

Place, Community & Innovation in the Growth of San Francisco's Internet Industry  
in the 1990s: The Case of Cyborganic

Based on 10 years participant observation of Cyborganic, a group of San Francisco Internet workers, this paper looks at the contributions of communitarian sociality to the development of the Internet industry in San Francisco in the early 1990s. It addresses questions at the intersection of a number of different research programs conceptualized variously in terms of "regional advantage" (Saxenian); "social capital" (e.g. Putnam 1995, 2000); the productivity of hacker and open source culture (e.g. Castells, Himmanen, Lessig, Weber); the importance of face-to-face interaction for transmission of non-codified knowledge (Storper); and the rise of a "creative class" (Florida) of "no-collar" (Ross) knowledge workers. Despite great differences, there is consensus in this literature around the importance of culture and dense, over-lapping social ties in creating self-sustaining hubs of economic productivity and technological innovation, such as Silicon Valley and San Francisco's SOMA district. Much of this research emphasizes the importance of Silicon Valley's local culture in creating a self-sustaining milieu of innovation (Saxenian 1993, 1994; Castells and Hall, 1994; Bahrami & Evans, 1995; Cohen and Fields, 1999). This literature perceptively recognizes the need to look beyond firms, institutions, and formal organizations and my paper engages it through two analyses of the Cyborganic case: one centered on its productivity, the other on its communal dimensions as a self-conscious project to build a community and business both online via the Internet and offline via face-to-face interaction rooted in local place. While the first analysis corroborates the importance of place, culture, and history emphasized in the literature on regional advantage, the second seeks to offer an alternative framework in which to understand the contributions, value, and meanings of communities, such as Cyborganic, that reconfigure the boundaries of work, home, and social life.

## Cyborganic Overview

While the Cyborganic business concept can be traced back to 1990, the firm began as a community-based Internet start-up in 1993, incorporated and raised seed capital in 1995, and ultimately failed filing for Chapter 7 bankruptcy in 1997. The community can be traced to the San Francisco Rave scene and to the SFRaves mailing list started in 1992 and had a life separate from the business, remaining active for several years after the bankruptcy, and continuing today in a variety of smaller community groups, resources, projects, and business enterprises. Described by Rolling Stone magazine in 1995 as "a community of webheads who live in and around an apartment on Ramona Street on the outskirts of ... Multimedia Gulch,"<sup>1</sup>, Cyborganic's central project was to create a "home on both sides of the screen." Beginning in a group household in 1991 Cyborganic grew into:

- **A physical network** of computers, wires, and buildings extending at its height across eleven separate rental apartments in the Mission Dolores neighborhood (1991- present); and to a commercial space in SOMA at 654 Mission Street (1996-1997) that was to become the Cyborganic Café.
- **An online network** of approximately 100 users and homepages (The Forrest), 150 mailing list subscribers, about 25 featured content sites (The Valley), 7 commercial web sites (The Orchard), an extensive collection of publishing and community tools (The Shed), including a real-time chat that is still active, spacebar (<http://www.spacebar.com/>). The Cyborganic Gardens, the community's web presence and virtual counterpart to the Cyborganic Café, was under active cultivation from 1995-1997 and is currently archived at <http://archive.cyborganic.org/>
- **A social network** that extended across the community of multimedia and Internet workers that lived and worked in and around San Francisco's Mission/SOMA district between 1991 and 2001<sup>2</sup>.

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<sup>1</sup> "Webheads on Ramona Street," *Rolling Stone*, Issue 722, November 30, 1995.

<sup>2</sup> Cyborganic also had a smaller, less active New York City outpost.

My first analysis frames Cyborganic in terms of regional advantage, social capital, hacker culture, and the rise of new patterns of work and urban life, to highlight the vital feedback between and among these three networks and demonstrates their commercially productive character. My second shifts to engage Manuel Castells's theory of identity and meaning in network society, analyzing Cyborganic as part of a social movement that changed workplace norms and ushered in new forms and genres of media and techno-sociality.

#### Analysis I: Cyborganic as Peer-to-Peer Network of Production

Cyborganic joined place, technology and community in new productive relationships that yielded new firms (Organic Online) and software products (Vignette StoryServer, Apache), as well as innovations in process, media (e.g. user-generated content such as Geek Cereal<sup>3</sup>) and social forms. The aim of this analysis is to show that, despite its ultimate failure in the marketplace, the Cyborganic project produced a great deal of commercial value for its clients, users, and the emerging Internet industry between 1993 and 1997.

