Social Media and the “Read-Only” Web: Reconfiguring Social Logics and Historical Boundaries

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Abstract
The web’s historical periodization as Web 1.0 (“read-only”) and Web 2.0 (“read/write”) eras continues to hold sway even as the umbrella term “social media” has become the preferred way to talk about today’s ecosystem of connective media. Yet, we have much to gain by not exclusively positing social media platforms as a 21st-century phenomenon. Through case studies of two commercially sponsored web projects from the mid-1990s—Massachusetts Institute of Technology Media Lab’s Day in the Life of Cyberspace and Rick Smolan’s 24 Hours in Cyberspace—this article examines how notions of social and publics were imagined and designed into the web at the start of the dot-com boom. In lieu of a discourse of versions, I draw on Lucy Suchman’s trope of configuration as an analytic tool for rethinking web historiography. By tracing how cultural imaginaries of the Internet as a public space are conjoined with technological artifacts (content management systems, templates, session tracking, and e-commerce platforms) and reconfigured over time, the discourses of “read-only publishing” and the “social media revolution” can be reframed not as exclusively oppositional logics, but rather, as mutually informing the design and development of today’s social, commercial, web.

Keywords
social media, web history, web 1.0, web 2.0, public, read-only

For a decade now, the participatory potential of social media has become synonymous with Web 2.0 platforms like Facebook and Twitter that facilitate the sharing of user-generated content. Since 2004, when Tim O’Reilly organized the first Web 2.0 conference as a way to “restore confidence in an industry that had lost its way after the dotcom bust,” (O’Reilly & Battelle, 2009) concepts like personalization, participation, collaboration, and sharing have been characterized as hallmarks for imagining the “next generation” web: version 2.0. Even as the umbrella term “social media” supplants talk of Web 2.0 in the technology industry today (Marwick, 2013), the legacy of versions continues to hold sway as a periodization model lurking in both popular culture and academic research where social media is consistently figured as a 21st-century phenomenon. Allen (2013) refers to this type of web history as a “discourse of versions,” which functions by attempting to bring order and mastery over an anticipated technological future by claiming control of the meaning of the past. Today, most popular accounts of web history follow a narrative in which the participatory read/write web evolved from what is now commonly remembered as the “read-only” quality of Web 1.0 (Gillmor, 2008).

Yet, a closer examination of web history suggests the boundaries separating 1.0 and 2.0 eras may do more to distort our understandings of cultural and technological change. By demarcating these periods in ways that presume two distinct and internally consistent logics, we lose sight of how the past is also characterized by complex overlaps, inconsistencies, and constant reconfigurations. For example, Stevenson (2014) analyzes the design of one of the first commercial web publications, HotWired, between 1994 and 1997 and finds both parallels with 21st-century understandings of the participatory web and disjunctures that challenge easy distinctions between editorial-driven publishing and user-driven participation practices. Even in O’Reilly’s accounts of Web 2.0, we find hints of a more complicated genealogy that belies simple narratives of technological
progress. In his second attempt to articulate core values of Web 2.0, O’Reilly (2006) explains,

Ironically, Tim Berners-Lee’s original Web 1.0 is one of the most “Web 2.0” systems out there—it completely harnesses the power of user contribution, collective intelligence, and network effects. It was Web 1.5, the dot-com bubble, in which people tried to make the web into something else, that fought the internet, and lost.

This explanation both retains the chronological development of a discourse of versions and simultaneously collapses these categories so Web 1.0 is one of the most 2.0 systems out there. Version 1.5, the dot-com bubble, is the outlier deserving explanation. If we follow O’Reilly then, the question thus becomes not why the web became participatory or social in the 2000s, but instead, how did the user-generated social web of the 1990s turn into “something else”—static, read-only web pages, one presumes—a model that “fought the internet” by neglecting its true participatory nature? What this line of inquiry risks losing sight of, however, is that neither “read-only” nor “social” were natural qualities of the web: rather, both were achievements that took imagination and effort. Keeping this in mind, the task of examining how and why a read-only paradigm gained traction in the mid-1990s, only to be reconfigured in both imaginative and technical terms as a “social media revolution” a few years later, may productively challenge the most common assumptions about social media platforms today.

The occasion of this special issue on social media and the transformation of public space presents an opportunity to rethink the dominant narrative of web historiography by considering how notions of social and publics have been historically imagined in relation to Internet culture and figure in the design of media systems and platforms. By attending to historical genealogies of “social media” and “read-only” publishing, we are better equipped to understand how contemporary social media platforms install and naturalize a particular version of the “social” that depends on the algorithmic tracking of networks of association (Couldry & van Dijck, 2015). Lost in the dominant narrative of a shift from the 1.0 publishing models to the user-generated social web of 2.0 are the ways these concepts are continually reconfigured through design and production practices, cultural and technological frameworks, institutional arrangements, and professional affiliations that yield both fruitful collaborations and conflicting visions over the very meaning of the web. Yet, at the heart of these negotiations, we still encounter many of the classic tensions between publics and audiences that have long vexed media studies scholarship and continue to impact discourses surrounding mediated and networked publics (Livingstone, 2005).

