Chapter 9
How Amsterdam Invented the Internet: European Networks of Significance, 1980–1995

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9.1 Nets and the City[1]

In his discussions on the use of the Internet in civil society, the internationally renowned sociologist Manuel Castells singled out Amsterdam as the key site of historical innovation in Europe. Looking at developments there in the early 1990s, he identified the city's digital network as "a new form of public sphere combining local institutions, grassroots organizations, and computer networks in the development of cultural expression and civic participation."[2] Many have traced the start of the new public sphere to January 15, 1994, when access to the Internet became available to the general public in the Netherlands via a new dial-in service and virtual access area called *De Digitale Stad* (Digital City, called DDS). Access to Digital City was open to all: anyone with a modem simply needed to dial an Amsterdam telephone number or use one of the public terminals installed in the city. Subsequently, the

[1] This paper describes how the digital culture evolved in Amsterdam. Although the authors appreciate that the Amsterdam's digital culture emerged in a global context, they focus on understanding the global context from the Amsterdam perspective. This chapter is the result of an extended dialogue between Nevejan, a social scientist who was one actor in many of the events described here, and Badenoch, a media historian, in consultation with print archives and other witnesses. The authors are grateful to Geert Lovink, David Garcia, Patrice Riemens, Marleen Stikker, Tjebbe van Tijen, and Frances Brazier for their comments and Ruth Oldenziel and Gerard Alberts for their valuable editorial work. See also Nevejan Caroline. 2007. *Presence and the design of trust.* PhD Thesis, University of Amsterdam, in which some of these events are described from a social science perspective.

[2] Manuel Castells. 2001. *The Internet galaxy: Reflections on the Internet, business, and society*, 146. Oxford: Oxford University Press.

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adoption of Internet services grew rapidly from about 300 private citizens with Internet access before the opening to 4,000 daily users a year later, rising to 50,000 in 1997. The short user manual was a nonfiction bestseller at bookstores in the city.[3] Once in, users found themselves in a text-based environment—a graphic interface would come a few months later—built around the metaphor of the city. Users could visit the "post office" (send emails), exchange gossip in cafés, visit a number of themed city "squares," and debate public issues.[4] Other parts of Digital City had their referents in the more material aspects of Amsterdam. One could visit the library and consult its catalogue, visit the town hall for municipal information, and even read pornographic stories in the sex shops. A number of online experiments and events also took place, not least in connection with the upcoming municipal elections. The "rooted" location of Digital City as portal to the global world, with reference to a specific lived-in city, was the key to its participatory appeal. For the first time in the Netherlands, a computer environment came into existence where Dutch was spoken and where the agenda was set by Dutch social morals and codes. Thus far, the Internet had been a specialized environment dominated by the United States, dominated by the English language, American industry, and international nongovernmental organizations (NGOs)—a focus also echoed in the historical literature.[5] With the opening of Amsterdam Digital City, part of the Internet turned Dutch as it was publicly connected to events in Dutch society and in a Dutch style.[6] The locally organized, broadly participatory design and use attracted a wide range of international attention. Amsterdam Digital City was held up as an example of how the Internet could potentially transform social life. Moreover, Amsterdam had long been a central node in the technical infrastructure of the Internet.

As Don Slater has cautioned, based on his ethnographic exploration of Internet use in Trinidad, we must not treat the Internet and World Wide Web as global monoliths, used the same way the world over, but as phenomena locally appropriated for very different purposes.[7] We take his point one step further to show how technologies

[3] Ibid., 147; Joost Flint. 2004. *DDS – 10 jaar anders*. http://www.dds.nl/downloads/achtergrondartikel.pdf. Accessed 16 July 2011.

[4] For a demonstration of Amsterdam Digital City (DDS) Version 3.0 from the late 1990s, see http://www.dds.nl/downloads/DDS-3.0-presentatie.swf; a new online archive of Digital City (in Dutch) is at http://re-dds.nl/. Accessed 21 Mar 2013.

[5] In most histories of computing, "the Internet" refers to the work done by the US-based military, research, and large-scale business actors. Similarly, the "heroes" of Internet history are described as the lone technological innovators. See Janet Abbate. 1999. *Inventing the Internet*. Cambridge, MA: MIT Press; Paul E. Ceruzzi. 2003 [1998]. *A history of modern computing*. Cambridge, MA/London: MIT Press; Stephen Segaller. 1998. *Nerds 2.0.1: A brief history of the Internet*. New York: TV Books; Tim Berners-Lee. 2000. *Weaving the Web: The original design and ultimate destiny of the World Wide Web*. New York: HarperBusiness; and Stephen Levy. 1984. *Hackers: Heroes of the computer revolution*. Garden City, NY: Anchor Press/Doubleday.

[6] Caroline Nevejan. 1995. Holiday in the Digital City of Amsterdam. Lecture to the Dutch Ministry of Economic Affairs, February 11, unpublished manuscript in Nevejan Archives.

[7] Don Slater. 2003. Modernity under construction: Building the Internet in Trinidad. In *Modernity and technology*, ed. Philip Brey, Thomas J. Misa, and Andrew Feenberg, 139–160. Cambridge, MA: MIT Press.

are appropriated to individual end users and how local cultures have a profound effect on the design of networks and interfaces, including their social embedding. In the United States, Senator and later Vice-President Al Gore of Tennessee played a key role in facilitating broad public access to computer networks for educational purposes. When touting those achievements as a presidential candidate, Gore was accused mockingly by his political adversaries of claiming to have "invented the Internet."[8] While Al Gore never actually made this claim, we argue here that such public displays of envisioning and advocating a new technology play a significant role in emphasizing the value of creating new technologies. In taking this line of argument, we see a stark contrast between the way the Internet was invented in Europe and in the United States. It was not political figures like Al Gore who played the key facilitating roles in Amsterdam but actors from a range of independent media labs and cultural centers who worked to enable this new digital public culture.

We trace this history by showing how various actors came to converge around digital developments over the course of the late 1980s. Firstly, we trace two parallel developments: the growth of Amsterdam as a central node and gateway of the Internet in Europe on the one hand and the rise of independent media and cultural centers in the 1980s on the other. Members of these centers would become important catalysts in shaping digital developments in the city.[9] Secondly, we show how these sectors came together in the late 1980s with the involvement of a third set of actors, the hacking community, to shape what would become Digital City and Amsterdam's booming digital culture.[10]

9.2 The Internet Comes to the Netherlands

Already a decade before the launch of Digital City, Amsterdam was a central node and gateway for the Internet in Europe. Since the 1950s, Dutch nuclear physicists had collaborated internationally with scientists from the United States and the USSR even at the height of the Cold War. For physicists, the Internet's predecessor

[8] See Seth Finkelstein's "Al Gore Invented the Internet Archive," at http://sethf.com/gore/. On Al Gore's role in the US digital development, see Janet Abbate. 2010. Privatizing the Internet: Competing visions and chaotic events, 1987–1995. *IEEE Annals of the History of Computing* 31 (1): 10–22, and for praise of his role in promoting the Internet by key architects, see http://www.politechbot.com/p-01394.html. Last accessed 15 July 2011.

[9] This chapter draws on Nevejan's archive, deposited at the International Institute for Social History (*Internationale Instituut voor Sociale Geschiedenis*) Amsterdam, hereafter Nevejan Archive). As these materials have not been catalogued at the time of writing, they will be referred to according to the way they are currently filed. Every attempt has been made to describe them such that they can be relocated as necessary.

[10] The events described here involved a large number of artists, theorists, and activists, all of whom were important actors in shaping Amsterdam's independent media cultures. For future reference, we've mentioned them in the footnotes.

was vital for exchanging large amounts of data in their international collaborations at CERN in Geneva, Switzerland.[11] The Dutch National Institute for Nuclear Physics (NIKHEF) and national research center for Mathematics and Computer Science (CWI) were next-door neighbors. In the early 1980s, Amsterdam's computer scientists jumped on the bandwagon by literally drilling a hole through the wall to connect a cable to the physicists' adjacent building. The connecting cable not only marked the start of the European backbone of the Internet; the connection symbolized CWI's role in pioneering a number of Internet developments.

In the early 1980s, it was not just academic researchers who were interested in the new possibilities for communication and collaboration that the emerging digital communication infrastructure offered. Smaller and larger businesses and NGOs also expressed interest in these services. Similar to University of California, Berkeley, CWI offered accounts on their server. Using modems in which one would put the telephone receiver in a rubber cradle, people would "phone in" through telephone lines on the server. Many individuals began to participate in Usenet newsgroups, which started up in 1980. One account could facilitate a group of people to get otherwise inaccessible news and information. In 1987, civil networks like PeaceNet and GreenNet designed bulletin board services to connect grassroots organizations for the first time.[12] Unlike today, when all involved would participate on the net, these networks consisted of connections between nodes, around which groups of people would organize themselves. Political organizations and solidarity movements like the antinuclear waste movement, unions, and women's groups sought to connect through the network in order to get around censorship regimes and share information directly with other organizations. Various grassroots movements in Amsterdam were linked into such networks in the 1980s.

The local interest in CWI's connection was paralleled by its importance internationally. The indication ".NL" became the first root domain outside the United States, and on November 17, 1988, CWI's Piet Beertema received Europe's first email, sent via the first nonmilitary Internet connection between Europe and the United States. In 1990, Dutch universities started to connect electronically and established SURF foundation, which has since become a key European academic player.[13] When CWI's Internet service became increasingly popular over the course of the 1980s, the organization decided to focus exclusively on research and in early 1989 allocated its services to a separate foundation, Stichting NLnet, the first independent provider in the Netherlands.[14] It was the first Internet backbone in the

[11] See Abbate, *Inventing*. Professor Kees Braams, director of the Nuclear Physics Institute in Rijnhuizen, was working on a regular basis with Soviet colleagues, using the ARPAnet.