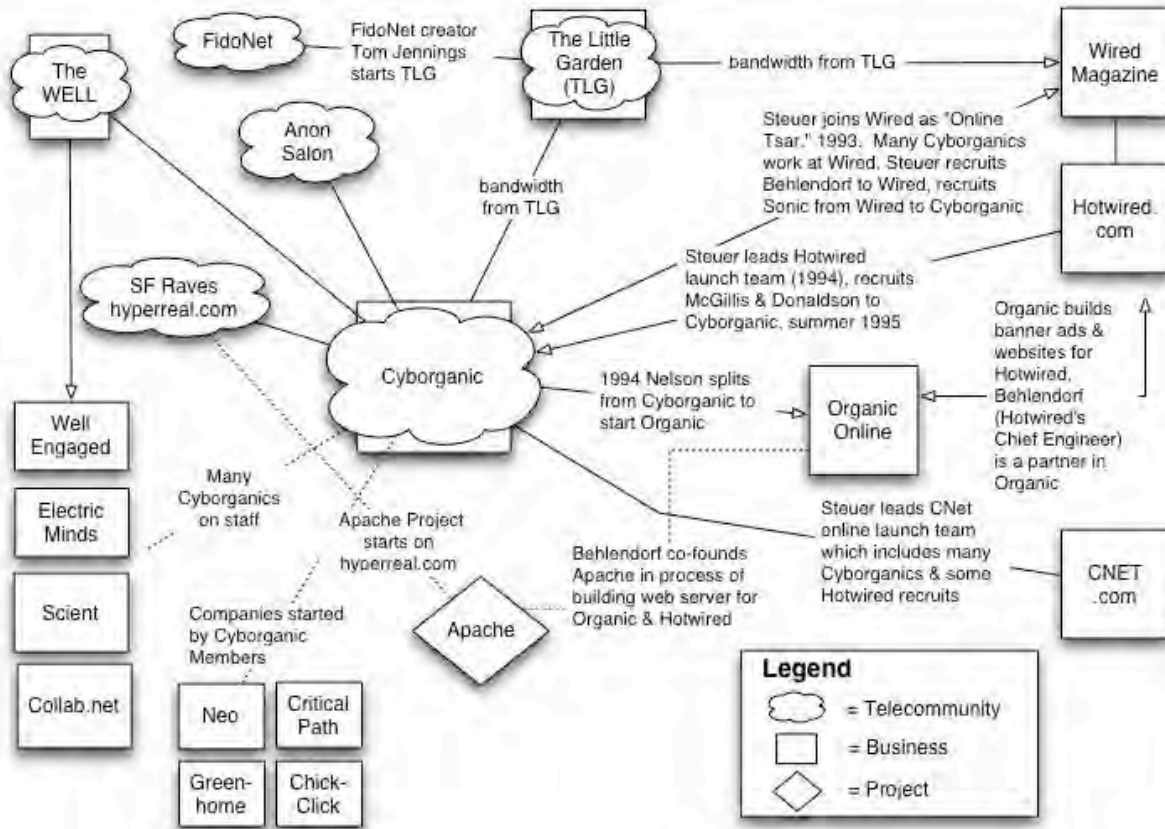
**Figure I** illustrates the synergies of place, networked sociality, community, and commerce entailed in the project; and **Figure II** gives some sense of the community's productive capacities diagramming its connections to a network of firms, projects, and communities that were influential in the development of the Web content industry in the 1990s.

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<sup>3</sup> Geek Cereal is archived at: <http://www.sharon.net/gc/>



Figure II - Cyborganic Network of Firms, Projects, &amp; Communities (1993-1997)



While a comprehensive history of Cyborganic is beyond the scope of this paper, this analysis seeks to demonstrate the group's productivity by focusing on a particular constellation of influential web ventures (Hotwired.com, cnet.com, and Organic Online) and the products (Vignette and Apache) and processes they generated.