Interrogating Boundaries: Configuration as Method Assemblage

To consider how the early web’s promise and potential as a new global communication network invoked a tension between how publics were imagined and how they ought to be addressed online, this article traces the development, launch, and afterlife of two commercially sponsored web projects produced at the very start of the dot-com boom: Day in the Life of Cyberspace, launched on 10 October 1995 by the Massachusetts Institute of Technology (MIT) Media Lab (henceforth, 1010) and 24 Hours in Cyberspace (henceforth, 24 Hours) on 9 February 1996 by photographer Rick Smolan’s production company, Against All Odds. These two cases are significant because they represent conflicting visions over the future of the web: what it should look like and how users might participate, who is most qualified to design it and what kind of logics, assumptions, and values ought to guide these efforts. These sites also exemplify two different ways of understanding and addressing a public: in 1010, the web was treated as a social space for public deliberation and user-to-user participation; in 24 Hours, the web was a vehicle for delivering a publication to an imagined audience. In contemporary parlance, these models roughly articulate social media to networked publics (Benkler, 2006; boyd, 2008; Papacharissi, 2002) and web publishing to mass-mediated publics (Butsch, 2007; Thompson, 1995). The former involves participatory platforms that allow users to engage with one another directly by sharing opinions and generating content; the latter recalls the direct address toward an anonymous mass audience, mediated through print or broadcasting channels that do not register the activity of users. But as this article aims to show, these dichotomies fail to engage with more complex ways that people, texts, institutions, technologies, and economies interact, develop particular qualities and logics, and change over time. Focusing on how publics and sociality figured in early web design offers one way we might begin to grapple with these entanglements.

Drawing on interviews and historical materials including broadcast and popular press, web archives, software applications, tech documentation, and marketing, I suggest it is within the socio-economic context of the early dot-com boom that we might understand the “read-only” charge of Web 1.0 (or Web 1.5 for O’Reilly) not as a failure of imagination or a technological limitation, but as a strategic and hard-fought social achievement of a particular group of actors, namely media professionals, staking a claim for the future of the rising web. But if we follow the story of these two projects into their afterlife—that is, considering how the various technologies and related discourses were reconfigured as solutions to other problems in a changing socio-economic context—we find many of the core components of the “read-only” web publishing logic are reconfigured as a “self publishing” revolution,
which is then articulated to the celebrated “Web 2.0” practice of blogging. Meanwhile, the very technologies designed in the mid-1990s to support a social web closer to how it is imagined today, with personalization features, user tracking, and rating mechanisms, hardly inspired a social media revolution; instead, these technical components were reconfigured in the service of e-commerce and content targeting for customer management.

As we will see, the work of undoing the 1.0/2.0 divide begins to expose a vast realm of divisions made to seem inherently natural, but as John Law (2004) argues, do not necessarily equip us to understand the “messy reality” of the world. This raises questions not just about periodization, but also about the methods we use to conceptualize and impose order by fixing the past into a coherent narrative that makes sense. Law introduces the term “method assemblage” to account for the ways knowledge practices and methodologies enact a “bundle of ramifying relations” that generate insides (what counts as present and accounted for), outsides (the world “out there”), and otherness (all that disappears beyond the boundaries of the project) (Law, 2004, pp. 84-85). Assemblage is a term from Deleuze and Guattari that describes an ad hoc fitting together of heterogeneous components, not a stable arrangement but a “tentative and hesitant unfolding” in which “the elements put together are not fixed in shape . . . but are constructed at least in part as they are entangled together” (Law, 2004, pp. 41-42). The concept of method assemblage is a call for the critical reinvention of more flexible boundaries that might better deal with the fluidity and multiplicity of the world.

Lucy Suchman (2012) offers the trope of “configuration” as a method assemblage that both attends to modes of production and offers a critical device for interrogating boundaries. In the realm of computers, configuration quite literally refers to how a system is set up, the specific conjunction of hardware, software, components, and external devices that are put together for users to accomplish particular tasks. Similarly, when a team is assembled to produce a large or complex website, people bring learned lessons, former relationships, skills, ideas, as well as code and technologies developed in other contexts. All of these pieces are constantly in motion, coming together, taking shape, only to be fit together in new ways, in different contexts, for different purposes and with different meanings later on. Configuration, Suchman proposes, is a device for studying how material artifacts and cultural imaginaries are joined together:

> It alerts us to attend to the histories and encounters through which things are figured into meaningful existence, fixing them through reiteration but also always engaged in “the perpetuity of coming to be” that characterizes the biographies of objects as well as subjects. (See Daston, 2000, p. 1; cited in Suchman, 2012, p. 50)

If we put aside the discourse of versions and approach the web and web historiography as a site of ongoing configuration—“the perpetuity of coming to be”—we find firm distinctions between read-only publishing and a read/write social web are difficult to sustain. As an analytical lens, (re)configuration offers a way to simultaneously engage the fitting together and the “tentative unfolding” of material artifacts (e.g. computer workstations outfitted with selected software) production practices (e.g. collaborative team-based models) and cultural imaginaries (e.g. how audiences/publics are imagined and addressed).