[12] Bulletin board services for grassroots organizations, administered by the Institute for Global Communication: http://www.igc.org/html/aboutigc.html. Last accessed 16 July 2011.

[13] Annelies Vlap. 2011. Internet van en voor Nederland. Het verhaal van 25 jaar .nl, in *25 jaar .nl.* In Bex*communicatie. *Anniversary Publication SIDN*, 30–40. Arnhem: Stichting Internet Domeinregistratie Nederland.

[14] Founders of Stichting NLnet were Ted Lindgren, Marten van Gelderen, Piet Beertema, Frances Brazier, Wytze van der Raay, and Jos Alsters. For a brief overview of the organization's history, see: http://nlnet.nl/foundation/history/199804-usenix.html. Last accessed July 2011.

Netherlands, offering local dial-in and ISDN infrastructure covering the entire country. It designed and implemented a low-cost connectivity structure without anticipating individual service, focusing instead on institutional provision. Major NLnet customers were corporate clients like Philips but also independents such as SURFnet, InterDoc's Antenna, Hack-Tic Network, and later the Internet service provider XS4ALL, who all, as we will see, played an important role in our story.

While institutional clients caught the attention of Amsterdam's increasingly important network connection, public interest took another turn. Amateur computing was booming. The Dutch Hobby Computer Club, which was started in 1977, exploded to a membership of 46,000 a decade later, making the organization one of the largest in Europe.[15] Independent of the national telecom agencies offering coax-cable infrastructures, individual users like the computer hobbyists developed their own practices and formats. Amsterdam City Council was also in a position to play an important role in supporting the emerging digital developments. As owner of the local cable infrastructure until 1995, the Council facilitated a rich local television and radio scene with a variety of broadcasters catering to a city of only 700,000 inhabitants.[16] Public events brought these disparate communities together for the first time.

9.3 Reconstructing the City: Squatting and Free Cultural Spaces

The social actors who would go on to shape Amsterdam's Internet infrastructural node in Europe and make it publicly available came from the city's counterculture and squatter movement. Creating new media spaces was part and parcel of the movement—and the struggles—to create new forms of urban space. Many neighborhoods that had been home to the city's Jewish community, including the half-open ghetto formed in 1941, became the center of these struggles. Empty from the deportation of the city's Jewish residents, many buildings had all of the wood in them plundered for firewood in the difficult hunger winter of 1944/1945 and were nevertheless nearly fully occupied after 1945, though the question of who actually owned them remained unsettled. A law from 1947 passed to deal with the uncertain ownership of the buildings gave the occupants of a house right to remain there unless someone else could prove ownership. Such was the state of many old neighborhoods, like the old Jewish working-class Nieuwmarkt neighborhood, east of

[15] Frank Veraart. 2008c. *Vormgevers van Persoonlijk Computergebruik: De ontwikkeling van computers voor kleingebruikers in Nederland 1970–1990*. PhD thesis, TU Eindhoven.

[16] James Stappers, Frank Olderaan, and Pieter de Wit. 1991. The Netherlands: Emergence of a new medium. In *The people's voice: Local radio and television in Europe*, ed. Nick Jankowski, Ole Prehn, and James Stappers, 90–103. London: John Libbey; Nick Jankowski. 1988. *Community television in Amsterdam access to participation in and use of the "Lokale Omroep Bijlmermeer"*. Amsterdam: Amsterdam University Press.

Dam Square and the Red Light District, and a short walk from Amsterdam University. The port had long been home to immigrants (and remains so) as well as being the center of the city's once-thriving Jewish community. In the 1960s, it was one of a number of neighborhoods that came into focus for city planners and social activists alike. In technocratic plans for city (re)construction (some of which dated from before the war), these parts would be razed and rebuilt to accommodate more car and metro traffic through the city, as well as more non-mixed commercial zoning, and wide, open boulevards. For social activists, by contrast, the old building, in need of reconstruction and repair, represented a chance to build new forms of urban community. Old houses that had been condemned were squatted, and a new inner city communal life started to emerge in which new ways of living together with larger groups of people, including schools, shops, businesses, and workshops, were invented. Starting in 1964, squatting as it is currently understood, as both practical and utopian social action, began to gain increasing attention. The anarchist group Provo, which became famous for its "white plans" (including, most famously, free white bicycles for use in a car-free inner city), embraced the practice and announced a "white housing plan" in 1966, in which empty houses would have their doors painted white to announce they were available for living in.[17] Typically, for social-democratic Amsterdam, the neighborhood newspaper *Geïllustreerd Bethaniënnieuws*, among the first publications to advocate and advertise squatting, briefly received a (small) subsidy from the City Council.[18] From the late 1960s, activists had occupied and renovated the dilapidated, often historic buildings, resulting in violent confrontations with the authorities on several occasions. The action of squatting became known as *kraken* in Dutch, street slang for breaking in, after the start of the *Woningburo de Kraker* [housing agency for squatters], which helped to organize the movement in Amsterdam starting in 1969.[19] The Nieuwmarkt neighborhood became an important center for the 1960s and 1970s movement, whose leading figures came to play such an important role in shaping hacking culture and independent media production later on in the 1980s.

One such leading figure was Tjebbe van Tijen, a visual artist and cultural coordinator in Amsterdam, who both embodied and documented the squatter movement within the culture of the city. A founding member of the *Woningburo de Kraker*, he later also became a curator at the Amsterdam University Library where he established a collection on modern social movements. In an article published in 1992, he recalled an event called "Free Cultural Spaces" at a soon-to-be razed property in the

[17] Tjebbe van Tijen. 1966. 1966: Provo's Witte Huizenplan/White House Plan of Provo movement. *Witplan*. http://witplan.wordpress.com/1966/04/25/provos-witte-huizenplanwhite-house-plan-of-provo-movement/. Accessed 31 Mar 2013.

[18] Eric Duivenvoorden. 2000. *Een voet tussen de deur. Geschiedenis van de kraakbeweging 1964–1999*. Amsterdam: De Arbeiderspers.

[19] Tjebbe van Tijen notes that the use of the word *kraken* stems from a decision taken in naming the Woningburo de Kraker, in a meeting he attended that took place in the building of Hans't Mannetje, publisher of the *Geïllustreerd Bethaniennieuws*. Van Tijen, email communication with the authors, April 1, 2013. See also Duivenvoorden, *Een voet,* ch. 1.

Nieuwmarkt neighborhood in 1984.[20] Responding to the changing climate, the event sought to document and take stock of the movements in Amsterdam and abroad. In particular, the event highlighted the squatter movement's role in creating both places to live and "free cultural spaces," defined by their ability to create new possibilities for cultural expression and to form new communities. A manifesto poster produced for May 16, 1984, highlighted the importance of Amsterdam as a center: "In Amsterdam there are now around a hundred, in the rest of the Netherlands, many dozens." Van Tijen listed a wide range of spaces in the city such as music venues, theaters, galleries, and Paradiso, an old church occupied peacefully in the late 1960s that was transformed into one of the country's most important and internationally renowned pop venues.[21] He also mentioned virtual spaces in the "ether" in the form of independent radio stations.

Van Tijen stressed it was not always a matter of creating something permanent, but, especially and explicitly building on the situationist movement, the creation of new "situations" that demonstrate (now we would say perform) new forms of behavior.[22] In his words,

> The short and intense existence of a cultural 'free space' gives others the idea to follow the example in one form or another. Such brief existence of cultural 'free spaces' nevertheless leaves behind the image of a radiant young idea without any sign of less decay toward the loathed ruling cultural values, although it has proved unviable in the long run.

At the same time, and this would prove vital for the movement, "the creation of free cultural spaces was not always a simple choice between 'clean' uncompromising, radical action or execrable co-operation of traitors with the ruling order."[23] Indeed in many cases, including Paradiso, agreements regarding the use of empty buildings had been reached very quickly.

Towards the mid-1980s, when conservative parties came to power in many countries, articulating an ideology of law and order, the squatter movement changed both in Amsterdam and in other cities such as Berlin. When the police began to remove squatters forcibly from their houses, the new law-and-order politics polarized the political climate. In a political compromise, large quantities of squats were legalized, while other parts of the movement were criminalized. The compromise legitimized the squatters' claim that it was immoral for speculating house owners to leave spaces empty despite the housing shortages, while it acknowledged owners' property rights. A new law passed in 1981 required house owners to give up buildings for use if these were empty. The effect of the law on existing squatters, and the

[20] Tjebbe van Tijen. 1992. Vrije culturele ruimtes. In *Gebroken wit: politiek van de kleine verhalen*, ed. Mascarpone, Irene Janze, et al. Amsterdam: Ravijn. [Available online as Tjebbe van Tijen. 2004. Vrije Culturele Ruimtes. http://imaginarymuseum.org/VKULT. Last accessed 16 July 2011].

[21] Its status as music venue in Europe is on a par with that of the Warfield Theater in San Francisco, which was founded slightly earlier.

[22] Guy Debord. 1977. *Society of the spectacle*. Detroit: Black & Red. On the Situationist movement, see Greil Marcus. 2001 [1989]. *Lipstick traces: A secret history of the twentieth century*. London: Faber & Faber.