In mid-1993, Cyborganic founder Jonathan Steuer, then a doctorate candidate in Communications at Stanford, was hired to wire the newly launched *Wired* Magazine. Literally, his first task was to set-up the bandwidth connection to The Little Garden (TLG) and implement Wired's mail gateway to the Internet. In October 1993, Steuer hired SFRaves founder Brian Behlendorf to join him on the development team of Hotwired, the first ad-supported website, launched by *Wired* in April 1994. Behlendorf, who has become a leader of the open-source software movement through his work on the Apache web server,

was an undergraduate at U.C. Berkeley at the time. Before Hotwired launched, there were no advertising-supported online magazines. Despite the name, *Wired* was run by people who did not understand the Internet. The publishers depended on San Francisco's ready supply of relatively cheap<sup>4</sup>, young, technology-savvy labor to design and build the technological and organizational infrastructure and practices to support online publishing. Indeed this was the first project Steuer and Behlendorf worked on at *Wired*. As Steuer recounts:

"When I started at Wired they were ripping text articles out of Quark Express documents by hand and putting them up for free email distribution"

*Wired* had not yet become an informational enterprise: though they had successfully incorporated the desktop publishing revolution into their core business practices, they had no idea yet how to incorporate the Internet. This knowledge came from staffers like Steuer and those he brought in from the Cyborganic community as leader of the Hotwired launch team. According to Steuer, despite his efforts, "Wired got it wrong" because they failed to grasp the importance of investing in the necessary technical infrastructure.

"Where Wired fell down and never recovered was [Wired CFO] Andrew Anker's refusal to spend the money on technological infrastructure to support publishing. The alternative *Wired* used was a million gnomes and elves and they kept using that until very late in the game. Anker had been burned by database projects that never launched at previous companies and never had faith in the investment."

(Steuer, interview 11/5/2004)

Beyond the resistance to investing in "tech projects MBAs don't understand" there was also a resistance to "template-driven design" and the re-organization of labor it requires. Throughout the organization, *Wired* used manual labor to handle tasks that might have been automated because they believed it was "cheaper to hire editorial and production people forever than to invest in a technology project." In addition to understanding the

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<sup>4</sup> Wired's graphic designers made under \$30,000 a year; editorial staff made minimum wage, if you factor in total working hours, with interns making even less than that.

interface between the technical infrastructure and the production and publishing model of an online magazine, Steuer understood the role mailing lists, discussion boards, and chats, could play in gathering communities of interest around Internet content. Indeed, this was at the heart of his vision for Cyborganic.

In keeping with "the hacker ethic" (Himmanen 2001), most members of Cyborganic viewed their "day jobs" as a means to other projects. During its initial "bootstrapping" phase, Cyborganic drew on the volunteer labor and personal assets of individuals working in SOMA's Web industry. Though the community took root on Ramona Avenue in the fall of 1991, talks about forming a Cyborganic business began in the fall of 1993 when Steuer, Behlendorf, Jonathan Nelson, and I gathered at Ramona to discuss the project. However, by the end of 1993, Nelson and Behlendorf split from Cyborganic to co-found Organic Online. Hosted on Cyborganic's servers during its start-up phase, Organic is a successful Web advertising firm that built many of the first corporate web sites for clients such as Reebok, DaimlerChrysler, Yahoo!, Blockbuster, and Fannie Mae. *Wired* magazine was their first client and initial conduit to this emerging market. Backed by giant holding company Omnicom Group, which also invested in Razorfish and other interactive and advertising agencies, Organic Online went public in 1999 and was traded on the NASDAQ under the ticker symbol "OGNC." By 2000 the firm had grown to eight offices and 954 employees worldwide, with gross revenues of 129 million. It was re-privatized in December 2001 and acquired shortly thereafter as a wholly owned subsidiary of Omnicom Group.