By examining *1010* and *24 Hours* in terms of configuration, the social web’s coming-to-be not is not a linear progression toward participation, but a negotiation of different models for understanding and addressing publics. As Michael Warner (2002) points out, the modern idea of a public refers to a social space of discourse: it is not a numerable collection of actual human beings, but a social imaginary that comes into being by virtue of being addressed, and is sustained through the temporal circulation of texts (p. 90). These mass-mediated publics associated with print and broadcast were premised on audiences as imagined communities (Anderson, 1991). With the rise of electronic communication networks like the Internet and web in the 1990s and 2000s, new models were proposed: “virtual publics” formed through computer-mediated communication (Jones & Rafaei, 2000), a “networked public sphere” that promised to disrupt the power dynamics of mass media market economies (Benkler, 2006), and the “networked publics” of social media sites, where the dynamics of participation are shaped by platform affordances and complicated by the collapsing context that occurs when communication intended for a specific audience is received by multiple audiences instead (Marwick & boyd, 2011). With the Internet, publics could be simultaneously imagined and numerable, sustained through the circulation of texts and shaped by the affordances of platforms. In the following sections, I consider how competing ideas about publics—as an audience to address and as users to engage—informed early web design practices along three intersecting vectors: discourses of quality and legitimacy, modes of address, and emerging temporalities associated with “real-time.” I begin by framing these two projects within a set of conflicts about the “right” way to make the web at the very moment the web itself became a topic of public concern, the moment typically designated as the start of the dot-com boom.

### Conflicting Visions: Imagining an Internet Spectacular

The war of the coffee table books is brewing and it’s being waged with the most unlikeliest of armies. On one side is a group of rumpled and angry scientists from MIT Media Lab, a world-renowned research facility known more for scholarship
than imbroglio. On the other side is Rick Smolan, a celebrated photographer-cum-publisher who started “A Day In the Life” series of photographic essay books swept the country in the 1980s.

—Jon Auerbach, The Boston Globe, 18 January 1996

The Boston Globe’s coverage of the “war of the coffee table books” has the elements for great drama: curmudgeonly scientists sequestered in high-tech labs versus a savvy celebrity photographer whose popular books adorn coffee tables across America. But like most wars, the terms of dispute are rarely the product of a single point of disagreement, let alone a contest over coffee table books. On one hand, this is a story of an ambitious web event that splintered into separate projects, conceived within the logics of two different institutional contexts. Both involved utopian visions of a digital networked future, a host of corporate sponsors who donated supporting technologies, and teams of experts and strategic partners charged with creating something truly spectacular to celebrate the global significance of the fledgling World Wide Web. It is also the story of a bitter feud, representative of a clash between two different styles of imagining a digital networked future. By comparing how “quality” was imagined in these projects, we find different strategies for putting the power of the web on display as a new medium poised to address a global public.

In the spring of 1995, the MIT Media Lab, a renowned technology research center known for creative high-tech innovation, began brainstorming ideas for its 10-year anniversary celebration, which fell on the fortuitously digital date of October 10th (10/10). Imagining a world-wide digital event that leveraged the Media Lab’s massive ATM (asynchronous transfer mode) fiber network, the concept for 1010 came together after a graduate student in the Media Lab, Judith Donath, suggested creating “a global portrait of cyberspace,” which involved building a website composed of stories, sounds, and images contributed by users around the world (“1010 Revisited,” 1996). This project was called Day in the Life of Cyberspace (known internally as 1010) and from the beginning, it was framed by the Media Lab as a public event comprising the activity of users. Describing the challenges of planning the site, Donath explains the goal was “to make it intriguing and enjoyable enough so that they would not only explore it, but actively participate in it.” But the Media Lab was also mindful of quality participation: the level of engagement mattered and they specifically aimed “to create an atmosphere that fostered thoughtful contributions” (Donath, 1996, sec. 7.1).

To accomplish these goals and build interest over time, the Media Lab decided to launch the site as a 10-day countdown to the anniversary on 10/10. Over a period of 9 days, users would contribute content, either through email or through activity on the website, in response to a different theme each day (i.e., privacy, expression, generations, wealth, faith, body, place, tongues, environment). On the 10th day, there would be a big gala celebration and a curated collection of contributions would be assembled “live from the Media Lab in Cambridge, Massachusetts,” where “teams of professional editors and World Wide Web hackers working in ‘mission control’ at MIT” would collect, edit, and publish “the best of those bits” on the net (“About This Event,” 1995). These assembled “bits” would be preserved as a cyberspace “time capsule” from 1995 and later published as a book to be called Bits of Life: Reflections on the Digital Renaissance (“About the Book,” 1996).