[23] Van Tijen, *Vrije Culturele Ruimtes*.

movement, was negligible, although it did allow house owners to create a new business in letting properties cheaply, especially to students, to avoid squatting without creating any legal rights for these renters so they can be forced to leave at any time.[24] Although the character of the squatter movement changed, the culture evolving in the many squats with their endless empty spaces, once the breeding ground for a vibrant youth culture, did not disappear. Many prominent members of the squatter movement began to reorganize themselves around cultural and media centers in the ensuing years.[25]

Such new cultural centers became centers for experiment. In the 1960s, artists discovered new media technologies as their primary medium of expression. Because making digital music and visual images were prohibitively expensive and required special production processes, individual artists had to organize themselves collectively around "production houses." In the 1960s, young modern composers created the musical laboratory STEIM, which pioneered and inspired internationally—and continues to inspire—many young composers and musicians seeking to engage in technical innovations and new musical ideas.[26] A decade later, artists established the foundations for visual electronic arts like Montevideo and Time Based Arts. One artist, David Garcia, would later become a key player in designing networking events for the Next 5 Minutes conference.[27] Music venues like Paradiso acquired capital-intensive PA systems beyond the means of music bands and made them available to young performers. The media centers collectively bought tools and technologies that were unaffordable for individuals—thus participating in a long tradition of communal (media) consumption, such as workers' radio clubs in the 1920s.

Such venues facilitated a culture of independent media production, including an active print, radio, and poster scene in which many of Amsterdam's digital culture pioneers participated.[28] The squatter movement's weekly magazine *Bluf!* was edited by (among others) Caroline Nevejan, Geert Lovink, and Peter van der Pouw Kraan, who played key roles in setting up later digital network events. A number of local and "pirate" radio stations operated from within the squatters' scene in the city center.[29] Marleen Stikker, who would go on to become the first "mayor" of Digital

[24] A.M. Kloosterman, H.J. Rossel, and J.P. van Stempvoort. 2008. *Hoofdlijnen in het huurrecht: met vragen en antwoorden*. Deventer: Kluwer.

[25] The Foundation for the Advancement of Illegal Knowledge (Dutch: Bilwet) started by Geert Lovink also stressed the connection between the squatter movement and its intricate and often ambivalent position with regard to "the media." See Adilkno [The Foundation for the Advancement of Illegal Knowledge]. 1994. *Cracking the Movement: Squatting Beyond the Media*. Trans. Laura Martz. New York: Autonomedia. http://thing.desk.nl/bilwet/Cracking/general.html. Last accessed 27 Sept 2011. See especially chapter 8.

[26] http://www.steim.nl

[27] http://www.montevideo.nl. Last accessed 16 July 2011. Time Based Arts and Montevideo merged in the early 1990s.

[28] For a large poster collection of the Nieuwmarkt neighborhood, see the International Institute for Social History in Amsterdam's website: http://zoeken.iisg.nl/search/search?action=transform&col=marc_images&lang=nl&xsl=marc_images-detail.xsl&docid=11014181_MARC

[29] Geert Lovink. 1992. The theory of mixing: An inventory of free radio techniques in Amsterdam. *Mediamatic Magazine* 6(4). http://www.mediamatic.net/page/5750/en?lang=en. Accessed 21

City, participated in two such radio stations and established the theater magazine *Alligator*, using available desktop publishing software, as well as *Live Magazine* that used new media to experiment with novel forms of political debate.[30] She further organized the Wetware conference with Geert Lovink in 1991, designed to explore the role of the human as body in the age of "virtual reality."[31] The *Zomerfestijn* (summer festivals) which Stikker organized in 1990 and 1991 included artists who were exploring technological frontiers such as Test Department, Survival Research Laboratories, and *Einstürzende Neubauten*.

From the start, the independent media communities were cosmopolitan and international, connected with networks beyond Amsterdam including Eastern Europe, where a vibrant, independent underground culture was flourishing. In 1987, the Amsterdam squatters' bookshop Sjakoo launched *Europe Against the Current,* offering venues to show alternative, independent, and radical views to confront what they saw as "mainstream" Europe where uniformity ruled.[32] Inspired by the 1985 "Alternative Cultural Forum" in Budapest and media fairs in London and Frankfurt, the organizers accumulated over 4,000 addresses, mobilizing an international network of alternative bookshops, publishers, and collectors by combing through catalogues, reviews, folders, and specialized guides. They supplied the addresses for the event's invitations but also became a permanent resource for further contacts. The catalogue listed 1,000 addresses. The *Europe Against the Current* event in September 1989 attracted 350 groups from 21 countries. At the event, Samizdat authors and publishers from Eastern Europe met with so-called pirate printers and often left-wing radicals from the West. In a retrospective published in 1990, Tjebbe van Tijen noted that

> [t]he multiformity, the multiplicity of opinions sought by the organizers was achieved but not all the participants and visitors were happy with it. The culturally-oriented found the event too political, the politicals blamed its far too cultural character. The participants from Eastern Europe, mostly for the first time in the West, were often surprised to see the Western European radical left groups present. Their passionate stand was exactly what they sought to free themselves of or what they tried at least to flee.[33]

Budding computer communication began to play an increasingly important role in connecting many local, independent media with networks beyond Amsterdam. Through PeaceNet and GreenNet, which, for example, reported the April 26, 1986, Chernobyl Nuclear plant disaster two whole days before the news appeared in

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May 2011; Geert Lovink. 1995. *'Listen or Die': A history of the punk hard core pirate station 'Radio Death', Amsterdam 1985–1987*. Bilwet. http://thing.desk.nl/bilwet/TXT/DOOD.ENG.txt. Last accessed 27 Sept 2011.

[30] Interview with Stikker, September 26, 2011.

[31] See Adilkno, Foundation for the Advancement of Illegal Knowledge, "Hardware, Software, Wetware," posted June 17, 1996, by Geert Lovink on nettime: http://www.nettime.org/Lists-Archives/nettime-l-9606/msg00026.html; Geert Lovink, Rik Delhaas, and Laura Martz (eds.). 1991. *Wetware*. Amsterdam: De Balie.

[32] Tjebbe van Tijen. 1990. Europa tegen de stroom. *De Gids* 153(6): 466–471. [English translation available online Going against the grain, Europe against the current, http://www.imaginarymuseum.org/ETS/ETSeng.html. Accessed 30 Jan 2014]

[33] Ibid.

regular newspapers, the squatters' magazine *Bluf!* effectively scooped major newspapers. It featured news reports that were unavailable such as the revolution in Nicaragua and the anti-apartheid struggle in South Africa. *Bluf!* editor Geert Lovink left the magazine in 1983 and spent more and more time in West Berlin, where he built a network of squatters and media theorists. Like in Amsterdam, the squatter movement in Berlin maintained strong ties with the established intellectual and left political scenes but was more politically passionate and intense.[34] Building on contacts made at the Amsterdam *Europe Against the Current* event, Lovink established connections with like-minded people in Eastern Europe from his Berlin base, particularly after the wall came down, when he was able to travel throughout Eastern Europe. His contacts enabled Amsterdam's cultural centers to invite Central and Eastern Europeans to their conferences and to establish long-term relationships with some.

The Amsterdam cultural and media centers also collaborated with centers being set up at the same time elsewhere in the Netherlands. In the southern city of Den Bosch, V2, the center of Unstable Media, explored electronic arts in a squat in 1981. In the northern city of Groningen, long dominated by socialist politics, the Mediamatic Foundation began in 1986, first with *Mediamatic* magazine, before transforming around 1990 into a creative multimedia lab, organizing underground shows and performances as well as doing commercial consultancy.[35] In 1986, activist Michael Polman started up the Antenna network in the Catholic capital Nijmegen, hotbed of the emerging liberation theology movement, which connected grassroots organizations from all over the world on a daily basis. Through regular meetings, the organizations exchanged vital information and collectively decided how to mobilize politics for issues they shared.[36] Despite operating in the periphery of Amsterdam's evolving networks, Antenna's worldwide connections had a significant impact on Dutch digital culture. It opened up its worldwide network at various conferences, thus providing the counter movement with a global reach. While these groups were independently involved in a number of networks worldwide, they did not collaborate until a new network event, the Galactic Hacker Party (GHP), brought them together in 1989 to focus on digital issues.

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[34] Freia Anders. 2010. Wohnraum, Freiraum, Widerstand. Die Formierung der Autonomen in den Konflikten um Hausbesetzungen Anfang der achtziger Jahre. In *Das alternative Milieu. Antibürgerlicher Lebensstil und linke Politik in der Bundesrepublik Deutschland und Europa 1968–1983*, ed. Sven Reichard and Detlef Siegfried, 473–498. Göttingen: Wallstein Verlag. See also the newly started online project: http://de.wikipedia.org/wiki/Wikipedia:WikiProjekt_Autonome_und_Hausbesetzer-Bewegung#Medien

[35] V2 was founded by Alex Adriaansens and Joke Brouwer; Mediamatic was an initiative of Willem Velthoven and Jans Possel.

[36] Antenna, founded to support NGOs, local government, and educational institutions by introducing and facilitating ICT, became the ICT partner for around 500 organizations worldwide. Since 1993, Antenna has supported almost all development, emancipation, and environment organizations in the Netherlands. An archive of the Association for Progressive Communication Newsgroups is online at Occasio Digital Social History Archive: http://socialhistory.org/en/collections/occasio. See also the introduction to the archive at http://socialhistory.org/sites/default/files/docs/archiving-electronic_messages.pdf. Both last accessed 1 Apr 2013.