While working at Hotwired, Behlendorf found that the server software he was using—the public domain HTTP daemon developed at the National Center for Supercomputing Applications (NCSA)—could not handle the user registration system Hotwired.com required. He began patching the open source code to support the requirements. During this period, Internet growth was exponential and challenged even the steady stream of new technologies being created. Many webmasters began to "develop their

own extensions and bug fixes that were in need of a common distribution." Behlendorf was one of these webmasters and in February 1994, together with seven others, he formed the original Apache Group, hosted on the server that had been "liberated" from a closet at Stanford University, on bandwidth donated by Hotwired. With Cliff Skolnick, he started the Apache mailing list on this server, sharing information space and logins with the core developers collaborating on a set of software patches for the NCSA web server. Apache's first public release (0.6.2) came in April 1995 and was a big hit with the rapidly growing community of Internet systems administrators. Less than a year after the group's formation the Apache server passed NCSA's HTTPD to become the number one server on the Internet<sup>5</sup> a position it retains today.<sup>6</sup>

Shortly after the launch of Hotwired in 1994 Steuer left to consult for CNET, a combined cable television/Internet programming network funded in part by Paul Allen and USA Networks, founded in San Francisco in 1993. CNET had significant capital and was like *Wired* in that the company understood its core business (a television network centered on technology product reviews), but did not yet have a grasp on how to fully exploit the Internet. Yet unlike *Wired*, they were willing to follow Steuer's advice. CNET was exclusively television-driven until Steuer re-structured their approach to the Internet in ways that positioned them to spin-off commercially successful web portals such as Shareware.com, Download.com, Movies.com, along with the Story Server software on which they were built, in rapid succession. As Steuer explains, "Halsey Minor understood scale, he was a business guy, so he was willing to take the plunge, to invest in a publishing infrastructure." Steuer brought in Michael Gold from the Hotwired launch team to design a publishing system they called "Prism" which eventually became Vignette Story Server. In 1996, CNET decided to

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<sup>5</sup> Data from Netcraft: <http://www.netcraft.com/Survey/Reports/>

<sup>6</sup> According to a Netcraft survey of Web server software usage on Internet connected computers, Apache had a 69.87 percent market share of active sites in November 2004,

commercialize Prism and partnered with Vignette Corporation, exchanging the software and \$500,000 in return for a 33% stake in their company. An early entrant in to the Web content management market, Vignette Story Server signed up 130 customers in its first three years, including the Chicago Tribune and CBS Sportsline. It was instrumental in enabling, first publishers, then corporations of all kinds, to integrate their core business around new network structures and technologies. Competing against IBM, Microsoft, and Macromedia in the content management market that is estimated to be worth USD 1 billion by 2007,<sup>7</sup> Vignette currently has a market share of about 7%.

The key innovation that Steuer and the other Cyborgs brought to CNET from Hotwired was how to organize and structure the process of collaboration among business, technology, and design. As he put it:

"The business people need to understand that implementation requires skills they don't have. They have to bring in real technology folks and not be afraid to get into software development. The technology people need to understand rapid prototyping, building lots of stuff and letting it fail. And the design people, who understand the value of continuous cycles of refinement, need to understand what's good enough."

These are precisely the relations of production Steuer helped CNET re-organize around information technology, and that he and Gold worked out in specifying and designing the software that became Vignette Story Server. Steuer also hired the web production team that re-launched the CNET web site with new publishing processes and infrastructure. Caleb Donaldson, who worked on the Hotwired launch and became a principal in the Cyborganic Corporation, joined CNET in 1994. He and Steuer designed the online posting area, developed the site architecture and managed the ten person production staff through the re-launch of the CNET.com website in the spring of 1995. Everyone on that staff was a

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against 22.65 percent running Microsoft, and 69 percent running Sun Microsystems server software. [http://news.netcraft.com/archives/web\\_server\\_survey.html](http://news.netcraft.com/archives/web_server_survey.html)

<sup>7</sup> <http://www.cmswire.com/cms/web-cms/web-content-management-cms-market-summary-000405.php>

member of the Cyborganic community. In addition to software and front-end web production, the processes and structures they put in place in 1994 created long lasting value for CNET Networks. They helped position the company to become a leading player in the Web portal market of the 1990s. Between 1995 and 1998, CNET launched several technology news and utility Web sites (Download.com, Shareware.com, Search.com, Moviefinder.com) and began syndicating their news feeds to other online Web portals, such as Netscape/AOL.

This account of Cyborganic has aimed to demonstrate the project's productive capacities through its connections to *Wired*, Hotwired, Organic Online, Apache, CNET, and Vignette. Such demonstration advances the paper's first analysis that Cyborganic created new productive relationships that contributed to the rise of San Francisco's Internet industry in the 1990s. It indicates the importance of regular face-to-face interaction; universities; an intensely work-centric, risk tolerant culture, and a high degree of inter-firm cooperation and mobility in developing productive high trust, high technology social networks (Saxenian, 1991a, 1993, 1994; Castells & Hall 1994). The paper's second analysis, however, moves beyond firms and products, to examine the role of community in milieus of innovation and to propose a reading of Cyborganic as a social movement.