Across these various forms—website, book, media event, anniversary party—we encounter a blend of values and concepts that are crucially linked to ideas about how a digital public would best be served by the web. It was, on one hand, an event that celebrated the digital as much as it did the Media Lab. Nicholas Negroponte, the Media Lab’s co-founder and director, had just published his book Being Digital (1995) and the 10-day launch of Day in the Life of Cyberspace (http://www.1010.org) culminated with a gala symposium that began at precisely 10 min past 10 on the 10th day of the 10th month of 1995 (Grossman, 1995). The project was also a celebration of user participation—but powered by the might of technological luminaries and the organizational capacities of an institute like MIT. The call for participation framed this relationship as collaboration: “Your bits will become part of a global, public, community event—a canvas that we all paint together.” This vision of the web—participatory, social, crowd-sourced, shared, and underwritten by a powerful platform provider—is typically understood as a 2.0 model; yet, here we see these ideals expressed in one of the first attempts to celebrate the power and reach of digital global networks. The Media Lab was well aware of the limits of a digital time capsule to serve a future public. “Pages in the web are like footsteps on the beach. In a few years the bits and even much of the architecture of the web today may be rinsed away by wave after wave of new software” (“About the Book,” 1996). Hence, they needed a book.

To produce it, Negroponte brought photographer Rick Smolan, known for his Day in the Life book series, on as a consultant in May of 1995. But things hit a snag that August after a meeting with Kodak. Although Kodak sponsored each of Smolan’s earlier Day in the Life books, this meeting did not go well (Auerbach, 1996; Rifkin, 1996). As Kodak’s senior vice president of marketing later explained, “If they intended to create a project that would offer value to a sponsor like Kodak, there wasn’t going to be enough time to do the job right” (Rifkin, 1996). Shortly afterwards, Smolan abruptly quit, a decision that he said boiled down to quality: “The more I talked to sponsors and technology people, the more advice I got to do it well or not at all” (Rifkin, 1996). Although the Media Lab’s anniversary event went on as planned that October, it took place on a much smaller scale than initially imagined. For a Lab that built a reputation on “personalization” technologies like Personal Newspaper, Personal Television, and Conversation Desktop (Brand,
1988, p. 150), the task of integrating a mass media model, in which “teams of professional editors” in “mission control” were charged with curating and assembling “the best of those bits,” would ultimately prove challenging for an under-staffed editorial team. Sasha Cavender, an editor who flew in to help, explained, “The sheer volume of email flying off the printers made it impossible to read everything.” She said, “While there were plenty of students who could write code, MIT didn’t have the resources to edit, organize, and curate this material” (Sasha Cavender, personal communication, 19 April 2014). This was not an event designed to showcase the power of editorial oversight. Instead, the focus was on the anniversary celebration and the interactive capabilities of the site. Plans for the book were eventually scrapped.

This first conflict, then, was that Smolan and the Media Lab understood “doing it well” in very different terms. For the Media Lab, the emphasis was on capturing the presence of users as they made sense of the Internet in 1995, and designing technologies that could facilitate user-to-user interaction online. Donath told a reporter during the 1010 launch, “It’s not supposed to be the best of the Web, it’s supposed to be a portrait of the electronic today—a frozen moment” (Lynch, 1995). But to Smolan, a famed photographer known for taking on ambitious projects, the MIT event looked more like “an amateur photography contest” than the spectacle he had in mind (Weise, 1996). After departing 1010, he immediately began planning his own version called 24 Hours in Cyberspace, billed as “part event, part broadcasting, and part publication,” which took place 4 months after the Media Lab’s anniversary. This one did not set out to celebrate the amateur. Instead, it was designed to be a global spectacular, carefully mediated by professionals, and presented to the public as a tightly orchestrated “newsroom of the future” (Reid, 1996).

While the Media Lab urged the denizens of cyberspace to “send us your bits,” the idea behind 24 Hours in Cyberspace was to dispatch prize-winning photographers around the globe to capture the world in a day. These images would be transmitted back to the custom-built mission control headquarters in San Francisco, where stories would be packaged on-the-fly by a team of 80 seasoned writers, editors, and designers, and published as a visually stunning web magazine updated every 30 minutes around the clock on 8 February 1996. Aiming to show how the Internet was transforming people’s lives around the world, this project, much like MIT’s, offers a snapshot of the utopian ideologies surrounding visions of a digital, real-time, networked globe at the beginning of the dot-com boom. But here, the onus falls on media industries, skilled at the professional packaging of the “world out there” for an audience to consume. “Doing it well,” in other words, draws on mass media logic to frame the work of web production as the systematic coordination of creative talent and professional expertise (see Altheide & Snow, 1979; van Dijck & Poell, 2013).

Needless to say, when those at the Media Lab read press releases announcing Smolan’s new venture, tempers flared and a public argument ensued across the media sphere. One member of the Lab said, “They read like clones of what we had just done: a mission control, lots of editors, touting it as the largest Internet event to date. It’s the same story. And the total lack of acknowledgment really bothers us” (Rifkin, 1996). To which Smolan replied: “They wanted unedited bits. I wanted something crafted by professionals, that’s what I do. They’re scientists . . . They’re brilliant, but not publishing people” (Cavender, 1996). While the project themes were indeed the “same story”—both evoked the “world in a day” concept to create a “time capsule” commemorating the “digital renaissance”—the motivations for making the sites, the type of skills and expertise most valued, and the technical frameworks developed to create a “quality” online experience could not have been more different.