9.4 Network Events in a Rapidly Changing World: Computer Squatting

As the squatter movement increasingly channeled its energy into media and cultural centers in the late 1980s, a new form of independent media engagement came to the fore: computer hacking. Much hacking culture had arisen as a countercultural movement, not only in the United States, aimed at what was seen as an increasingly technocratic society symbolized by computers. By understanding rather than fearing the tools of computers, hackers could subvert the process by appropriating them for their own goals.[37] In Dutch, many words to describe hacking came from English usage; the words "hacking" and "phone phreaking" filled the pages of the Dutch hacker zine *Hack-Tic*. Alongside these, however, came a Dutch translation: *computerkraken,* best translated as "computer squatting." The term had a similarly energizing effect on the way the practice was considered by proponents and skeptics alike.

In the summer of 1988, after the German Chaos Computer Club surprised the world with a spectacular hacking act, Nevejan, then programmer of Amsterdam's music temple Paradiso, sought to demonstrate the great potential of the Internet on its stage. With the help of *Bluf!* colleague Pouw Kraan and computer science professor I.S. Herschberg of the Delft University of Technology, who collaborated with 20-year-old hacker Rop Gonggrijp, she contacted Chaos Computer Club in the German social-democratic city of Hamburg.[38] Founded in 1981 by Wau Holland and others in the offices of the leftist newspaper *Die Tageszeitung*, the Chaos Computer Club hacked Deutsche Bank in the summer of 1988, wiring a hundred thousand German Marks into their own account within one night. At the press conference the next morning, they publicly wired the money back, stating that their act showed Deutsche Bank could not be trusted.[39] The breathtaking stunt inspired Paradiso to organize the Chaos Info Show on November 13, 1988.[40] Steffen Wernery, Wau Holland, and Bernd Fix presented Chaos Computer Club's work and ideas on Paradiso's stage. Among the audience were Dutch journalists, Hobby Computer Club members, and individuals interested in the emerging phenomenon of digital technology and hacking. The drama was not lost on the audience as fundamental issues were played out on stage. While publicly maintaining a "Robin Hood" image, Chaos Computer Club asked fundamental questions about democracy, privacy, and security. Wernery had just been released after serving 2 months in a French prison when Dutch electronic multinational Philips had sued him for hacking their work.

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[37] Veraart, *Vormgevers*, 62.

[38] Gonggrijp, an established and prominent hacker at that time, has remained a public figure in the Netherlands. He initiated successful protests against the use of non-privacy-protected voting computers in the Netherlands; more recently, he made headlines as the "coproducer" of the video *Collateral Murder* released by Wikileaks in April 2010. See his website http://rop.gonggri.jp/

[39] See Kai Denker. 2014. Heroes yet criminals of the German computer revolution. In *Hacking Europe. From computer cultures to demoscenes*, ed. Gerard Alberts and Ruth Oldenziel, 167–188. New York: Springer.

[40] Program and production notes Nevejan Archive, Folder "Chaos Info Show."

From the beginning, the political debate focused on how to engage young hackers with their responsibility as "tech-savvy" citizens, who could use the new technology either to create or to destroy. All Chaos Computer Club's hacks and publicity in the late 1980s sought to challenge social democracy and promote grassroots democracy. As Kai Denker shows in his contribution, during the same period, however, hacking was also increasingly criminalized in Germany and internationally.[41]

After the event at Paradiso, Nevejan, Gonggrijp, and Patrice Riemens drove to Hamburg to meet Chaos Computer Club members in their home city for the annual conference in December 1988.[42] On the way home, Gonggrijp articulated his initial ideas for establishing the computer journal *Hack-Tic*. Together, the three formed plans to host an event in Amsterdam devoted to hacking.[43] The subsequent event, *Galactic Hacker Party* or *International Conference on Alternative use of Technology Amsterdam* (ICATA 89), brought together for the first-time hackers from all over the world in a public event, linked both physically and via Internet connection. Through communication expert professor Cees Hamelink at the University of Amsterdam, who was instrumental in developing UNESCO's policy on balanced flow of information (as opposed to free flow), the organizers made contact with UNESCO and participants in Brazil and Nairobi.[44] While the press focused on hacking and hackers, the organizers successfully assembled a broad coalition of stakeholders, including all the earlier mentioned initiatives, labs, and collectives. Only after the event did Amsterdam Council begin to realize the city's special status as a center of innovation and so supported the organizers' bid to have the conference's final manifesto published under the auspices of UNESCO. In its letter to UNESCO, the City Council pointed out that "the organization of this conference is possible because the Netherlands, unlike many other countries, do not as yet have legislation that makes 'hacking' without criminal motives an offense."[45] Indeed, the law in the Netherlands was not changed until March 1, 1993, and Dutch hacking law still counts as more limited than elsewhere.[46]

The Center for Cooperative Technology, led by professor Gerard de Zeeuw, supported GHP from the beginning, helping out with the physical network as well as inviting their network of cyberneticians. That is why Gordon Pask, the communications specialist, came to lecture on entropy. At the Paradiso event, several Chaos Computer Club (CCC) members as well as members of the New York-based hacker's club 2,600 were present. Nodes in Brazil, New Zealand, and Kenya reported their perspective on digital networks, suggesting that hacking be seen "not as a middle-class northern issue, but more as universal. Maybe the real hackers are

[41] Denker, op.cit. fn 39.

[42] Ralf Rudolf. 1988. Erste Eindrücke zum CCC Congress '88. *Die Datenschleuder* 28–29(1988) at http://www.offiziere.ch/trust-us/ds/28/010_Erste_Eindruecke.html. Last accessed July 2011.

[43] Nevejan, Holiday.

[44] Patrice Riemens to Cees Hamelink, July 2, 1989, Nevejan Archive, Galactic Hacker Party, Folder "Organisatie."

[45] A.W. Jansen to Claude Ondobo, director of UNESCO International Programme for the Development of Communication, October 25, 1989, Nevejan Archive, Galactic Hacker Party.

[46] A recent ruling (March 9, 2011) held that hacking into a Wi-Fi network was not a crime under Dutch Law (Article 138a) that strictly covers breaching the security of a physical computer.

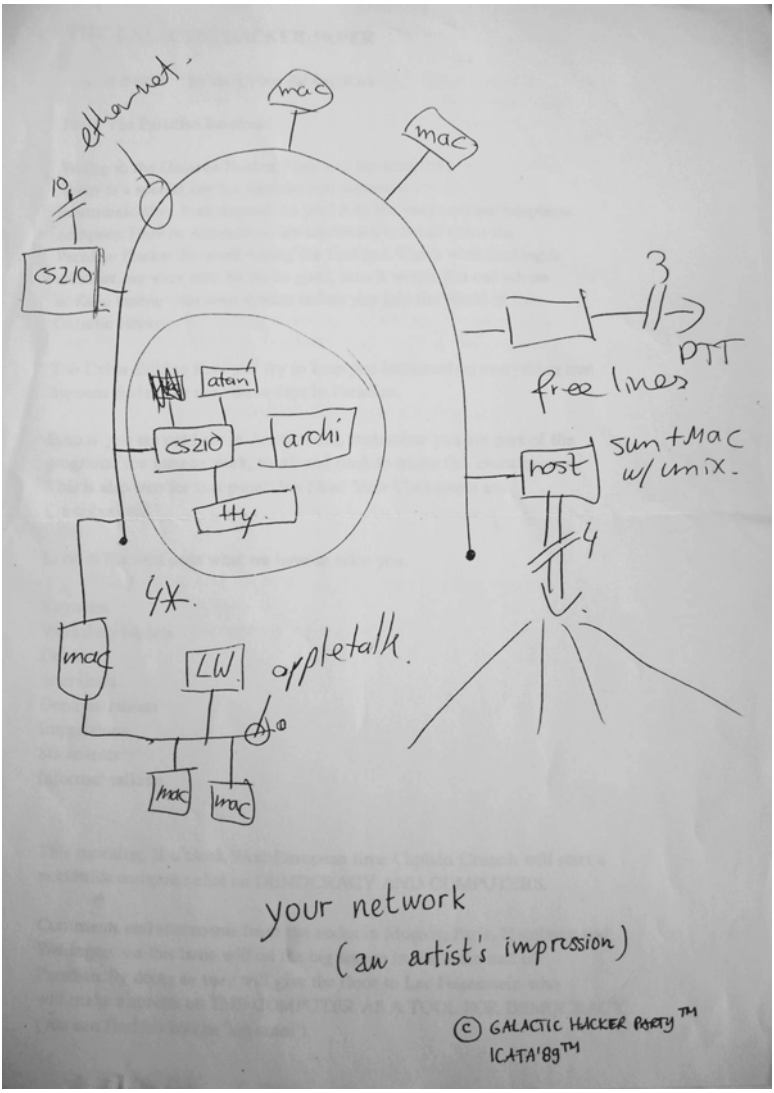

Fig. 9.1 "Your Network: An Artist's Impression." This sketch was created in preparation for the Galactic Hacker Party at the Paradiso in Amsterdam in 1989. A schematic diagram showing both the machines located at the event and the connections abroad, its simple, accessible form reflects the goals of the organizers: to demystify the Internet by turning it into a participatory technology. Source: International Institute for Social History in Amsterdam

found in the South instead of the North, because there they are no longer trying to see it as a universal possibility for communication."[47] For the event, the organizers created a computer infrastructure (Fig. 9.1) connecting Paradiso with other regions