## Analysis II: Cyborganic as Social Movement

Cyborganic was both a project for business and a project for life and that understanding the relationship between the two is crucial to an anthropological understanding of either. Such projects can be regarded as utopian in the sense that they seek social change at the level of everyday life. While the productive capacities of communities like Cyborganic are a crucial dimension through which the social changes they represent propagate and have effect, an ethnographic account must attend to meaning as well as function. In seeking to use network technology to build a more tightly knit, face-to-face, community; and to integrate life and work in new ways; those who participated in Cyborganic were explicitly utopian in aspiration. The projects in which they cooperated were addressed as much to the production of meaning and identity as to the creation of economic value. In making this case I draw on Castells theory of social movements to analyze Cyborganic as a resistance identity formed on the basis of occupation and locality against "the one-sided logic of capitalism, statism, and informationalism." (Castells 1997:61). Or, to put it in other terms, Cyborganic was a utopian project to reintegrate "lifeworld" and "system" which become under conditions of modernity (Habermas, 1987).

Though Cyborganic took on the form of a business and that project was central, this elides the more anthropologically interesting fact that the majority of community members had no involvement with the business, either as paying customers or paid labor, and no clear sense of how Cyborganic planned to make money. Though the technical and social infrastructure of Cyborganic was provided through the business, for most in the community that project remained mysterious. Cyborganic's online and offline forums were not constituted as spaces of business, but of informal sociality. Members shared a vision of turning technology to social, creative, and re-creative ends that had been inherited from earlier generations of the counterculture. In order to demonstrate the utopian sociality of

that vision, this analysis will briefly trace one line of inheritance through which that vision passed to Cyborganic.

Communications scholar Fred Turner has traced the connections linking 1960s counterculture to contemporary cyberculture through the WELL, an early Bay Area online community started by Whole Earth Catalog founder, Stewart Brand. Turner identifies the WELL "and the increasingly important form of technologically mediated sociability it represents," with a group within the counterculture he calls "the New Communalists." This group, in contrast to the New Left, "stepped away from agonistic politics and sought instead to change the world by establishing new, exemplary communities" (Turner 2005, 491-493). Through the WELL and the wider Bay Area, Internet community, Cyborganic drew on the legacy of the New Communalists in its mission to combine information technology, economic activity, and community. Like the WELL, it was an exemplary community created to demonstrate the power and possibilities of computer networking; and it was in this sense utopian, the demonstration of an ideal. Like the WELL, it was shaped by the profound transformations of work and life in the network society. However, it is as a response to the economic, social, and cultural transformations of network society that Cyborganic's utopian dimensions were most significant. I have called this response a "project for life" to distinguish it from the business project, but propose that it can also be understood as a cultural commune of the type Castells examines in his theory of meaning and identity in network society (1997). Let me first present the core features of Castells's analysis of "the cultural communes of the information age," then turn to discuss Cyborganic as an urban social movement aimed at producing a "local utopia" addressed to "the real issues of our time" (Castells 1997, 61).

In the second volume of his trilogy on the Information Age, Castells argues that cultural communes are the main alternative for the construction of identity and meaning for those who seek to resist "the individualization of identity attached to life in the global

networks of power and wealth" (1997, 65). Whether organized around Islamic or Christian fundamentalism, nationalism, or the local community, such communes have three main features. They are: 1) "reactions to prevailing social trends;" 2) "defensive identities that function as refuge and solidarity," and; 3) "culturally constituted; that is organized around a specific set of values." As defensive projects, Castells argues, they represent reactions against "three fundamental threats, perceived in all societies, by the majority of humankind, in this end of millennium." (1997, 65)

Reaction against globalization, which dissolves the autonomy of institutions, organizations, and communication systems where people live. Reaction against networking and flexibility, which blur the boundaries or membership and involvement, individualize social relationships of production, and induce the structural instability of work, space, and time. And reaction against the crisis of the patriarchal family, at the roots of the transformation of mechanisms of security-building, socialization, sexuality, and, therefore, of personality systems." (Castells 1997, 65-66)

Though Castells characterizes them as primarily defensive formations, and cautions that their cultural resistance may never move outside the commune; he suggests nonetheless "that from such communes, new subjects—that is collective agents of social transformation—may emerge" and, thus they are a potential source of social change (1997, 67). While Cyborganic differs in important ways from the cases examined in Castells's work, it shares the features of a cultural commune and it is in that context that the project's utopian dimensions are most significant.