Significantly, these conflicting visions of what the web could be were unfolding at a crucial moment when public discourse about the Internet was intensifying around a shared sense that “something important” was going on (Streeper, 2011, p. 124). August of 1995, when the partnership between Smolan and MIT unraveled, is the very moment typically designated as the start of the dot-com boom. This was the month Netscape Communications, a 2-year old Internet start-up, held their initial public offering (IPO). It was a legendary debut that came to stand as a highly visible symbol of the Internet’s potential, mesmerizing investors and capturing the public imagination (Cassidy, 2003). In a matter of 1 year, the web had gone from a niche computer network of techies to an aspiring mass medium, creating “a seemingly voracious demand for people who can create and manage Web operations” (Lewis, 1995). These two projects, in important ways, represent the bids of different kinds of experts displaying contradictory styles of imagining the public performance of an Internet spectacular at a moment the meaning of the web was up for grabs. To examine how ideas about publics helped inform what “social” meant in these contexts, I consider the distinct ways each site addresses a public and how this address depends on two different ways of talking about real-time: as channeling social traffic, and as automated publishing. Ultimately, I suggest, both were necessary components to what became known as Web 2.0.

**Day in the Life of Cyberspace: Configuring a Social Platform**

If, as Warner (2002) suggests, publics come into being through an address to indefinite strangers, what modes of address do we find in 1010? First, and most obviously, there is the Media Lab’s call for participation sent to listservs around the world that October: “We would like *you* to be part of the first global portrait of human life in the digital age.” This personal direct address to an emphasized “*you*” speaks to the participatory nature of social media. (We could
compare this to YouTube’s invitation to “Broadcast Yourself.”) Yet, as Paddy Scannell (2000) argues, this conversational direct address is a style of talk developed by broadcasters as a way to speak to a mass audience not as anonymous multitudes, but personally, as individuals. He calls this a “for-anyone-as-someone” communicative structure, and it is fundamentally what makes broadcast social media. That is, in addressing “me” personally while I am simultaneously aware that countless others are also being addressed, broadcast talk offers the social glue that connects private individuals to the world at large: “For-anyone-as-someone structures in principle create the possibilities of, and in practice express, a public, shared, and sociable world-in-common between human beings” (Scannell, 2000, p. 12).

1010’s call to participation, therefore, is not far afield from a mass media address. But there is another address that positions users of the website, and it emerged from an explicit attempt to make the web feel more social by creating a sense of co-presence. “Wandering the web is usually a solitary experience—one has very little sense of the presence of others,” notes Donath (1996) in her documentation of the project (sec. 7.1.3). 1010 employed a number of strategies to counter this tendency. The site was organized around the idea of personal time “capsules,” automatically generated profile pages that serve as a hub for displaying site activity and communicating with other participants. It deployed a registration system whereby each user, upon logging in, is assigned a unique identifier that tracks their clickstream activity during that session. Most notable, however, is how capsules were automatically updated as a consequence of participating in the site. If a user took a mini-survey in the “Reveal” section or contributed a comment about the daily theme in “Expound,” these contributions would also appear on their personal capsule (see Figure 1). The site therefore operated according to a very different logic of participation than personal “home pages,” which were popular at the time. As Donath notes, while “ordinary home pages are designed once and then updated infrequently,” capsules are automatically updated through a user’s participation in the site (sec. 7.1.3). They therefore demonstrate a different temporality but also a new mode of address. Because capsules display the unique activity of individual users, and address users directly by name (e.g., “Time Capsule for Megan”), they involve a personal address to someone in particular. My capsule addresses me, personally by name, and is therefore not also directed to indefinite strangers, a prerequisite Warner argues is necessary for an address to be

Figure 1. Screenshots from top (left) and bottom (right) of a personal capsule (1995). Source: Judith Donath/Massachusetts Institute of Technology (MIT) Media Lab/Art Technology Group.
public. How then does 1010 imagine and address a public? How is this built into the site’s architecture?

Although every user is addressed individually by name, it is unlikely that each believed they were the only addressee. Instead, users understand that the site addresses indefinite strangers out there as unique too; each assigned her or his personal capsule. This communicative structure is crucial to the way 21st-century “social media” organize and address publics. Attending to this reconfiguration requires accounting for more than how social media enable participation and self-expression; it also necessarily introduces a temporal arrangement in which users become attuned to “listening in” (Lacey, 2013) for an algorithmic address, learning to read back the ways we are read by machines.