[47] "Link with Nairobi," ICATA 1989 draft proceedings, Nevejan Archive, Galactic Hacker Party.

and installed 20 computers with user-friendly, down-to-earth instructions for conferencing such as "1. Don't Panic, 2. Find a free terminal, 3: Try to get a menu that looks like this: 1. Conference 2. Modem 3. Report 4. Leave message." After explaining what each command did, the instruction simply read: "Try this!"[48] In the final months of the Cold War, the conference brought together a unique and diverse group of people. American guests participated like Captain Crunch (John Draper), the best known phone phreak at the time, and Lee Felsenstein, the Berkeley Community Memory project initiator and Homebrew Computer Club member. In the plenary session, the computers made worldwide connections. When first making contact with Amsterdam hackers, the US hackers also tried to control the event's message.[49] Using San Francisco's Teleport, a so-called picturetel connection was made with three Russians from Star City, near Moscow. The Dutch-based Antenna presented its worldwide connections by going live with South Africa on the big screen, while simultaneously providing a protected place for open debates about sensitive political issues of the day. Most memorably, a heated debate took place between Pengo, a young hacker arrested with two friends for collaborating with the KGB, and CCC founder Wau Holland, who disapproved of their choices. Pengo responded to the accusation by arguing that collaboration with major corporations such as Philips amounted to a similar level of co-option.[50] The Art Heafties, local techno-punks, provided a lightshow and soundscape, framing the gathering as an artistic rather than political event devoted entirely to hacking. The event also hosted a separate "hack room" in Paradiso, where many hackers gathered. The audience consisted of hackers, people from industry, social scientists, representatives of national security agencies, and artists exploring art and technology.

The event made both national and international news. The *Wall Street Journal* front page headline was "Nerds of the World Unite," the French daily *Libération* devoted an issue to "Le Bal des Voleurs," and the British *Guardian* wrote an extensive article.[51] Within 3 days, a local/global digital culture had emerged, on stage and online, that connected people and organizations, and it has lasted since then. While the conference sessions engaged in debates on how the computer could be a tool for democracy, by contrast, Dutch media reports focused on legality issues and *computerkraken*.[52] Many mainstream Dutch media outlets also highlighted the secretive and anarchistic nature of the hackers in the hack room. The magazine

[48] "Conferencing," Unnumbered document, Nevejan Archive, Galactic Hacker Party.

[49] The US hacker Craig Larsen wrote to the organizers: "I feel this is an historical event of tremendous importance. This is the first time in history that the cyberheroes of the East Coast, West Coast and Europe will all be aligned together" and described the event as a "Euro-American techno summit," email Craig Larsen to Hack-Tic, July 20, 1989, Nevejan Archive, Galactic Hacker Party, Folder "Organisatie."

[50] ICATA 1989 draft proceedings, Nevejan Archive, Galactic Hacker Party.

[51] Mark M. Nelson. 1989. Nerds of the world unite – And defend their right to hack. *Wall Street Journal Europe*, August 7; Informatique: Le Bal des Voleurs. *Liberation* no. 2551 (August 5, 1989).

[52] Talks included "the computer as a tool for democracy" (Lee Felsenstein), "Citizen networks," and "Social Consequences of AI." Program, Galactic Hacker Party, Nevejan Archive, Galactic Hacker Party.

Hack-Tic rejoiced that the event "brought more hackers together than 10 laws could ban!"[53] Another independent magazine did express some reservations, though. "Those stealthily working the keys in the hack room did not answer questions or explain what they were up to. The visitor was shut out. "You know, I feel like an illiterate' said a curious but non-hacking visitor."[54] While the mainstream Dutch press either focused on hackers' activities as a problematic domain of the technically literate elite or sensationalized them, the alternative press forced the issue politically, demanding greater access to the tools that would unlock the new domain.

The second installment of the event occurred under radically changed circumstances. In Amsterdam, like in many other cities with a reputation for tolerance towards gays, the unfolding AIDS epidemic changed the cultural and political landscape fundamentally. With no cure in sight, a strong social prejudice reignited against gays. When blood transfusion and infected needles were identified as the cause and women also started to have AIDS, many young people were confronted with illness or friends dying. The sense of innocence and the joy of sexual liberation facilitated by contraception came to an end overnight. When in June of 1990 the US government prohibited people with AIDS or HIV from travelling to the states to attend the World AIDS conference in San Francisco, Paradiso decided to host a shadow conference and welcome people with HIV and AIDS. The Galactic Hacker Party organization, along with David Garcia, Heleen Riper, Matthew Lewis, and Rolf Pixley, decided to create the International Conference on Alternative Technology for AIDS (ICATA90) nicknamed the Seropositive Ball (Fig. 9.2). The Amsterdam branch of ACT UP, HIV Union, National Health Service, AIDS fund, parents of children with HIV organizations, the Buddy project, and others established a broad coalition with financial support from the Dutch Ministry of Health. The Center for Cooperative Technology at the University of Amsterdam, headed by Gerard de Zeeuw, assisted Pixley in creating a network that anticipated many of the features of the current World Wide Web graphical interface. The development notes stressed: "In the attempt to bypass the usual terminal interface and complicated command structures of E-news and E-mail, we are developing hypercard communication programs that will require only the address and message to be typed. All other actions will be executed by clicking on buttons with a mouse."[55] Using hypercard stacks distributed by mail and the university's digital infrastructure, the network succeeded in including the AIDS wards in Amsterdam's Academic Hospital, Cornell University in New York State, and San Francisco's General Hospital.[56] These stacks featured an online art gallery and "the AIDS stack" a large database of information developed by Michael Tidmus.[57] The

[53] *Hack-Tic* 5–6(1989): 3.

[54] ICATA '89 or Galactic Hacker Party?. *NN: Blad tegen de toekomst* 37 (August 10, 1989): 9.

[55] Notes from Rolf Pixley, May 12, 1990, Nevejan Archive, Seropositive Ball, Folder "0+0 Network."

[56] On hypercard, see "Hypercard gone but not forgotten," *Wired* (August 14, 2002) http://www.wired.com/gadgets/mac/commentary/cultofmac/2002/08/54365

[57] Artists who contributed to the first ever online art gallery were Max Kisman, Peter Mertens, and Jan Dietvorst among others. Unfortunately, due to digital erosion, the art gallery no longer exists.

Fig. 9.2 Poster for the Seropositive Ball, ICATA 1990. Created by Jan Dietvorst, this simple, yet visually powerful design of a gold circle in an 'Yves Klein' blue square captures both the "zero" implied in the title, as well as the global nature of the crisis. The colors sought to evoke both the feelings of celebration and mourning represented by the event. Although hung mostly in the Netherlands, its text in English projected the underlining international community the poster was addressing within and beyond the city of Amsterdam

organization established public access points with Act Up in San Francisco, Simon Watson's Project Space in New York, several Amsterdam bookshops, and Paradiso. Some AIDS patients at home were connected as well. Computer company Apple

Samples of the AIDS stack can be found in Nevejan Archive, Seropositive Ball, Folder "0+0 Network."

had a policy of joining in the fight against AIDS at the time and provided dozens of computers both within Paradiso and other public spots, as well as in AIDS wards and for patients at home.[58] Under public pressure, even the US State Department felt a need to issue an official statement to explain the Reagan administration's AIDS policy at the opening of the conference by the Dutch Minister of Health with the HIV Union chairman. Over 150 artists contributed: musicians, theater performers, visual artists, filmmakers, and more. For those involved in the Seropositive Ball, the event was memorable. From a technology perspective, the Seropositive Ball network showed the significant impact of a good graphic interface for the uninitiated and for new network users. Network users needed no learning curve. One email from a small AIDS ward in the city shows how quickly caregivers and patients took to the interface:

> Currently we are looking after four patients. Unfortunately they are too ill to be able to participate in the Sero+net activities. The staff is too busy with their daily activities and therefore also unable to take part in the ongoing conversations, but they are very interested in the Ball. They admire the wonderful art gallery and value the information in the stack and the news. And they would like to hear from you in Paradiso about the events. Tonight the night shift will certainly have time to take note of your messages and will pass them on to patients and staff here.[59]

The newcomers used the new technologies with such intensity, driven by the desire to find treatments or to be in touch with people in the same situation. Often, tears were shed when the computers were collected again after the event. The idea of vital information as driver for technological innovation became the key lesson of the Amsterdam event.

Both events, at which hackers from all over the world met and engaged in debates with social activists, artists, politicians, administrators, large medical organizations, and security services, benefitted from the production sites and cultural centres that had emerged in the city since the 1960s. They also became the birthplace for foundations building a new media landscape. The events provided a platform for Dutch digital culture to present itself and helped identify key players who are still important today.

9.5 New Networks and Centers: 1993 as the Year of Change

The possibilities of the new digital age raised by the two ICATAs began to spin out and take root in strengthening Amsterdam as a network node locally and in forming new global networks. Internationally, the electronic border-crossings performed at the ICATA events became even more significant due to the dramatic political changes occurring in Europe. Cultural centers became important civil society sites

[58] The documentation folder for the event contains the booklet, "Where does Apple stand on AIDS," produced by Apple in Cupertino, April 1990. Caroline Nevejan to Helen Goossens, Apple Europe July 5, 1990, Nevejan Archive, Seropositive Ball, Folder "June 1990."