Cyborganic can be read as a defensive identity constructed around preserving the values of the earlier generation on the Internet at a time when uninitiated users ("newbies") were flocking online in greater numbers every day. Many Cyborganics had prior online experience and were socialized in the Internet culture in forums like the WELL, Fidonet, and Usenet, and a core part of the group's mission was to bring the kind of community people had found in these earlier forums to the younger generation coming to San Francisco to work in the Internet industry. As a community, Cyborganic was thus akin to the immigrant

organizations of 19<sup>th</sup> century America, a social group for those in a new land both online and in the City.

The great majority of Cyborganics were migrants who came to the Bay Area, either for college, graduate school, or work. This theme emerges throughout my research, but especially in response to the question of what motivated most people to participate in Cyborganic.

I think the motivation was rooted in a few factors: general socialization, common interests, young people in a new city immersed in a fresh wave of technology that they were helping to shape, and communal/joint education about these new technologies and possibilities. TNDs played an interesting and important role for many of the people in the community because so many of them were new to San Francisco. It was a time when many (myself included) were making that transition from high school or college into being an 'adult' and striking out on your own career-wise, financially, new city, etc.

Heidi, born in 1973, Self-employed – Creative (Founder, [ChickClick](#)<sup>8</sup>)  
Questionnaire response 9/19/2004

Even many of those who grew up in the Bay Area were beginning their careers and making the transition to independent adult life. For such people Cyborganic provided a ready-made community addressed to a host of human needs from housing and employment, to dating and recreation and, indeed, the chief way Cyborganic grew was by providing such support. Time and again my informants speak about Cyborganic as a “support system” that offered assistance provided by families, ethnic organizations, and employers in a bygone era. Birthdays and holidays were celebrated (e.g. Cyborganic Seder 1996); partnerships facilitated; and aid and comfort given at times of crisis within a community of friends, neighbors, and co-workers whose collectivity extended beyond the workplace into their lives as a whole. The “twenty-somethings” who came to San Francisco to work in the web industry had grown up in the increasingly competitive, highly volatile era of “Reganomics” and the “Go-Go Eighties.” They had no expectation of a social safety net from the state, nor

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<sup>8</sup> <http://www.heidiswanson.com/html/ccframeset.html>

that a college education would provide entrée to life long job. They built a community to address the whole range of human needs around the techno-meritocratic, hacker, virtual communitarian, and entrepreneurial values of Internet culture (Castells, 200). For this reason I call Cyborganic a project for life and regard it as a cultural commune addressed to resisting the individualizing forces of globalization, networking, and the crisis of the patriarchal family. It shares the three features Castells identifies as central to such groups: (1) as a reaction against prevailing social trends in the organization of labor, the crisis of the family, and crisis of legitimacy of mainstream culture as a source of meaning and identity; (2) as a defensive identity; and (3) as a geographically and historically specific community organized around shared cultural values.

It is as a self-conscious project to create a community (a cultural commune) both online and off-line in response to the lack of such community in contemporary, mainstream culture that I regard Cyborganic as most utopian. Many scholars have discussed the impact of the Internet culture on the New Economy (Himanen 2001, Castells 2001, Florida 2002, Ross 2003, Weber 2004), echoing Andrew Ross's conclusion that "the workplaces of the New Economy brought ashore some ideals that would qualify as utopian. (2003: 255)" However, less attention has been directed outside the realm of economically productive work. This second analysis has aimed to highlight the utopian dimensions of Cyborganic, as a contemporary project to realize the synthesis of information technology, commerce, and community inherited from the New Communalists of the counterculture. Just as the significance of the business project can be seen in its connection to pioneering web and new media firms, software products and production processes (*Wired*, Hotwired, CNET, Vignette Story Server, and the Apache Project), the significance of the community project can be seen in the continuing influence of Cyborganic as an exemplary community for imagining and managing life in the network society.

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