1010 combined this individual address with other features designed to help users “get a sense of the crowd” also online. Each page displayed a list of recent visitors and how long ago they were there (e.g., “2 people have visited this page in the last minute”). Users could therefore feel out other users through their temporal proximity, and could communicate with one another with direct messages (called web-o-grams), and indirectly by anonymously rating other users’ discussion contributions. Algorithms used these ratings to manage the visibility of user contributions so comments with repeated low ratings would slowly disappear. In two important ways then, these design decisions simultaneously disrupt and reinforce modern ways of conceptualizing publics. Because the address alternates between indefinite strangers (an imagined space of discourse) and definite strangers (a numeral view of actual users), it troubles the distinction between discourse and dialogue, publics and bounded audiences, upon which Warner’s (2002) framework depends. But it also introduces a new temporal arrangement: by time-stamping participation, this mode of address creates not just a sense of public space but also the feelings of common time. At times used interchangeably with “live” or condemned as perpetuating the immediacy of an “eternal now,” real-time in computing is often associated with the elimination of a perceptible delay between processing and experience (see Hu, 2013; Weltevrede, Helmond, & Gerlitz, 2014). But real-time is more perceptual, fabricated, and political than calculable. Weltevrede et al. (2014) suggests we think not of real-time but of “realtimeness,” as a way to consider how different platforms offer distinct forms of this temporality for specific users. In the case of 1010, realtimeness unfolds through the daily coordinated discussion around certain themes, but also by time-stamping interactivity so other users were aware of the co-presence of others. This is actually a crucial component for the Internet to constitute publics. Warner observed in 2002, “Once a Web site is up, it can be hard to tell how recently it was posted or revised, or how long it will continue to be posted” (p. 97). Time-stamping introduces a citational field and lays the groundwork for the web to operate as a “concatenation of texts in time” (Warner, 2002, p. 90).

To accomplish this technical functionality, 1010 relied on sophisticated back-end technologies developed by Art Technology Group (ATG), a local technology consultancy that partnered with MIT. Co-founded by a Media Lab alumnus and staffed with MIT graduates, ATG saw in 1010 a chance to test out a custom Internet application called Dynamo, which was being developed to meet the needs of ATG’s corporate clients who were demanding more sophisticated web services. A set of technologies for connecting back-end applications to the web in order to extend the web’s capabilities beyond standard hypertext pages, Dynamo could automatically generate custom web pages for thousands of users on-the-fly in response to user activity. The Media Lab’s documentation of the project describes this as a form of “virtual crowd control,” which “helped channel and improve the quality of input” (“1010 Revisited,” 1996). Algorithms operated behind-the-scenes to track and channel traffic, while user feedback in turn altered the content on display.

Dynamo created a personalized social web experience in 1995 that seems familiar to our contemporary social media lexicon: profile pages, direct messages, wall posts, mentions, comment rating, and user tracking. While obviously not the same type of experience we associate with Twitter or Facebook, 1010 can still be understood as employing some of the strategies and tactics of “social media logic,” which van Dijck and Poell (2013) identify through four interdependent elements characterizing today’s ecosystem of connective media: programmability, popularity, connectivity, and datafication. Social media logic works, they contend, by channeling social traffic in response to real-time interaction patterns, preferences and “like” scores, socio-economic imperatives, and measurable data. 1010 offers an example of an earlier moment when the mechanisms of this real-time logic were being worked out. Yet, this was not the production model that caught on in the mid-1990s. But as we will see, the technologies that made this possible did not disappear; they were reconfigured to solve different problems when this type of social web failed to take off in the 1990s.

24 Hours in Cyberspace: Global Real-Time Mass Publishing

The idea of capturing a global view of the world under demanding real-time circumstances, all in a single day, has long held appeal as a way for mass media to foreground their power to make the whole world instantly visible. In her analysis of Our World, a live 2-hr international “satellite spectacular” broadcast across 24 countries in 1967, Lisa Parks (2005) examines how satellites were used to construct a fantasy of global presence by exploiting liveness and articulating it to Western discourses of modernization. The program accomplished this, Parks argues, by incessantly “spotlighting the apparatus,” employing stylistic flourishes that call attention to television’s global mode of production and its technical infrastructure as a spectacle (p. 33). “Liveness” was
pre-scripted or “canned,” yet presented as a spontaneous “globe-encircling now” (p. 37). Nearly 30 years later, in an effort to represent web production as the natural domain of media professionals, we see remarkably similar strategies informing the production of 24 Hours in Cyberspace. It offered the mode of address of a live media event, one that promised the experience of watching history being made (Dayan & Katz, 1994). This involved hypervisualizing the behind-the-scenes infrastructure, and putting “liveness” on display as a function of real-time publishing.

On the big day, media outlets swarmed the specially constructed 6,000-square-foot command center in San Francisco, which reportedly resembled “a cross between a daily newspaper at deadline and Mission Control for a NASA space flight” (Cline & Walter, 1996). Every moment of this event involved making visible the behind-the-scenes work of producing the site and emphasizing how a team of experts managed to “pull off such a feat” in a single day.

TV crews were sent on location with photographers so television viewers could follow the whole production process: we witness the subjects being photographed, the resulting images arriving at Mission Control where they are sorted by the traffic team and passed on to the editors grouped into six “storypods,” while sound clips from interviews with photojournalists were edited in the audio room (Figure 2). In a half hour ABC Nightline (Koppel, Sawyer, & Muller, 1996) special, a few fleeting shots of the resulting website are pictured, but the coverage focuses almost exclusively on the process that made the system work.