[59] Proceedings, Seropositive Ball, 1990, Nevejan Archive, Seropositive Ball.

in the process of democratization, most evident in Eastern Europe. After the Berlin Wall fell in 1989, the Soros Foundation deliberately funded society organizations such as media centers, conferences, and networks to facilitate democratic processes after the breakdown of the communist states, building on network connections already forged before the wall came down. Centers in this network such as the Fine Arts Documentation Center in Budapest—founded in 1985 already and one of the important centers in connection with Amsterdam—became major connection points.[60] The members of this network of independent media centers eventually formed the International Contemporary Art Network (iCAN) based in Amsterdam.

Building on these connections, Paradiso launched the *Next 5 Minutes* conference (January 8–10, 1993) to explore the role of independent media in these changing societies and global networks.[61] They felt the dichotomies between underground/dominant, right/left or independent/mainstream no longer matched the media landscape. To pinpoint the more flexible nature of new media configurations and identify cracks in the existing media landscapes, they chose the term "tactical television," drawing on the cultural theory of Michel de Certeau.[62] At first, they mostly ignored the Internet (although Hack-Tic did run a session at the conference) and focused on the new possibilities of independent television enabled by portable camcorders for spreading information and making connections outside formal communication channels.[63] The organizers were driven by the idea that such new affordable technologies could create an alternative media sphere to the rigid domination of the Reagan and Thatcher years. Through the Antenna network, media makers in the southern hemisphere from Brazil to Burma, from the Aboriginals' satellite in Australia to New York's Paper Tiger, were well represented. Lovink, with Soros Foundation funding, involved over 25 media makers from Eastern Europe, including those who had started the Romanian Revolution in Timisoara Television

[60] Soros Centers for Contemporary Arts, http://www.c3.hu/scca/index.html. Last accessed 6 Oct 2011.

[61] David Garcia (Time Based Arts), Geert Lovink (Bilwet), Geke van Dijk and Bas Raijmakers (Amsterdam Cultural Studies), Menno Grootveld (Robotnik TV), Raul Maroquin (Hoeksteen TV), and Caroline Nevejan (Paradiso) all sought new perspectives on the emerging media landscape, gathering best practices and new theory, which resulted in the publication of the Zapbook and the first Next Five Minutes (N5M) program. In the next installment, the second N5M, their media critique was directed mostly at the Internet. The nettime mailing list, moderated in several languages and including editors Patrice Riemens and Geert Lovink (Amsterdam), Pit Schulz (Berlin), and Ted Byfield (New York), was instrumental in this development. Since then, N5M has evolved into a larger network that organizes conferences and education around the globe. In 2013, Erik Kluytenberg, programmer at De Balie, is the catalyst in this network.

[62] Jeroen van Bergeijk, Geke van Dijk, Karel Koch, and Bas Raimakers (eds.). 1992. *N5M Zapbook: Working papers*. Amsterdam: Paradiso. http://www.tacticalmediafiles.net/TMF_documents/N5Mzapbook.pdf, esp. 25. Last accessed 6 Oct 2011; Michel de Certeau. 1984. *The practice of everyday life*. Berkeley: University of California Press.

[63] Karel Koch. 1992. Introduction: The camcorder revolution, in Bergeijk et al. eds., *N5M Zapbook*, 29. Program, "Next Five Minutes," January 8–10, 1993, Nevejan Archive, Folder "Press Now tot/met zomer 1995." The next installment of N5M expanded the idea to "tactical media" and brought the Internet into focus.

Studios.[64] The rich local television outlets in Amsterdam and other Dutch cities participated as well. In the wake of this and subsequent meetings, the nettime mailing lists forged an ongoing English-language discussion group for Internet critique.[65]

The war that broke out in Yugoslavia in 1991 threw the international situation into sharper relief. Young refugees from former Yugoslavia came to Amsterdam. Paradiso, De Balie, and Index on Censorship initiated Press Now and organized support for independent media in former Yugoslavia. Working through both diplomatic and underground channels, Amsterdam activists developed programs dealing with the war in collaboration with Belgrade's independent radio station B92, the beacon for many teenagers who had fled. The radio station cum music hall became an Internet center early on. B92 director Veran Matic and Dragan Pantic, director of their Internet group, regularly visited Amsterdam to participate in debates and share their experiences. Since the Balkan Wars fed on media propaganda, B92's counter information was vital as it created a network of independent radio stations, representing a youth culture determined to counteract the older generation's war propaganda. On July 1,1993, during the long siege of Sarajevo, B92 radio, Amsterdam Paradiso, and Belgrade B92's Internet group supported by the Dutch public broadcaster VPRO joined in the program "Music, War and Radio" for one night of broadcasting in the hope of accessing the network of independent radio stations using the Internet as well.[66] B92's organizers came to Amsterdam, while VPRO journalist Erwin Blom visited the radio studio in Belgrade. Well-known Dutch rock bands played the songs of Yugoslavian rock bands. Krist Novoselic, Nirvana's bass player, originally from Zagreb, gave a talk via telephone. Well-respected British journalist Misha Glenny for *The Guardian* and BBC, writer of *The Fall of Yugoslavia* (1992), addressed the crowd in a somber mood.[67] And when B92 was under siege and threatened with having all its broadcasts stopped, XS4ALL pioneered the new possibilities of Internet radio and granted the station a worldwide audience. Soon after, the BBC Internet department took over the connection, guaranteeing that B92 never stopped playing.

Besides these global connections, between 1990 and 1992, the Hack-Tic Network and its magazine were important catalysts in shaping public development of digital connections locally. The Dutch node in the international hacker communities' network, along with 2,600 in New York and Chaos Computer Club in Germany, created a steadily growing community. Even though boys with a specific sense of humor that excluded others dominated the network, *Hack-Tic* played a

[64] On the videos, see Tjebbe van Tijen. 1993. A context for collecting the new media. In *Next 5 Minutes Video Catalogue, catalogue of videotapes shown during the festival on tactical television held in Paradiso Amsterdam, 8–10 January 1993*, ed. Bas Raijmakers and Tjebbe van Tijen. Amsterdam: International Institute of Social History. Online at http://socialhistory.org/sites/default/files/docs/collecting-new-media.pdf. Accessed 1 Apr 2013.

[65] See http://www.nettime.org/

[66] Program, "Press, War and Radio," Nevejan Archive, Folder "Press Now tot/met zomer 1995."

[67] Ibid.

significant role in the ongoing political debates and practices. Its visual appearance and written tone reflected the subcultural Do-It-Yourself publishing aesthetics. As an indication of its importance, security services, policy makers, and large companies subscribed to *Hack-Tic* magazine. Equipped with a disclaimer ("information here is for educational purposes. Use of this information could be punishable/dangerous to the state/naughty") and a reassurance to readers that they could subscribe anonymously—the magazine was sent in a plain brown wrapper: "If you have a position in society, you just need to put money and your address in an envelope and send that to our PO Box. We know what to do."[68]

Hackers' ability to be "public" to the extent they were in the Netherlands changed almost literally overnight on March 1, 1993, when a new law on "computer criminality" went into effect that for the first time made it explicitly illegal to gain unauthorized access to a secured place on a computer.[69] In so doing, this act enshrined in Dutch legal code the cultural link between squatting and hacking that had been established in the years before. Section 138 of the code is on breaking and entering, called "huisvredebreuk" (literally "disturbing the peace of a home"); section 138a, which prohibits hacking, defines its crime as "computervredebreuk": disturbing the peace of a computer. In response to the new law, the Hack-Tic group shifted its focus beyond the hackers' community to explore more popular uses of the Internet.[70] As *Hack-Tic* told its readers: "It is important that the Internet community becomes a more balanced reflection of the 'normal' world. Right now people with money and power are over-represented."[71] In May 1993, the group started XS4ALL, a public access Unix system, open 24 h a day. Subscriptions were available to anyone for 75 Dutch guilders for 3 months to help cover the system's operating costs and lease of lines. Going public also carried a paradox, the activists realized. Creating broad access meant asking users *not* to hack via their system out of fear that the authorities would shut them down. The new owners cited the "free flow of information" upheld in the Galactic Hacker Party manifesto as the higher goal. "When you look at it, we become lackeys of the paranoid system administrators in the world. That would have been difficult to live with if we had not believed, that thanks to our combined presence on the Internet, we might also change the atmosphere on the net."[72] The declaration signaled the start of a new era seeking to create public engagement with the Internet. When XS4ALL began, it could hardly handle the number of new

[68] Colophon. *Hack-Tic* 1(1989): 2.

[69] Officially Wet van, December 23, 1992, Stb. 1993, 33. History and full text of the law in Kornelis I.J. Mollema, et al. 1993. *Computercriminaliteit: De wetgeving, de gevolgen voor bedrijven en de accountant.* Deventer: Kluwer. See also P. Kleve, R.V. Mulder, and C. van Noortwijk. 2010. ICT Criminaliteit. In *Criminaliteit en criminaliteitsbestrijding in Nederland*, ed. Erwin Roelof Muller, et al., 259–288. Deventer: Kluwer; Hanneke. 1993. Wet computercriminaliteit. *Hack-Tic* 20–21(1993): 4–11.

[70] See articles in *Hack-Tic* 20–21(1993); Reinder Rustema. 2001. *The rise and fall of DDS*. MA thesis, University of Amsterdam.

[71] *.hactic.nl. *Hack-Tic* 20–21(1993): 18.

[72] Ibid., 20. They did, however, offer one month's free access to anyone who could hack *their* system with instructions.

subscribers. Initially aiming for 500 subscribers in its first month, it got them within its first day.

