of an era*. 2020.

Rodgers, Diane M. “Local Chapter Outposts: A Dilemma for Federated Social Movement Organizations.” *Sociological Inquiry*, vol. 89, no. 3, 2019, pp. 373–400.

Rogers, Richard. “Deplatforming: Following extreme Internet celebrities to Telegram and alternative social media.” *European Journal of Communication*, vol. 35, no. 3, 2020, pp. 213–29.

Romano, Aja. “Twitter’s chronological timeline is back. Here’s how to restore it..” *Vox*, 19 Sept. 2018, https://www.vox.com/culture/2018/9/20/17876098/twitter-chronological-timeline-back-finally.

Ross, Ross-Hellauer, Tony, and G\"or\"ogh, Edit G. “Guidelines for open peer review implementation.” *Research Integrity and Peer Review*, vol. 4, no. 1, 2019, pp. 1–12.

Shah, Saqib. “The history of social networking.” *Digital Trends*, 13 May 2016, https://www.digitaltrends.com/features/the-history-of-social-networking.

Stenstr, Stenstr\"om, Kristina. “Involuntary childlessness online: Digital lifelines through blogs and Instagram.” *new media & society*, vol. 24, no. 3, 2022, pp. 797–814.

Sun, Yuan, et al. “The impact of enterprise social media platforms on knowledge sharing: An affordance lens perspective.” *Journal of Enterprise Information Management*, 2019.

Tennant, Jonathan P, et al. “Ten hot topics around scholarly publishing.” *Publications*, vol. 7, no. 2, 2019, pp. 34–34.

--- *Ten myths around open scholarly publishing*. 2019.

Tennant, Jonathan P, and Ross-Hellauer, Tony Ross. “The limitations to our understanding of peer review.” *Research integrity and peer review*, vol. 5, no. 1, 2020, pp. 1–14.

Watson, Sara M. *Toward a constructive technology criticism*. 2016.

Welbers, Kasper, and Micha\"el Opgenhaffen. “Social media gatekeeping: An analysis of the gatekeeping influence of newspapers’ public Facebook pages.” *New Media & Society*, vol. 20, no. 12, 2018, pp. 4728–47.

Westerman, David, et al. “A social network as information: The effect of system generated reports of connectedness on credibility on Twitter.” *Computers in Human Behavior*, vol. 28, no. 1, 2012, pp. 199–206.

Wilken, Rowan. “Places nearby: Facebook as a location-based social media platform.” *New Media & Society*, vol. 16, no. 7, 2014, pp. 1087–103.

Zhou, Pan, et al. “A privacy-preserving distributed contextual federated online learning framework with big data support in social recommender systems.” *IEEE Transactions on Knowledge and Data Engineering*, vol. 33, no. 3, 2019, pp. 824–38.

Zuckerman, Ethan. *The case for digital public infrastructure*. 2020.

---. “What is Digital Public Infrastructure?” *center for journalism and liberty,” available at: https://static1. squarespace. com/static/5efcb64b1cf16e4c487b2f61*, vol. 5, 2020, pp. 1605639019414–14.

Zulli, Diana, et al. “Rethinking the “social” in “social media”: Insights into topology, abstraction, and scale on the Mastodon social network.” *New Media & Society*, vol. 22, no. 7, 2020, pp. 1188–205.

Appendix