This “backstage” material not only dominated news coverage, but was also prominently featured in the 24 Hours website, book, and CD-ROM. A series of PDF files were included in the “How It Was Done” section of the website, which took great care in illustrating the immense coordination between professionals, tools, and infrastructure required to visually capture and produce the world in a day. These media materials include a map of the Mission Control floor plan, a catalog of available story templates, and an elaborate series of diagrams visualizing the scope and coordination the project required (Figure 3). This method of inviting audiences behind-the-scenes is one way the project aimed to establish authority by separating media professionals from an audience of listeners and readers. Users were invited to “participate,” but these contributions were subject to approval by a panel of judges. A “parallel effort” of student work was separated from professional content into a “student underground” area.

In addition to spotlighting the apparatus, “liveness”—with its privileged connection to broadcast media—played a crucial role in demonstrating the future of publishing. Although the 24 Hours team called attention to its liveness through frequent comparisons to television and radio, the project was never really “live,” in the sense of transmitting images or sounds to audiences as they occur. Although updates were scheduled for every 30 min, deadlines were missed and technical troubles caused a delayed start. Press releases announcing 24 Hours pitch the event as “real-time photojournalism on a global scale,” but the newsroom of the future was never concerned with responding in real-time to events in the world as they unfolded. Stories were researched and rough-sketched well ahead of time and the newsroom of the future was never willing or prepared to veer from the script. Most prominently, as the 24 Hours event was taking place, President Clinton signed the Communications Decency Act into law, which caused a massive uproar across cyberspace. While some coverage of the protests was later included in the archived site, 24 Hours was criticized by groups like the Electronic Frontier Foundation for not responding to cyberspace’s biggest news of the day (Lemonick, 1996). If the
“real-time” of 24 Hours is figured neither as a way to respond to breaking news, nor as a “live” transmission feed from afar, what kind of realtimeness is produced here?

Unlike 1010, real-time in 24 Hours occurs not in response to user feedback on the “live web,” but is instead an artifact of the production process—a content management system that linked templates, a database, and a user-friendly graphical interface. This back-end system could automatically generate HTML web pages at the click of a button and it was this form of automation that inspired organizers to understand this event as “real-time photojournalism on a global scale.” The production system was developed by a 3-month-old software start-up called NetObjects, formed by developers from Rae Technologies (an Apple spin-off that created information navigation applications), and Clement Mok designs Inc., an information design firm. Mok (1996) explained, “In most computing projects, the content is shaped by technological constraints. On this project, however, it was the other way around—content was the force behind most of the decisions made about equipment, personnel, and the general dynamic of the project” (p. 172). In other words, the type of content driving all other decisions presupposed the public as a reading audience, receivers of packaged professional content. For media professionals to feel this domain was their own, the central role of HTML in web authoring had to be demoted. Those building the site needed to be able to plug content (images, headlines, captions, photos, stories, audio clips) into pre-built templates that automated the technical work of coding websites. “SitePublisher,” the prototype NetObjects designed for 24 Hours was described as “an automated Internet publishing system for ‘non-techies’” that provides “clean, professional magazine layout and high-quality graphics” (Mok, 1996, p. 160). That this high-quality, professional web magazine was produced in 24 hours by non-technical users with barely 3 hours training and no prior experience making web pages all served to demonstrate the future of the web was

Figure 3. Diagram depicting organizational flow of 24 Hours in Cyberspace (1996).
Source: Diagram by Nigel Holmes/Against All Odds Productions.
not about hand-coding HTML pages. It was instead dependent on the skills and talents of experienced writers, editors, and photographers: the content experts. Combined with other circulating web discourses that articulated “high quality” to visual styles associated with print aesthetics, this production model came to represent the codes of professionalism many new websites—both commercial and non-commercial—aspired toward (Ankerson, 2010).

The Social Life of Web Objects: A Market for Dynamo and Fusion

We could certainly end this story here. Both projects struggled with technical difficulties on the day of the event, and both, ultimately, were “successful.” But if we follow these technologies into their commercial afterlife, we can see how they both became attached to new cultural imaginaries as they were reconfigured to address new problems in different contexts. It is this work of reconfiguration that alerts us to the difficulties and political stakes involved in drawing boundaries.

ATG released Dynamo as a commercial software package in November 1995, a month after the Media Lab’s anniversary event. What made Dynamo particularly useful for web developers was its capacity for handling a library of applets called “Web Objects,” (later renamed Dynamo Gears) independent, customizable, and reusable mini-applications. The Web Objects designed for 1010, such as Session Tracking, Discussion Threads, Send Mail, Activity Monitor, People Watcher, and Live Links, could all be made available as a library of applets available for use in any website running Dynamo. Web Objects, in other words, are a literal material example of configuration as a type of assemblage. In the context of 1010, these objects were used to experiment with sociable interfaces that might make online participation feel more vibrant and meaningful (Donath, 1995). But for ATG’s corporate clients, these same technologies were promising for their potential as targeted advertising vehicles.