A second generation of digital activists then took the lead. Marleen Stikker, a programmer at the center for political debate De Balie (adjacent to Paradiso), involved the center in the subsequent digital developments. De Balie was founded in 1982 by Felix Rottenberg, former chair of the young socialists and later of its parent organization the Dutch Labor Party PvdA, in order to engage young people politically and culturally in renewing the party with grassroots politics. By 1989 already, De Balie had organized a series of lectures and exhibitions on technological culture.[73] Stikker herself became particularly inspired by working with Press Now to explore the medium as a means of revitalizing public culture.[74] From De Balie, Stikker brought together a group of thinkers; developers and digital activists explore the possibilities to develop civic access to the Internet. The so-called city plan group was searching for a narrative that would facilitate "ordinary people" to engage in online civic initiatives. As a result, they invented the concept of the Digital City.[75] Later in the summer of 1993, Hack-Tic Network organized *Hacking at the End of the Universe* (HEU), a follow-up to the Galactic Hacker Party, at a campsite where 3,000 participants hooked up their computers in tents for the first time.[76] Besides collaborative hacking, debates centered on the information society, privacy, and security.

Right from the start, and thanks to their deep ties to the political establishment, Stikker and De Balie succeeded in mobilizing political and financial support as well as a commitment from Amsterdam City Council. Reineke van Meerten, then the Council's project manager for telecommunication and informatics policy, played a crucial role in steering the project through the Council. The city agreed to finance Digital City as a 10-week pilot project in the lead-up to the municipal elections. The Ministry of Economic Affairs also contributed. The start-up capital for Digital City totaled 300,000 guilders. In the fall of 1993, Digital City became a foundation. Together with XS4ALL (and Mediamatic), they moved into an old building at Prins Hendrikkade, sharing lines, modem and data centers, systems maintenance, and the helpdesk. NLnet sponsored the new initiatives.[77]

Digital City was an instant success. Within months it had over 10,000 inhabitants, receiving European and worldwide attention. The first interface to Digital City was a classic black screen with white letters.[78] Its success increased even more when the organizers launched Digital City's first graphical interface to the net. With the help of designers Michael van Eeden, Marjolein Ruig, Mieke Gerritsen, and Rob

[73] The organizers were Michiel Schwarz and Rein Jansma.

[74] Authors' interview with Marleen Stikker, September 26, 2011.

[75] Members of the City Plan Group included Geert Lovink, Menno Grootveld, Geke van Dijk, Bas Raijmakers, Joost Flint, Felipe Rodrigues, Paul Jongsma, Walter van der Cruijse, and Bert Mulder.

[76] Hacking at the End of the Universe. *Hack-Tic* 22–23(1993): 3.

[77] Interview with Stikker.

[78] Digital City 1.0 was designed by Marleen Stikker and Felipe Rodriguez. Digital City 3.0 was designed by Michael van Eeden, Marjolein Ruyg, Rob van der Haar, and Marleen Stikker.

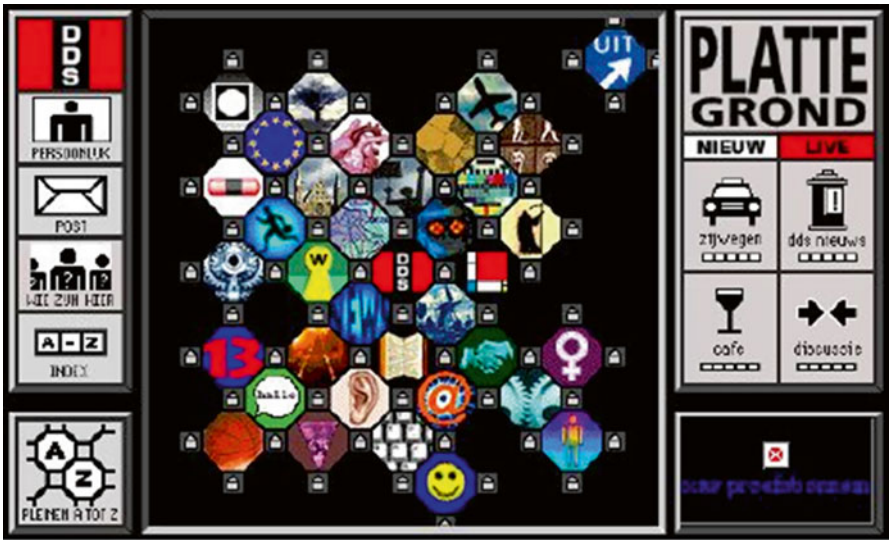

Fig. 9.3 Envisioning the Internet: It was 1994: the emerging Internet was still clunky, still steeped in the culture of the military and engineering, from which it came. Enter the Dutch "Digital City" project, an alliance of activists, squatters, and members of local government. These pioneering users broke with engineering-based interfaces of letters and code. Building on this ground breaking start, the design continued to develop rapidly, resulting in this third, updated interface introduced in 1995. This image—and Digital City's approach—imagines the Internet as a city unto itself. Each octagon on the screen represents different activist groups in the city, from Gay Square to news-junkie politicos, side-by-side in the city everyday institutions and places, such as city hall and the city library. Source: published online at re: DDS http://re-dds.nl/vondsten/FolderDDS3-telnr.pdf under creative commons licence CC BY-NC-SA 3.0 NL

van der Haar, Digital City boasted one of the most advanced appearances of an Internet City worldwide (Fig. 9.3). By inventing "interaction design" in the process, software developers and graphic designers were jointly engaging in a method to understand and create interaction. All their efforts were directed at facilitating the thousands of digital citizens who demanded services no one had thought of before. Not only interaction design but also participatory design and community management had to be invented on the fly. It was a constant conversation between developers, designers, and citizens exploring suggestions immediately and generating an exponential growth of ideas and manifestations of online life. Hackers, artists, and activists were crucial in the evolving dynamic.[79]

Citizens of Digital City were invited to create their own profile so others could see who was online. One could become a visitor or an inhabitant of Digital City,

[79] Interview with Stikker. See also Lovink, Geert Opkomst, Ondergang en Herrijzenis van de Digitale Stad. Interview met Marleen Stikker. Online at http://amsterdam.nettime.org/Lists-Archives/nettime-nl-0103/msg00038.html. Accessed 29 Mar 2013.

which offered various interaction possibilities. Squares were thematically structured and neighborhoods acquired character. Organizations including businesses, NGOs, and, for example, the library and some newspapers could experiment with how to profile themselves and invent services they could offer. Amsterdam City Council collaborated by offering their public and management information systems to be included in Amsterdam Digital City. The overall city plan provided a map which was redesigned several times, on which users could just click and go. Users built houses, cafés, gardens, shops, and even the first online cemetery called "Momento Mori."[80] In what was called The Metro, a text-based MOO (Multi-User Domain, Object Oriented), hundreds of users built this creative universe.[81] Beurs TV, a local broadcaster and organizer of the online elections in Digital City, managed for the first time to incorporate chat sessions on live television.[82]

Amsterdam Digital City provided a platform in a user-friendly, visually attractive, and Dutch-based environment to explore the potential of online communication. The graphical interfaces and interaction software that were developed triggered the imagination of many users. Besides online interaction, Digital City organized citizen meetings to discuss the implications and effects of Digital City and the new netiquette. It also incorporated a wide range of public events including parties, debates, and artistic experiments, to unlock the potential of the connective platform. Digital City was a great experiment of fundamental research into the future of the public domain. Being locked into the real city of Amsterdam, it took the human scale as its conceptual ground, integrating online life with real events in the city of Amsterdam. Whereas The WELL in the United States was a virtual community established online which then began to meet in person, DDS originated in communities that already existed outside the Internet and who experienced the online interaction as a welcome contribution.[83]

For the emerging scene of digital artisans, Digital City served as a playground full of inspiration, while the Dutch government founded the Netherlands Design Institute, whose director John Thackara launched the Doors of Perception conference.[84] Inspired by the TED conference and Siggraph, the leaders of the new designer generation gathered in Europe, including prominent IT companies, consultancies, scholars, and designers to present the latest software inventions. The Dutch digital scene went on display, while the conference offered a platform to explore fundamental differences between the United States and Europe.

[80] Created by Marjolein Ruyg.

[81] Created by Michael van Eeden.

[82] Beurs TV was initiated and directed by Nina Meilof.

[83] This is in many ways comparable to the internet use in Trinidad highlighted by Slater, Modernity under construction.

[84] Thackara launched the Doors of Perception Conference together with Willem Velthoven of Mediamatic. This conference was moved to India after the Netherlands Design Institute closed. See www.doorsofperception.com

With the introduction of graphical interface, the Internet had suddenly become commercial. It changed the political dynamics. Much discussion surrounding Digital City and what rapidly became known as the Amsterdam Public Digital Culture has been a tale of one moment of euphoria followed by decline before the project was pulled into the commercial domain.[85] Such narratives questioned the sustainability of open infrastructures while examining the willingness and ability of Digital City's organizers and administrators to maintain such structures in light of corporate competition and sought to explain Digital City's transformation in the second half of the 1990s. Confronted with an increasingly commercial environment, the organizers felt Digital City either had to reinvent itself or close shop. By the late 1990s, the government no longer supported the creative industries. The Netherlands Design Institute had to close its doors, causing the Netherlands to lose its position as front-runner in the digital revolution and test country for many industries involved. When Digital City decided to stop the site in 1999, many users felt the organization had no right to do so; it was their city. The organizers felt they had no choice but to close the gates.[86]

Since 1993 and through 1994, Internet use had spread at a dazzling speed, and its transformation into a commercial realm was becoming increasingly apparent. Some of the original initiators saw the space for public research in which networked events and public initiatives like Digital City offered scope for participatory development in the public domain, shrinking fast. To protect this space where such public research could be funded and designed, Paradiso and De Balie joined forces. Independent consultant Bert Mulder wrote an analysis of the possibilities of starting an independent media lab. In December of 1994, Stikker (De Balie) and Nevejan (Paradiso) founded the Society for Old and New Media, an independent media lab for culture and the public domain.[87] De Waag, a former city gate built in the fifteenth century where Rembrandt painted his anatomy lesson in its Theatrum Anatomicum, and located directly on the Nieuwmarkt, had been empty for over a decade. The city was seeking bids for its redevelopment, and the Society for Old and New Media entered the competition. It was funded and supported by two partners from culture (De Balie, Paradiso), two from education (Rietveld Academy's Sandberg Institute, the Utrecht School of Fine Arts), and two from business (the cooperative Rabobank, media company Weekbladpers), putting up a bid to create an institution to support public research into old and new media. The city awarded the contract to the new foundation, rejecting several proposals from commercial developers.