Session-tracking, used in 1010 to collect and manage user access information for the personal capsules, would also help webmasters gather clickstream data and serve ads that change in response to user activity. In 1996, ATG released Dynamo Ad Station and Retail Station, developer kits with applications for profiling users, rotating ads, and managing retail sales. By 1998, amidst escalating dot-com euphoria and investor interest in e-commerce start-ups, ATG had become a leading provider of “Relationship Commerce solutions,” offering a suite of e-commerce and relationship marketing applications “designed specifically to tackle the management of online relationships by applying personalization to each and every user experience” (Businesswire, 1998). This helped make ATG a market leader in e-commerce and an IPO followed in 1999, making its founders multi-millionaires. Two years later, ravished by the dot-com crash, shares plummeted and both founders ultimately left the company. But ATG weathered the storm, staying focused on their commitment to personalization as a core business principle. A decade after the crash, ATG dominated the market for enterprise e-commerce platforms and was acquired for a billion dollars by Oracle in 2011.

Meanwhile, after a stellar performance on 8 February 1996, NetObjects SitePublisher was revamped into a commercial web authoring application called NetObjects Fusion, which was released to the market in the summer of 1996. Fusion aimed to make “web publishing as easy as desktop publishing,” and explicitly hailed new audiences as desired web creators: “non-professionals” and “novices” looking for an easy way to quickly publish online, and the “graphically-challenged,” who wanted a no-fuss method for producing “professional quality” websites (Mok, n.d.). Introduced to the commercial market, NetObjects Fusion re-imagined web authorship on several levels. As a WYSIWYG (“what you see is what you get”) tool pitched as desktop publishing for the web, it opened the web publishing market to a broader range of creators and therefore diluted some of the boundaries distinguishing media professionals, technical experts, and amateurs: all were framed as potential users of NetObjects Fusion. So on one hand, the case of NetObjects shows how specific interpretations of “quality” production were built into the very tools and production logics that were in turn used to build the web. But once released into the marketplace, these discourses of professional quality production were harnessed in different ways, particularly as a tool for bringing the power of publishing to the people. “The problem,” observed one reviewer, “is that too many people, groups and organizations who have relevant information to put on-line are held hostage by the few who know how to do it . . . The software industry is finally delivering programs that will put meaningful Web publishing tools in our hands” (Copilevitz, 1996). As a product that made web production more accessible to a larger audience, the application was articulated to an emerging personal publishing revolution, one that promised to democratize the web through access to powerful, affordable, web tools. At last, “anyone who wants to talk with the world will have the means to do so” (Copilevitz, 1996).

In this way, an application built to service the needs of non-technical media professionals who envisioned clear distinctions between professional quality and amateur content, and who regarded the future of online publishing as a way for media institutions to quickly produce content for public consumption, was reconfigured as part of a new assemblage joining content management systems, ease of use, frequent site updates, and template models with a cultural imaginary that embraced the power of self-publishing. It is within this reconfigured context that the rise of blogging and the participatory discourses embracing a “read/write,” social web known as “Web 2.0” would find fertile ground.1
Conclusion

By offering these two overlapping case studies, each about a single day in the early life of the web, and examining how technological and cultural foundations were reconfigured in the afterlife of these projects, this article aims to show why it is useful to grapple with the “messy realities” that undercut clean divisions between Web 1.0 and Web 2.0, between “read-only” and read/write “social media.” Over time, histories develop master narratives that may or may not coincide with how things actually unfolded. As media scholar Gill Branston observes, the most powerful versions of history are continually reconfigured until they become “sedimented down, pressed into new narratives and accounts . . . [involving] taken-for-granted assumptions which in turn shape the relationship of . . . legislators, trainees, practitioners and historians in an imaginary past and an even more speculative future” (Branston, 1998, p. 51).

Using Suchman’s trope of configuration, a device for studying how material artifacts and cultural imaginaries are joined together, this account tries to relocate the 1.0/2.0 boundary put in place by O’Reilly in 2004. Instead, I approach social media and the transformation of publics as a story about a shifting mode of address, which is intimately connected to the production of “real-time” temporalities. In 1010, real-time involves producing the feeling of co-presence, which the Dynamo platform helps accomplish by timestamping participation in order to track user activity and feed this interaction back into the system where it would then show up in the interface as a personalized mode of address. In 24 Hours, the production of real-time did not involve timestamping user activity. Instead, real-time was understood as automated user-friendly publishing that enabled non-technical users to generate HTML pages “on-the-fly,” producing web pages not through code but in a user-friendly graphical template system premised on the separation of form and content. Here, the HTML code was produced in “real-time,” not the experience of using the web. This producerly mode of real-time, I propose, helps prepare the stage for a self-publishing revolution, a reconfiguration of tools and cultural imaginaries that prefigures the rise of blogging.

Rather than understanding these two case studies as clear early examples of the “read-only” web and “social web,” I follow these projects into their afterlife to demonstrate how users listen for the algorithmic address and by recognizing that social media involves the transformation of time as well as space, we might be better equipped to challenge methodological biases, strategically relocate the boundaries around objects of study, and discover new ways of making sense of social media’s histories and future potentials.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Note

1. While there is not space to fully examine these connections here, see Ammann (2014).

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