Although modeled on MIT's Medialab in Boston, the Amsterdam initiative did not share its US counterpart's focus on commercial competitiveness. In the oldest medieval building in town, the savviest technologies were gathered with an agenda defined by a civic perspective. Because they were pushing technology as well as finding new creative uses, their agendas were distinctly different. Whereas MIT

[85] This is definitely the narrative in Castells, *Internet*, 146–155; see also Rustema, *Rise and fall*; Flint, *DDS*.

[86] Interview with Stikker.

[87] http://www.waag.org

Medialab made an application for individual children in a smart room full of sensors, the Waag built a visual MOO for inner-city elementary schools, allowing children to learn to both reading and writing plus art history at the same time. Debates between these different approaches were heated. Since then, Waag Society has been a place of innovation, joining the ranks of established media labs (and several MIT Medialab students came as apprentices to the Waag). In the second half of the 1990s, Waag Society played a significant role in creating a European network of independent media labs and became a founding partner of Sarai, a New Delhi-based media lab.

Other media labs also joined the established ranks of digital arts and culture, while new labs emerged as well: Submarine, Worm, Fabchannel, and more. As of 1996, the media labs started to establish what is called the Virtual Platform, to better organize their lobbying activities and benefit from each other's experiences. They have taken joint political action while developing their own individual work and identity. Mediamatic continues to create award-winning exhibitions and performances that intervene in key cultural debates and has also developed the widely used Anymeta community management system. V2 is an established digital art platform and lab as well. STEIM invites many young artists to come and play and collaborates closely with mostly international conservatories. Since 2001, the Dutch government has supported digital culture, acknowledging e-culture as a discipline in its own right. In 2012, the government decided to abolish these funds once again, arguing that creative industries do not need public support.[88]

9.6 Conclusion

As we have shown here, the digital public culture of Amsterdam that Castells highlighted can best be understood as an outgrowth of the public media culture pioneered in a range of independent media centers. Their commitment to broad and popular access to media and active, creative networking shaped the digital culture that emerged in the 1990s. Digital City is indeed itself best viewed as such a media center, which focused all its experiments on the new virtual environment in an attempt to revitalize the city's culture. These media centers came into existence within larger cultural movements in which youth culture, intellectual underground, and political activism played an important role, in turn shaping their particular approach to the emerging digital media. Media centers functioned locally and translocally, making bridges between Eastern and Western Europe and beyond.

Because media centers were part of larger social movements, it is not surprising to see that crucial roles in the development of Europe's digital culture included nontechnical experts. Paradiso's network events and Amsterdam Digital City set an agenda in which technology's impact on society was at the forefront in a

[88] The current political debates can be followed at the Netherlands Council for Culture and the Arts: http://www.cultuur.nl/

collaborative effort by technical and nontechnical people alike. These actors' emphasis on the questions "What is this stuff for?" and "How will it enhance our lives?" had a deep impact on how the digital culture emerged in those first years. The digital culture that emerged in the United States, where a community like The WELL was built on the Whole Earth Catalogue, has also been defined by such non-industrial and mostly cultural developments.[89] It has sharpened and deepened the imagination of the first adaptors. Or, for example, Apple's Educational Object Index in the mid-1990s, building on a large movement of learning innovation, has influenced ideas about online learning that have only now become commercially available.

Janet Abbate has stressed that the title of her study *Inventing the Internet* points to a technology that has been repeatedly *reinvented* by the actors and shaped the Internet's path.[90] We have followed a similar line of argument here, but expanding our focus beyond the developments within the military (e.g., ARPAnet), scientific (e.g., CERN), and commercial communities that are the standard reference points of most Internet histories. Instead, we highlight the local mediators who adapted the Internet along different lines, pushing for universal free access, political engagement with the city and the world, and for a civil society with broad participation including state and countercultural actors. As one contemporary observer remarked, Digital City was the result of a "golden formula: gather professional activity-organizers around a table with hackers who understand all about network technology."[91] Such a "golden formula" emerged from a social and technological networking style that characterized the city. Alternative networks negotiated and cooperated with public institutions and industry in a political arena, where state, market, and civil society worked in close harmony to manage conflict and coordinate change. Radical behavior, as long as it conforms to certain social rules, will be engaged with rather than criminalized or excluded. Social-democratic city councils fostered such politics of consensus, turning Amsterdam into a relatively safe playground to explore new media and new forms of community. Digital City, in short, represented a broad social coalition and unique civic participation.

Fixing historical focus on the relationship between digital development and specific urban cultures in Amsterdam has highlighted three aspects of the story. Firstly, the historical focus shows the importance of a local youth and alternative culture in Amsterdam. The digital culture emerging in the early 1990s was rooted in the independent printing and broadcasting cultures that blossomed in 1980s Amsterdam. These were all connected with local activist communities involved in European and global networks, such as squatter movements, antinuclear movements, and other

[89] See WELL's website at www.well.com; Katie Hafner. 1997. The epic saga of the well. *Wired Magazine* 5(5, May). http://www.wired.com/wired/archive/5.05/ff_well_pr.html. Accessed 27 Sept 2014.

[90] Abbate, *Inventing*, 6.

[91] Marianne van den Boomen. 1995. "Digitale Steden en virtuele Gemeenschappen," excerpt from Marianne van den Boomen. In *Internet-ABC voor vrouwen*. Amsterdam: Institut voor Politiek en Publiek. http://www.xs4all.nl~boom/hs8.html. Accessed 15 June 2011.

social justice movements. Secondly, we highlight how actors whose core expertise lay not in the traditional sense of technological realms but with strong visions for the future of digital technologies, which played an important role in shaping the Internet's material, institutional, and cultural infrastructure in the Netherlands and Europe. While noting the roles of major institutions and actors connected to them, as well as that of technological amateurs—the ever-present boys with toys—this story also shows how community, governmental, and industry actors played a vital part in creating a media infrastructure.[92] Thirdly, we point to the important role of public events in constructing and designing communication infrastructures. Networked events are moments whereby design—as described here—or by accident, a communication structure is created, whereby actors are made meaningfully aware of their connections.[93] At such moments of linking, both human actors and technologies *perform,* confirming and/or transforming the meaning of the connections for those who witness the event. At events such as the Galactic Hacker Party and the Seropositive Ball, and the hacker camping events (which continue to this day), computer networks were placed literally center stage to allow participants to experience the potential of the new technologies for addressing issues (social, political, and personal) they were already involved in.[94] The shared, witnessed, and collaborative first-time experience of new ways of communicating or creating and accessing vital information had a major impact on the participants' sense of their own capacity to intervene. This is very different to the hacker culture of garages and back rooms stressed in many histories of computer innovation, in that it focuses on a shared, public experience. Likewise, the history of The WELL is defined by its local roots in the San Francisco Bay area and is known through its monthly parties. Amsterdam Digital City hosted very dynamic meetings with its citizens. People sharing first-time digital network experiences resulted not only in an exponential growth of their imagination as well as a sense of realism of the new opportunities.

[92] For the Dutch case, see Veraart, *Vormgevers,* 83. For a longer-term communication perspective, especially the key role of radio amateurs in both constructing and subverting the development of state infrastructures, see Susan J. Douglas. 2004 [1999]. *Listening in: Radio and the American imagination*. Minneapolis: University of Minnesota Press; Onno de Wit. 1998. *Telefonie in Nederland, 1877–1940. Opkomst en ontwikkeling van eengrootschalig system*. Amsterdam: Otto Cramwinckel, Adrian Johns. 2010. *Death of a pirate: British radio and the making of the information age*. New York: W. W. Norton & Company.

[93] See Nevejan, *Presence*, 102–104, 128; Alexander Badenoch and Andreas Fickers. 2010. Introduction: Europe materializing? Toward a transnational history of infrastructures. In *Materializing Europe: Transnational infrastructures and the Project of Europe*, ed. Alexander Badenoch and Andreas Fickers, 1–26. Basingstoke: Palgrave; Andreas Fickers, and Susan Lommers. 2010. Eventing Europe: Broadcasting and the mediated performances of Europe, respectively. In *Materializing Europe: Transnational infrastructures and the Project of Europe*, ed. Alexander Badenoch and Andreas Fickers, 225–251. Basingstoke: Palgrave.

[94] Hacker camps now occur every 4 years in the Netherlands and have included "Hacking in Progress" (1997), "Hackers at Large" (2001), "What the Hack"(2005), "Hacking at Random" (2009), and "Observe, Hack, Make" (2013).

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